

# UCLA General Catalog 2023-24

Education



Research



Public Service





# Academic Calendars

## 2023–2024

### Fall Quarter 2023

Quarter begins	September 25
Instruction begins	September 28
Veterans Day holiday	November 10
Thanksgiving holiday	November 23–24
Instruction ends	December 8
Common final examinations	December 9–10
Final examinations	December 11–15
Quarter ends	December 15
Christmas holiday	December 25–26
Winter campus closure (tentative)	December 27–29
New Year's holiday	January 1–2

### Winter Quarter 2024

Quarter begins	January 3
Instruction begins	January 8
Martin Luther King, Jr. holiday	January 15
Presidents' Day holiday	February 19
Instruction ends	March 15
Common final examinations	March 16–17
Final examinations	March 18–22
Quarter ends	March 22

### Spring Quarter 2024

Quarter begins	March 27
César Chávez holiday	March 29
Instruction begins	April 1
Memorial Day holiday	May 27
Instruction ends	June 7
Common final examinations	June 8–9
Final examinations	June 10–14
Quarter ends	June 14
<b>Commencement ceremonies</b>	June 14–16

### Summer 2024

Juneteenth holiday	June 19
Summer session begins	June 24
Independence Day holiday	July 4
Labor Day holiday	September 2
Summer session ends	September 13

## 2024–2025

### Fall Quarter 2024

Quarter begins	September 23
Instruction begins	September 26
Veterans Day holiday	November 11
Thanksgiving holiday	November 28–29
Instruction ends	December 6
Common final examinations	December 7–8
Final examinations	December 9–13
Quarter ends	December 13
Winter campus closure (tentative)	December 23, 26–27, 30
Christmas holiday	December 24–25
New Year's holiday	December 31–January 1

### Winter Quarter 2025

Quarter begins	January 2
Instruction begins	January 6
Martin Luther King, Jr. holiday	January 20
Presidents' Day holiday	February 17
Instruction ends	March 14
Common final examinations	March 15–16
Final examinations	March 17–21
Quarter ends	March 21

### Spring Quarter 2025

Quarter begins	March 26
César Chávez holiday	March 28
Instruction begins	March 31
Memorial Day holiday	May 26
Instruction ends	June 6
Common final examinations	June 7–8
Final examinations	June 9–13
Quarter ends	June 13
<b>Commencement ceremonies</b>	June 13–15

### Summer 2025

Juneteenth holiday	June 19
Summer session begins	June 23
Independence Day holiday	July 4
Labor Day holiday	September 1
Summer session ends	September 12

# ***UCLA GENERAL CATALOG***

## ***2023-24***



# General Catalog Information

## UCLA General Catalog

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## UCLA®

**University of California, Los Angeles**

Los Angeles, California 90095-1361

Main telephone: 310-825-4321 (campus operator)

Speech- and hearing-impaired access: TTY 310-825-2833

For complete department and school address information, see the [campus directory](#). For mailing address formats, see [address standards for UCLA mail](#).

## Accreditation

UCLA is accredited by the Western Association of Schools and Colleges (WASC) [Senior College and University Commission](#), and by numerous special agencies. More information about UCLA accreditation is available at the UCLA Academic Planning and Budget [accreditation](#) web page.

## Catalog Publication

The [UCLA General Catalog](#) is published annually.

Every effort has been made to ensure the accuracy of the information presented in the *UCLA General Catalog*. However, all courses, course descriptions, instructor designations, curricular degree requirements, and fees described herein are subject to change or deletion without notice. Department websites referenced herein are published independently and may not reflect approved curricula and courses information. Consult this *Catalog* for the most current, officially approved courses and curricula.

## Online Publications

See the [Registrar's website](#) for current detailed information about registration, enrollment, fees, deadlines, [updated course descriptions](#), and other [academic information](#). Classes offered each term can be viewed on the [Schedule of Classes](#).

## School Information Materials

Other information about UCLA may be found in materials produced by the College of Letters and Science, and the schools of Arts and Architecture; Dentistry; Education and Information Studies; Engineering and Applied Science; Law; Management; Medicine; Music; Nursing; Public Affairs; Public Health; and Theater, Film, and Television.

Current graduate program information, including officially approved graduate programs and requirements, is available on the [Graduate Education](#) website.

## Production Credits

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## Cover and Title Page

**Cover:** Late 1920s ceiling fresco in the Royce Hall portico personifies four academic disciplines (clockwise from top): Literature, Philosophy, History, and Mathematics. Originally painted by Julian Ellsworth Garnsey, the mural was restored after the 1994 Northridge earthquake by alumna Tatyana M. Thompson. Personifying the UCLA mission of education, research, and service are (from left): mathematics professor Andrea L. Bertozzi with students simulating oil movement dynamics, geoscience and climate science professor Aradhna Tripathi, and students beautifying a school on Volunteer Day. **Title page:** Royce Hall portico. Photo credits: © Reed Hutchinson, UCLA Image Library; © 2003 by Alan Nyiri, courtesy of the Atkinson Photographic Archive.



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# From the Chancellor

This *Catalog* describes the incredible array of academic offerings available to you at UCLA. Choose from 5,000 courses each term, 141 bachelor's degree programs, 143 master's and professional degree programs, 122 doctoral and professional degree programs, and 104 minors as you build a course of study that suits your interests and aspirations. As a world-class research university with strengths in disciplines from the arts to the sciences, UCLA offers you a remarkable range of academic possibilities. Additionally, more than 70 percent of our undergraduate classes have fewer than 30 students—so you can learn in smaller settings and get to know your professors and classmates.

UCLA is a welcoming place for students from diverse backgrounds. Those admitted to our first-year class for 2022–23, for example, represent all 50 U.S. states and Washington, DC; and 87 countries. All of our students have a thirst for knowledge, and are determined to make a positive impact on society.

Our faculty of more than 5,200 is made up of renowned scholars who are highly regarded as leaders in their fields. At UCLA, we are proud that undergraduates, in addition to graduate students, have opportunities to study with top professors and conduct research under their guidance.

This *Catalog* includes opportunities that offer priority enrollment for lower-division students. Among these are *Fiat Lux* seminars, which are small classes in a broad range of subjects; clusters, which engage students in yearlong, team-taught interdisciplinary study of timely topics; and advanced research opportunities.

Despite the challenges we have all faced these past few years, UCLA remains a vibrant community of forward-looking achievers, who think outside traditional academic boundaries and share an exuberant desire to improve the world. We have accomplished so much in our first 104 years, and I look forward to seeing you continue this legacy of innovation throughout your time at UCLA and far beyond.

Gene D. Block  
Chancellor

# Majors and Degrees

## College of Letters and Science

### African American Studies Department

African American Studies . . . . . BA, MA

### African Studies Interdepartmental Program

African Studies . . . . . MA

### American Indian Studies Department

American Indian Studies . . . . . BA, MA

### Anthropology Department

Anthropology . . . . . BA, BS, MA, PhD

### Archaeology Interdepartmental Program

Archaeology . . . . . MA, CPhil, PhD

### Art History Department

Art History . . . . . BA, MA, PhD

### Asian American Studies Department

Asian American Studies . . . . . BA, MA

### Asian Languages and Cultures Department

Asian Humanities . . . . . BA

Asian Languages and Cultures . . . . . MA, CPhil, PhD

Asian Languages and Linguistics . . . . . BA

Asian Religions . . . . . BA

Chinese . . . . . BA

Japanese . . . . . BA

Korean . . . . . BA

Southeast Asian Studies . . . . . BA

Teaching Asian Languages . . . . . MA

### Atmospheric and Oceanic Sciences Department

Atmospheric and Oceanic Sciences . . . . BS, MS, CPhil, PhD

Atmospheric and Oceanic Sciences/Mathematics . . . . . BS

Climate Science . . . . . BS

### Bioinformatics Interdepartmental Program

Bioinformatics . . . . . MS, PhD

### Chemistry and Biochemistry Department

Biochemistry . . . . . BS

Biochemistry, Molecular and Structural

Biology . . . . . MS, CPhil, PhD

Chemistry . . . . . BS, MS, CPhil, PhD

Chemistry/Materials Science . . . . . BS

General Chemistry . . . . . BS

Master of Applied Chemical Sciences . . . . . MACS

### Chicana/o and Central American Studies Department, César E. Chávez

Chicana and Chicano Studies . . . . . BA, MA, CPhil, PhD

### Classics Department

Classical Civilization . . . . . BA

Classics . . . . . MA, CPhil, PhD

Greek . . . . . BA, MA

Greek and Latin . . . . . BA

Latin . . . . . BA, MA

### Communication Department

Communication . . . . . BA, MS, PhD

### Comparative Literature Department

Comparative Literature . . . . . BA, MA, CPhil, PhD

### Computational and Systems Biology Interdepartmental Program

Computational and Systems Biology . . . . . BS

### Conservation of Cultural Heritage Interdepartmental Program

Conservation of Cultural Heritage . . . . . MA

Conservation of Material Culture . . . . . MS, PhD

### Disability Studies Interdepartmental Program

Disability Studies . . . . . BA

### Earth, Planetary, and Space Sciences Department

Earth and Environmental Science . . . . . BA

Engineering Geology . . . . . BS

Geochemistry . . . . . MS, CPhil, PhD

Geology . . . . . BS, MS, CPhil, PhD

Geophysics . . . . . BS

Geophysics and Space Physics . . . . . MS, PhD

Planetary Science . . . . . MS, PhD

### East Asian Studies Interdepartmental Program

East Asian Studies . . . . . MA

### Ecology and Evolutionary Biology Department

Biology . . . . . BS, MS, CPhil, PhD

Ecology, Behavior, and Evolution . . . . . BS

Marine Biology . . . . . BS

### Economics Department

Business Economics . . . . . BA

Economics . . . . . BA, MA, CPhil, PhD

Master of Quantitative Economics . . . . . MQE

### English Department

American Literature and Culture . . . . . BA

English . . . . . BA, MA, CPhil, PhD

### Environment and Sustainability, Institute of the Center for Interdisciplinary Instruction

Doctor of Environmental Science and Engineering . . . . . DEnv



## 2 / Majors and Degrees

Environment and Sustainability . . . . .	MS, PhD
Environmental Science . . . . .	BS
<b>European Languages and Transcultural Studies Department</b>	
European Languages and Transcultural Studies . . . . .	BA
European Languages and Transcultural Studies with French and Francophone . . . . .	BA
European Languages and Transcultural Studies with German . . . . .	BA
European Languages and Transcultural Studies with Italian . . . . .	BA
European Languages and Transcultural Studies with Scandinavian . . . . .	BA
French and Francophone Studies . . . . .	MA, CPhil, PhD
Germanic Language . . . . .	MA, CPhil, PhD
Italian . . . . .	MA, CPhil, PhD
Nordic Studies . . . . .	BA
Scandinavian . . . . .	MA
<b>Gender Studies Department</b>	
Gender Studies . . . . .	BA, MA, PhD
<b>Geography Department</b>	
Geography . . . . .	BA, MA, CPhil, PhD
Geography/Environmental Studies . . . . .	BA
Master of Applied Geospatial Information Systems and Technologies . . . . .	MAGIST
<b>Global Studies Interdepartmental Program</b>	
Global Studies . . . . .	BA
<b>History Department</b>	
History . . . . .	BA, MA, CPhil, PhD
<b>Individual Field of Concentration</b>	
Individual Field of Concentration . . . . .	BA, BS
<b>Indo-European Studies Interdepartmental Program</b>	
Indo-European Studies . . . . .	MA, CPhil, PhD
<b>Integrative Biology and Physiology Department</b>	
Physiological Science . . . . .	BS, MS
<b>International and Area Studies Interdepartmental Program</b>	
African and Middle Eastern Studies . . . . .	BA
Asian Studies . . . . .	BA
European Studies . . . . .	BA
Latin American Studies . . . . .	BA
<b>International Development Studies Interdepartmental Program</b>	
International Development Studies . . . . .	BA
<b>Labor Studies Interdepartmental Program</b>	
Labor Studies . . . . .	BA
<b>Latin American Studies Interdepartmental Program</b>	
Latin American Studies . . . . .	MA

## Linguistics Department

Applied Linguistics . . . . .	BA
Linguistics . . . . .	BA, MA, CPhil, PhD
Linguistics and Anthropology . . . . .	BA
Linguistics and Asian Languages and Cultures . . . . .	BA
Linguistics and Computer Science . . . . .	BA
Linguistics and English . . . . .	BA
Linguistics and Philosophy . . . . .	BA
Linguistics and Psychology . . . . .	BA
Linguistics and Spanish . . . . .	BA

## Mathematics Department

Applied Mathematics . . . . .	BS
Data Theory . . . . .	BS
Financial Actuarial Mathematics . . . . .	BS
Mathematics . . . . .	BS, MA, MAT, CPhil, PhD
Mathematics/Applied Science . . . . .	BS
Mathematics for Teaching . . . . .	BS
Mathematics of Computation . . . . .	BS

## Mathematics/Economics Interdepartmental Program

Mathematics/Economics . . . . .	BS
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## Microbiology, Immunology, and Molecular Genetics Department

Microbiology, Immunology, and Molecular Genetics . . . . .	BS, MS, PhD
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## Molecular Biology Interdepartmental Program

Molecular Biology . . . . .	MS, PhD
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## Molecular, Cell, and Developmental Biology Department

Molecular, Cell, and Developmental Biology . . . . .	BS, MS, CPhil, PhD
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## Molecular, Cellular, and Integrative Physiology Interdepartmental Program

Molecular, Cellular, and Integrative Physiology . . . . .	PhD
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## Near Eastern Languages and Cultures Department

Ancient Near East and Egyptology . . . . .	BA
Arabic . . . . .	BA
Iranian Studies . . . . .	BA
Islamic Studies . . . . .	MA, CPhil, PhD
Jewish Studies . . . . .	BA
Middle Eastern Studies . . . . .	BA
Near Eastern Languages and Cultures . . . . .	MA, CPhil, PhD

## Neuroscience Interdepartmental Program

Neuroscience . . . . .	BS
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## Philosophy Department

Philosophy . . . . .	BA, MA, CPhil, PhD
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## Physics and Astronomy Department

Astronomy and Astrophysics . . . . .	MAT, MS, PhD
Astrophysics . . . . .	BS

Biophysics ..... BS  
 Master of Quantum Science and Technology ..... MQST  
 Physics ..... BA, BS, MAT, MS, PhD

#### Political Science Department

Political Science ..... BA, MA, CPhil, PhD

#### Psychology Department

Cognitive Science ..... BS  
 Psychobiology ..... BS  
 Psychology ..... BA, MA, CPhil, PhD

#### Slavic, East European, and Eurasian Languages and Cultures Department

Central and East European Languages and Cultures ..... BA  
 Russian Language and Literature ..... BA  
 Russian Studies ..... BA  
 Slavic, East European, and Eurasian Languages and Cultures ..... MA, CPhil, PhD

#### Social Science Interdepartmental Program

Master of Social Science ..... MSS

#### Society and Genetics, Institute for Center for Interdisciplinary Instruction

Human Biology and Society ..... BA, BS

#### Sociology Department

Sociology ..... BA, MA, CPhil, PhD

#### Spanish and Portuguese Department

Hispanic Languages and Literatures ..... CPhil, PhD  
 Portuguese ..... MA  
 Portuguese and Brazilian Studies ..... BA  
 Spanish ..... BA, MA  
 Spanish and Community and Culture ..... BA  
 Spanish and Linguistics ..... BA  
 Spanish and Portuguese ..... BA

#### Statistics and Data Science Department

Data Theory ..... BS  
 Master of Applied Statistics ..... MAS  
 Statistics ..... BS, MS, CPhil, PhD

#### Study of Religion Interdepartmental Program

Study of Religion ..... BA

## David Geffen School of Medicine

#### Computational Medicine Department

Biomathematics ..... MS, PhD  
 Clinical Research ..... MS

#### Human Genetics Department

Genetic Counseling ..... MS  
 Human Genetics ..... MS, PhD

#### Medicine Schoolwide Program

Doctor of Medicine ..... MD

#### Microbiology, Immunology, and Molecular Genetics Department

Microbiology, Immunology, and Molecular Genetics . MS, PhD

#### Molecular and Medical Pharmacology Department

Molecular and Medical Pharmacology ..... MS, PhD

#### Molecular, Cellular, and Integrative Physiology Interdepartmental Program

Molecular, Cellular, and Integrative Physiology ..... PhD

#### Neuroscience Interdepartmental Program

Neuroscience ..... PhD

#### Physics and Biology in Medicine Interdepartmental Program

Physics and Biology in Medicine ..... MS, PhD

## Henry Samueli School of Engineering and Applied Science

#### Bioengineering Department

Bioengineering ..... BS, MS, PhD

#### Chemical and Biomolecular Engineering Department

Chemical Engineering ..... BS, MS, PhD

#### Civil and Environmental Engineering Department

Civil Engineering ..... BS, MS, PhD

#### Computer Science Department

Computer Engineering ..... BS  
 Computer Science ..... BS, MS, PhD  
 Computer Science and Engineering ..... BS

#### Electrical and Computer Engineering Department

Computer Engineering ..... BS  
 Electrical and Computer Engineering ..... MS, PhD  
 Electrical Engineering ..... BS

#### Engineering Schoolwide Programs

Engineer ..... Engr  
 Engineering ..... MS  
 Engineering – Aerospace ..... MS  
 Engineering – Computer Networking ..... MS  
 Engineering – Electrical ..... MS  
 Engineering – Electronic Materials ..... MS  
 Engineering – Integrated Circuits ..... MS  
 Engineering – Manufacturing and Design ..... MS  
 Engineering – Materials Science ..... MS  
 Engineering – Mechanical ..... MS  
 Engineering – Signal Processing and Communications . MS  
 Engineering – Structural Materials ..... MS



## 4 / Majors and Degrees

Master of Engineering . . . . . MEng

### Materials Science and Engineering Department

Materials Engineering . . . . . BS

Materials Science and Engineering . . . . . MS, PhD

### Mechanical and Aerospace Engineering Department

Aerospace Engineering . . . . . BS, MS, PhD

Manufacturing Engineering . . . . . MS

Mechanical Engineering . . . . . BS, MS, PhD

## Herb Alpert School of Music

### Ethnomusicology Department

Ethnomusicology . . . . . BA, MA, CPhil, PhD

### Global Jazz Studies Interdepartmental Program

Global Jazz Studies . . . . . BA

### Music Department

Master of Music . . . . . MM

Music . . . . . BA, MA, DMA, CPhil, PhD

Music Composition . . . . . BA

Music Education . . . . . BA

Music Performance . . . . . BM

### Music Industry Interdepartmental Program

Music Industry . . . . . BA

### Musicology Department

Music History and Industry . . . . . BA

Musicology . . . . . BA, MA, CPhil, PhD

## John E. Anderson Graduate School of Management

### Management Department

Business Analytics . . . . . MS

Executive Master of Business Administration . . . . . EMBA

Fully Employed Master of Business Administration . . . . . FEMBA

Global Executive Master of Business Administration

for Asia Pacific . . . . . GEMBA

Management . . . . . MS, CPhil, PhD

Master of Business Administration . . . . . MBA

Master of Financial Engineering . . . . . MFE

## Jonathan and Karin Fielding School of Public Health

### Biostatistics Department

Biostatistics . . . . . MS, PhD

Master of Data Science in Health . . . . . MDSh

### Community Health Sciences Department

Community Health Sciences . . . . . MS, PhD

Master of Public Health for Health Professionals. . . MPH-HP

### Environmental Health Sciences Department

Environmental Health Sciences . . . . . MS, PhD

### Epidemiology Department

Epidemiology . . . . . MS, PhD

### Health Policy and Management Department

Executive Master of Public Health . . . . . EMPH

Health Policy and Management . . . . . MS, PhD

Master of Healthcare Administration . . . . . MHA

### Molecular Toxicology Interdepartmental Program

Molecular Toxicology . . . . . PhD

### Public Health

Public Health . . . . . BA, BS

### Public Health Schoolwide Programs

Biostatistics . . . . . MPH

Community Health Sciences . . . . . MPH

Environmental Health Sciences . . . . . MPH

Epidemiology . . . . . MPH

Health Management . . . . . MPH

Health Policy . . . . . MPH

Master of Public Health . . . . . MPH

## Meyer and Renee Luskin School of Public Affairs

### Public Affairs Schoolwide Programs

Public Affairs . . . . . BA

### Public Policy Department

Master of Public Policy . . . . . MPP

### Social Welfare Department

Master of Social Welfare . . . . . MSW

Social Welfare . . . . . PhD

### Urban Planning Department

Master of Urban and Regional Planning . . . . . MURP

Master of Urban and Regional Planning—Institut

d'Etudes de Paris . . . . . MURP

Urban Planning . . . . . PhD

## School of the Arts and Architecture

### Architecture and Urban Design Department

Architectural Studies . . . . . BA

Architecture . . . . . MA, PhD

Architecture and Urban Design . . . . .MS  
 Master of Architecture . . . . . MArch

#### Art Department

Art. . . . . BA, MFA

#### Design|Media Arts Department

Design|Media Arts . . . . . BA, MFA

#### Individual Field

Individual Field . . . . . BA

#### World Arts and Cultures/Dance Department

Choreographic Inquiry . . . . . MFA

Culture and Performance . . . . . MA, PhD

Dance . . . . . BA

World Arts and Cultures . . . . . BA

## School of Dentistry

#### Dentistry Department

Doctor of Dental Surgery . . . . . DDS

#### Oral Biology Section

Oral Biology . . . . . MS, PhD

## School of Education and Information Studies

#### Education Department

Doctor of Education . . . . . EdD

Education . . . . . MA, PhD

Educational Administration . . . . . Joint EdD with UCI

Education and Social Transformation . . . . . BA

Master of Education . . . . . MEd

Special Education . . . . . Joint PhD with CSULA

#### Information Studies Department

Information Studies . . . . . PhD

Master of Library and Information Science . . . . . MLIS

## School of Law

#### Law Department

Doctor of Juridical Science . . . . . SJD

Juris Doctor . . . . . JD

Master of Laws . . . . . LL.M.

Master of Legal Studies . . . . . MLS

## School of Nursing

#### Nursing Department

Doctor of Nursing Practice . . . . . DNP

Master of Science in Nursing . . . . . MSN

Nursing . . . . . BS, MS, PhD

## School of Theater, Film, and Television

#### Film, Television, and Digital Media Department

Film and Television . . . . . BA, MA, MFA, CPhil, PhD

#### Individual Field

Individual Field . . . . . BA

#### Theater Department

Theater . . . . . BA, MFA

Theater and Performance Studies . . . . . CPhil, PhD

## Undergraduate Minors and Specializations

### Minors

#### College of Letters and Science

African American Studies

African and Middle Eastern Studies

African Studies

American Indian Studies

Ancient Near East and Egyptology

Anthropology

Applied Developmental Psychology

Arabic and Islamic Studies

Armenian Studies

Art History

Asian American Studies

Asian Humanities

Asian Languages

Atmospheric and Oceanic Sciences

Biomedical Research

Brain and Behavioral Health

Central American Studies

Central and East European Studies

Chicana and Chicano Studies

Classical Civilization

Cognitive Science

Community Engagement and Social Change

Comparative Literature

Conservation Biology

Creative Writing

Digital Humanities

Earth and Environmental Science

East Asian Studies

English

## 6 / Majors and Degrees

Environmental Systems and Society  
European Languages and Transcultural Studies  
European Languages and Transcultural Studies with French and Francophone  
European Languages and Transcultural Studies with German  
European Languages and Transcultural Studies with Italian  
European Studies  
Evolutionary Medicine  
Food Studies  
Gender Studies  
Geochemistry  
Geography  
Geography/Environmental Studies  
Geology  
Geophysics and Planetary Physics  
Geospatial Information Systems and Technologies  
Global Health  
Global Studies  
Greek Language and Culture  
Hebrew and Jewish Studies  
History  
History of Science, Technology, and Medicine  
International Migration Studies  
Iranian Studies  
Israel Studies  
Labor Studies  
Latin American Studies  
Latin Language and Culture  
Lesbian, Gay, Bisexual, Transgender, and Queer Studies  
Linguistics  
Literature and the Environment  
Mathematical Biology  
Mathematics  
Mathematics for Teaching  
Mexican Studies  
Middle Eastern Studies  
Neuroscience  
Philosophy  
Pilipino Studies  
Portuguese and Brazilian Studies  
Professional Writing  
Russian Language  
Russian Literature  
Russian Studies  
Scandinavian  
Science Education  
Social Data Science  
Social Thought  
Society and Genetics  
South Asian Studies

Southeast Asian Studies  
Spanish  
Spanish Linguistics  
Statistics and Data Science  
Structural Biology  
Study of Religion  
Systems Biology

### **Henry Samueli School of Engineering and Applied Science**

Bioinformatics  
Data Science Engineering  
Environmental Engineering

### **Herb Alpert School of Music**

Ethnomusicology  
Iranian Music  
Music Industry  
Musicology

### **John E. Anderson Graduate School of Management**

Accounting  
Entrepreneurship

### **Meyer and Renee Luskin School of Public Affairs**

Gerontology  
Public Affairs  
Urban and Regional Studies

### **Jonathan and Karin Fielding School of Public Health**

Public Health

### **School of the Arts and Architecture**

Visual and Performing Arts Education

### **School of Education and Information Studies**

Education Studies  
Information and Media Literacy

### **School of Theater, Film, and Television**

Film, Television, and Digital Media  
Theater

## **Computing Specializations**

These departments in the College of Letters and Science offer a computing specialization to some or all majors. See the individual department section for details.

Chemistry  
Communication  
Ecology and Evolutionary Biology  
Linguistics  
Mathematics  
Mathematics/Economics  
Molecular, Cell, and Developmental Biology  
Psychology  
Sociology

# Graduate Articulated and Concurrent Degrees

Inquiries about articulated and concurrent degree programs should be directed to graduate advisers in the departments and schools involved. Students should contact [Graduate Admissions/Student and Academic Affairs](#) for information on designing articulated programs.

## Articulated Degrees

Articulated degree programs permit no credit overlap; students must complete degree requirements separately for each degree.

- Clinical Research MS/Doctor of Medicine
- Division of Graduate Education health science major PhD/Doctor of Medicine
- Doctor of Medicine/Education MA
- Doctor of Medicine/Master of Legal Studies
- Doctor of Medicine/Master of Public Health
- Doctor of Dental Surgery or Certificate/Oral Biology MS or PhD
- Latin American Studies Interdepartmental MA/Master of Education in Curriculum
- Latin American Studies Interdepartmental MA/Master of Library and Information Science
- Latin American Studies Interdepartmental MA/Master of Public Health

## Concurrent Degrees

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- African American Studies MA/Juris Doctor
- African Studies Interdepartmental MA/Master of Public Health
- American Indian Studies MA/Juris Doctor
- Asian American Studies MA/Master of Public Health

- Asian American Studies MA/Master of Social Welfare
- Community Health Sciences MPH/Master of Urban Planning
- Computer Science MS/Master of Business Administration
- Doctor of Dental Surgery/Master of Business Administration
- Doctor of Education/Juris Doctor
- Doctor of Medicine/Master of Business Administration
- Doctor of Medicine/Master of Public Policy
- Education MA/Juris Doctor
- Education PhD/Juris Doctor
- Environmental Health Sciences MPH/Master of Urban Planning
- Juris Doctor/Master of Business Administration
- Juris Doctor/Master of Education
- Juris Doctor/Master of Public Health
- Juris Doctor/Master of Public Policy
- Juris Doctor/Master of Social Welfare
- Juris Doctor/Master of Urban Planning
- Juris Doctor/Philosophy PhD
- Latin American Studies Interdepartmental MA/Master of Urban Planning
- Latin American Studies Interdepartmental MA/Master of Business Administration
- Master of Architecture/Master of Urban Planning
- Master of Business Administration/Master of Library and Information Science
- Master of Business Administration/Master of Public Health
- Master of Business Administration/Master of Public Policy
- Master of Business Administration/Master of Science in Nursing
- Master of Business Administration/Master of Urban Planning
- Master of Public Health/Master of Public Policy
- Master of Public Health/Master of Social Welfare
- Master of Public Policy/Master of Social Welfare



# About UCLA

Few universities in the world offer the extraordinary range and diversity of academic programs that students enjoy at UCLA. Leadership in education, research, and public service make UCLA a beacon of excellence in higher education, as students, faculty members, and staff come together in a true community of scholars to advance knowledge, address societal challenges, and pursue intellectual and personal fulfillment.

As a public research university, the mission of UCLA is to create, disseminate, preserve, and apply knowledge to better society. Based on a foundation of learning and teaching, the mission also focuses on discovery, creativity, innovation, and civic engagement.

UCLA administration is led by its chancellor, provost, vice chancellors and vice provosts, and deans of the divisions and schools. Its Student Affairs division oversees programs and services that support student academic and personal success. Its Division of Graduate Education oversees recruitment and admissions, funding and appointments, and maintenance of high-quality standards in graduate programs. Through the Academic Senate, faculty share in the operation and management of UCLA.

UCLA is comprised of the College of Letters and Science—with its humanities, life sciences, physical sciences, social sciences, and undergraduate education divisions—and 12 professional schools: School of the Arts and Architecture; School of Dentistry; School of Education and Information Studies; Henry Samueli School of Engineering and Applied Science; School of Law; John E. Anderson Graduate School of Management; David Geffen School of Medicine at UCLA; Herb Alpert School of Music; School of Nursing; Meyer and Renee Luskin School of Public Affairs; Jonathan and Karin Fielding School of Public Health; and School of Theater, Film, and Television.

## Education

The National Research Council Committee to Assess Research-Doctorate Programs evaluates the quality of the faculty in 212 American research universities approximately every 15 years. Of the 62 doctorate degree disciplines studied in the 2011 evaluation, 33 UCLA academic departments ranked among the top 10 in the country and 12 ranked among the top 20.

Distinguished faculty members at UCLA include Nobel prizewinners, Guggenheim fellows, Sloan fellows, and Fulbright scholars, as well as numerous members of the National Academy of Sciences and the American Academy

of Arts and Sciences. In fact, UCLA consistently places among the leading universities nationwide in the number of these prestigious awards granted to its faculty members.

This remarkable pool of talent is shared across the College and 12 professional schools. Undergraduate and graduate degree programs are offered by the College and by schools focused on education, engineering, fine arts, media, nursing, performing arts, public affairs, and public health. The other professional schools offer graduate degree programs and undergraduate minors.

Undergraduates may earn one of 141 bachelor degrees; graduate students may earn one of 143 master/professional and 122 doctorate/professional degrees.

Academic programs undergo continuous review and evaluation to maintain their excellence, and new degree programs are added as they are approved by the Academic Senate or the Regents.

## Research

Pushing the boundaries of the known, UCLA researchers—faculty members and students, both graduate and undergraduate—venture every day into uncharted worlds from the molecular to the galactic.

Whether tracing the roots of urban decay, pioneering new drug therapies for cancer, or revealing a black hole at the center of our galaxy, research at UCLA is advancing the frontiers of knowledge.

Among the leading research universities in the world, in 2021-22 UCLA received \$1.72 billion in extramural grants and contracts to support its research. Each year it hosts hundreds of postdoctoral scholars who share its facilities.

UCLA laboratories have seen major breakthroughs in scientific and medical research. Its study centers have helped foster understanding among the various cultures of the world. And its ongoing pursuits of new knowledge in vital areas continue to improve the quality of life for people around the world.

Faculty members teach both undergraduate and graduate courses and, through their research, create knowledge as well as transmit it. At UCLA, students are taught by the people making the discoveries. They exchange ideas with faculty members who are authorities in their fields and, even as undergraduate students, are encouraged to participate in research to experience firsthand the discovery of new knowledge.

## Service

As a public university, serving the community is one of the greatest commitments UCLA makes. Undergraduate and graduate programs, research activities, community outreach programs, and grass-roots participation by students, faculty, staff, and alumni help to forge a partnership between UCLA and the entire Los Angeles region.

With the Ronald Reagan UCLA Medical Center, UCLA furthers its tradition of medical outreach and assures the highest quality of care to Los Angeles and the world. The School of Dentistry, with clinics on campus and in Venice, offers free dental care and treatment to those in need at community health fairs. The **Rape Treatment Center**—located at the UCLA Medical Center, Santa Monica—offers 24-hour care to victims. Faculty and students in the Fielding School of Public Health work in communities around the world to address disparities underlying differences in the health status of individuals, and the School of Nursing offers care to the poor and homeless through its nurse-managed health center at the Union Rescue Mission. UCLA also supports K-12 enhancement programs such as the **Music Partnership Program** in the Herb Alpert School of Music, which funds UCLA students to be academic and musical mentors for at-risk youth.

Students can get involved in the community in many different ways. The **UCLA Volunteer Center** coordinates year-round programs and annual events, such as UCLA Volunteer Day where Bruins perform service work at over 55 community partner sites across Los Angeles. **BruinCorps** tutors under-performing youth in disadvantaged communities.

As UCLA gives to the community, Los Angeles gives something back. UCLA arts and cultural programs, for example, attract more than half a million people each year, drawn by everything from world-class acts performing at Royce Hall to screenings of classic films from the School of Theater, Film, and Television archives. These relationships create opportunities for partnerships and growth that ensure the pre-eminence of UCLA in the twenty-first century and beyond.

## History of UCLA

In 1880—with just 11,000 inhabitants—the pueblo of Los Angeles convinced the state government to establish a normal school (teachers college) in Southern California. Enthusiastic citizens contributed between \$2 and \$500 to purchase a site; and on August 29, 1882, the Los Angeles Branch State Normal School welcomed its first students in a Victorian building that had been erected on the site of an orange grove.

By 1914 Los Angeles had grown to a city of 350,000, and the school moved to new quarters—a Hollywood ranch off a dirt road that later became Vermont Avenue. In 1919 the school became the Southern Branch of the University of California, and offered two years of instruction in letters and science. Third- and fourth-year courses were soon added; the first class of 300 students was graduated in 1925, and two years later the Southern Branch had earned its new name: University of California at Los Angeles. In 1958, *at* was replaced by a comma and the official name became University of California, Los Angeles.

Continued growth mandated a site that could support a larger campus, and in 1927 ground was broken in the chaparral-covered hills of Westwood. The four original buildings—Royce Hall, College Library, Chemistry Building, and Physics-Biology Building—formed a lonesome cluster in the middle of 400 empty acres. The campus hosted 5,500 students its first term in 1929. The UCLA master's degree was established in 1933 and the doctorate in 1936. UCLA was fast becoming a full-fledged university that offered advanced study in almost every field.

Following World War II, UCLA began a period of spectacular growth: in 25 years its enrollment tripled to 27,000 students. The campus undertook what would become a \$260 million building program that included residence halls, parking structures, laboratories, more classrooms, service buildings, athletic and recreational facilities, and a teaching hospital that is now one of the largest and most highly respected in the world. In the late 1950s and 1960s, UCLA was at the center of many milestones: the first open-heart surgery in the western U.S. was performed at its medical center; the first of 10 NCAA men's basketball championships was won; and it became the first ARPANET node, heralding the birth of the Internet.

The rest of the twentieth century, through the opening of the twenty-first, was peppered with notable UCLA events: Nobel prizes awarded to multiple faculty; breakthroughs in treatments for cancer, brain aneurysms, and organ transplants; explosive growth in research grants; more than 30 Oscars awarded to creative alumni; completion of a new medical center; expansion of campus housing to accommodate nearly all incoming freshmen; and becoming the first university to win 100 NCAA team championships.

At the start of the 2010s, UCLA began construction on a series of new residence halls with the goal of expanding guaranteed on-campus housing to all students. In 2016, the Herb Alpert School of Music became the 12th professional school at UCLA and first independent music school in the UC system. UCLA celebrated its centennial in 2019-20, raising \$5.49 billion toward student scholarships, faculty support, research programs, and campus facilities. Today, UCLA is home to over 47,700 students and 4,100 faculty



members. With 223 campus buildings, classes are held in more than 85 facilities. As UCLA passes its 100th anniversary, it remains firmly rooted in Westwood but its reach is beyond borders, with programs and collaborations that span the country, the globe, and even outer space.

## University of California System

UCLA is part of the [University of California](#) (UC) system, which traces its origins to 1868 when Governor Henry H. Haight signed the Organic Act that provided for the first California “complete university.” Classes began the next year at the College of California in Oakland. In 1873 the first Berkeley campus buildings were completed, and the university moved into its new home. The following June, bachelor’s degrees were conferred on 12 graduates.

Today, the University of California is one of the largest and most renowned centers of higher education in the world. Its 10 campuses span the state, from Davis in the north to San Diego in the south. In between are Berkeley, San Francisco, Merced, Santa Cruz, Santa Barbara, Los Angeles, Riverside, and Irvine. All campuses adhere to the same admission guidelines and high academic standards, yet each has its own distinct character and academic individuality. Riverside, for example, excels in the plant sciences and entomology; Davis has a large agricultural school and the only UC veterinary medicine program; San Diego offers excellent oceanography and marine biology programs; and San Francisco is devoted exclusively to the health sciences. Among the campuses are six medical schools and four law schools, as well as schools of architecture, business administration, education, engineering, and many others.

The UC campuses have a combined enrollment exceeding 294,300 students, 75 percent of them California residents. About one-fifth study at the graduate level. Some 150 laboratories, extension centers, and research and field stations



strengthen teaching and research while supplying public service to California and the nation. The collections of over 100 UC libraries on the 10 campuses are surpassed in size in North America only by the U.S. Library of Congress collection.

The UC faculty is internationally known for its distinguished academic achievements. On its 10 campuses the University of California has 31 living Nobel laureates, and membership in the National Academy of Sciences is the largest of any university in the country.

The UC system is governed by a [Board of Regents](#) whose regular members are appointed by the Governor of California. In addition to setting general policy and making budgetary decisions for the UC system, the Regents appoint the President of the University of California, the 10 chancellors, and the directors and deans who administer the affairs of the individual campuses and divisions of the University of California. The Regents delegate authority in academic matters to the [Academic Senate](#), which determines academic policy for the University of California as a whole. The Senate, composed of faculty members and certain administrative officers, determines conditions for admission and granting of degrees, authorizes and supervises courses and curricula, and advises UC administrators on budgets and faculty appointments and promotions. Local divisions of the universitywide Academic Senate determine academic policy for each campus. Students also participate in policymaking at campus and system levels.

## Campus Life

Just six miles from the ocean, UCLA lies in one of the most attractive areas of Southern California. It is bordered on the north by the protected wilderness of the Santa Monica Mountains and on the south by Westwood Village. Besides lecture halls and classrooms, campus facilities include libraries, studios, theaters, and a planetarium; athletic fields, famed Pauley Pavilion, and recreation/exercise space; gar-

dens and outdoor spaces accented by the Inverted Fountain and Janss Steps; the Hill, home to campus residence halls and common spaces; and its renowned medical center.

## Unique Setting

UCLA is nestled in the hills of Westwood, with the Romanesque architecture of its early buildings a backdrop for diverse campus settings. Bruin Walk continually echoes with the chatter of students and vendors, but nearby, the botanical gardens provide a serene escape. While a hip-hop band energizes lunchtime crowds in Bruin Plaza, a classical recital may be taking place in Schoenberg Music Building, and students contemplating a Rodin or Lachaise in the Murphy Sculpture Garden may be unaware of a political rally organizing in Meyerhoff Park. With its traditional appearance and temperate climate, it is not unusual to find campus locations being used for filming television and movies and hosting large events.

To give a feel for the dynamic atmosphere at UCLA, [tours for prospective undergraduates](#) are offered by Undergraduate Admission.

## Large Campus with a Comfortable Feel

The general campus population, some 43,670 students, is enriched by an additional 4,162 in the health sciences schools of dentistry, medicine, nursing, and public health. While such numbers sound daunting, UCLA offers orientation sessions and innovative academic assistance programs to help acclimate new students. Through a range of services and social programs, new students quickly meet people with common interests in their academic departments, residence halls, or clubs and organizations. Even athletic events help to cement relationships as the campus comes together to celebrate Bruin victories.

Large lecture groups exist, especially in introductory courses; however, 83 percent of lower-division lecture classes in 2021-22 had under 200 students, and UCLA is striving to further reduce class size. Large lecture classes typically include discussion sections of about 25 students, or smaller seminars and laboratory classes. There is an overall ratio of one faculty member for approximately 18 students.

Most UCLA faculty members set aside office hours for students and appreciate the opportunity for informal conversation. Professors are often aided by graduate student teaching assistants (TAs).

## Dynamic Student Body

Students at UCLA pride themselves on academic excellence. The fall quarter 2022 entering freshman class had an average high school GPA of 4.50.

One of the highest UCLA priorities is to advance the diversity of its students, faculty, staff, and administrators. The UCLA student population—nearly equally divided between men and women—yields the wide range of opinion and perspective essential to a great university.

Although most students are from California, they come from all 50 states and 134 foreign countries to study at UCLA. Ethnic minorities comprise 73.5 percent of the undergraduates and 70.8 percent of the graduate student population, and international students presently number almost 6,700, making this one of the most popular American universities for students from abroad.

## Retention and Graduation

Retention and graduation rates in undergraduate programs at UCLA are consistently among the highest in the nation. At least 96 percent of all students entering as freshmen and 95 percent of all students entering as transfers regularly return to enroll at UCLA for the second academic year and beyond.

For entering freshmen, 85.0 percent graduate within four years, and 92.5 percent within six years. The average time to degree is 12 or fewer quarters (i.e., four or fewer years). For entering transfer students, 73.6 percent graduate within two years and 94 percent of all entering transfer students eventually graduate from UCLA.

More information on campus statistics is available from [Academic Planning and Budget](#).

## Academic Programs

UCLA has a tradition of advancing higher education and the common good through excellence in scholarship, research, and public service. Academic excellence, faculty distinction, and a comprehensive curriculum are hallmarks of the UCLA experience. The College of Letters and Science and 12 graduate and professional schools present an extraordinary richness and diversity of teaching programs.

Academic programs offered at UCLA span the breadth and depth of over 200 disciplines and areas of study. Lecture, discussion, laboratory, research, and creative courses are supplemented by seminars, honors programs, specialized freshman clusters, internships, and education abroad opportunities. Instruction takes place in many unique venues, including specialized classrooms, computer and



scientific laboratories, performance and studio spaces, and off-campus settings. Students and faculty members themselves mirror the cultural and racial diversity of Los Angeles. Academic programs are described in detail in [Curricula and Courses](#).

The International Education Office, Summer Sessions, UCLA Extension, and UCLA International Institute offer academic and professional resources to UCLA and the greater Los Angeles community, as well as to the international community.

## Study Abroad

Study abroad and student exchange are exciting and broadening experiences that enrich any educational curriculum. The [International Education Office](#) (IEO) works to facilitate international education by serving as the campuswide portal for the development and administration of study abroad and student exchange activity. It supplies assistance to academic units seeking to develop study abroad programs, and it collaborates with the Academic Senate and departments to ensure academic oversight of study abroad programs. The IEO also coordinates student advising services for undergraduate and graduate students interested in studying abroad.

The IEO administers several programs, including the UC Education Abroad Program (UCEAP), Summer Travel Study, Non-UC Programs, and various student exchange agreements.

## Education Abroad Program

The UC [Education Abroad Program](#) (UCEAP) offers short- and long-term study programs in cooperation with over 115 host universities and colleges in more than 42 countries throughout the world. Participating students remain registered at their home campuses while studying abroad and receive full academic credit for their work. With careful planning, study abroad should not delay progress toward graduation. While on EAP, students are eligible for financial aid.

## Summer Travel Study

Summer Travel Study offers short-term summer programs on five continents. [Summer Travel Study](#) programs offer UC credit, the promise of an exciting summertime adventure, and intensive learning experiences taught by distinguished UCLA faculty members. Over 17 academic departments offer Summer Travel Study programs that include from 8 to 16 quarter units of UC credit. Financial aid is available for qualified UC students. Registration begins in November for the following summer on a first-come, first-served basis. Summer Travel Study is open to all students at any academic level. There is no grade-point average requirement to participate.

## Non-UC Programs

Students may also study abroad through other universities and programs not affiliated with UCLA. The IEO strongly recommends that all students considering [non-UC programs](#) contact the IEO early in the planning process about UCLA policies on planned academic leave (PAL), transfer credit, financial support, and more. UC financial aid is not available for study abroad on non-UC programs.

## Summer Sessions

UCLA offers various ways to earn UCLA credit during the summer—academic courses, summer institutes, travel study, and more. Hundreds of [courses](#) from over 70 departments are offered in three-, six-, eight-, nine-, and 10-week sessions. [Pre-college](#) and [college/professional](#) summer institutes offer innovative approaches to teaching and learning that combine UCLA coursework with practical training in real-world situations, preparing students for their future careers. Some programs, such as the [Summer College Immersion Program](#), are offered specifically for advanced high-school students, affording them an opportunity to experience the academic rigor of UCLA. [Summer Travel Study](#) allows students to learn various subjects as part of an exciting and challenging travel experience. All Summer Sessions [offerings](#) can be explored online.

Although visiting students are welcome to enroll, admission to summer sessions does not constitute admission to UCLA in either undergraduate or graduate standing. Students who wish to attend UCLA in regular academic terms must follow admission procedures described in [Undergraduate Study](#) and [Graduate Study](#).

Regularly enrolled UCLA undergraduate students may attend summer sessions for full unit and grade credit. Summer session coursework is recorded on the UCLA transcript, and grades earned are computed in the grade-point average. Students should check with a College or school counselor about applying these courses toward degree requirements, and about any limitations the College or school may impose on coursework completed in summer sessions. UCLA financial aid is available to qualified UCLA students.

Regularly enrolled UCLA graduate students may, with department approval, take courses offered in summer sessions for credit toward a master's or doctorate degree; consult a graduate adviser in advance about this possibility. Summer session courses may also satisfy the academic residence requirement for master's or doctorate degrees.

Unlike enrollment in regular terms, students may attend another college institution for credit while they are enrolled in summer sessions. Registration information is available from the [Summer Sessions](#) office.

## UCLA Extension

With over 84,000 adult student enrollments each year, **UCLA Extension** is one of the largest university continuing education programs in the world. It is designed to bring the benefits of UCLA—its scholars, research, and resources—to the community and the state as a whole.

Many of the 5,500 UCLA Extension classes are innovative and experimental in content, format, and teaching methods. Credit and noncredit courses are offered in nearly every academic discipline, in many interdisciplinary areas, and in emerging fields.

In addition, Extension offers special programs each term on topical issues as well as those of ongoing public concern. Many noncredit Extension courses offer the opportunity to earn Continuing Education Units (CEUs), widely used for relicensure and other professional/career-related purposes.

Although registering for Extension courses does not constitute admission to UCLA, degree credit earned through Extension may apply toward the UCLA bachelor's or master's degree; consult a College or school counselor or graduate adviser before enrolling. For more information, refer to **UCLA Extension** under Transfer Credit in Academic Policies.

## UCLA International Institute

The **UCLA International Institute** promotes interdisciplinary education and research on world regions and global issues. Its 27 interdisciplinary research centers and eight interdepartmental degree programs foster innovative research and offer educational opportunities on virtually every region of the world. The institute seeks to internationalize UCLA curricula and prepare students to be global citizens. Every fall, it leads a popular all-campus celebration of **International Education Week**.

The institute offers six undergraduate majors including **global studies**, **international and area studies**, and **international development studies**; 10 undergraduate **minors**, including **global health** and **international migration studies**; and three **master's degree programs** in African Studies, East Asian Studies, and Latin American Studies. These academic programs annually enroll nearly 1,000 students. Together with its centers, the institute serves the entire campus through a wide range of academic events, scholarships, and grants. It acts as a gateway to the world for UCLA and the global city of Los Angeles, hosting free public events, research conferences, cultural programs, and K-12 outreach. The institute also brings together faculty from the College, professional schools, and research centers across the UCLA campus for collaborative global and regional research initiatives.

In addition to its 21 area-based research centers—including its newest members, the **Promise Armenian Institute** and **Armenian Studies Center**—the institute also houses the **Burkle Center for International Relations**, **Center for the Study of International Migration**, **Center for World Languages**, **Center for Buddhist Studies**, **Fulbright Enrichment Program**, and **International Visitors Bureau**, among other units. The U.S. Department of Education (DoEd) has designated the centers focused on **Latin America**, **Near East**, and **Southeast Asia** as National Resource Centers. The **National Heritage Language Resource Center** is the nation's first specialized center for heritage language teaching; and the **Asian Pacific Center** and the **Center for European and Russian Studies** have received DoEd funding for foreign language and area studies fellowships.

## Research Programs

At any given time, more than 6,000 funded research programs are in progress at UCLA. Interdisciplinary Organized Research Units, research centers, institutes, and laboratories focus on key research in a specific area.

## Organized Research Units

**Organized Research Units** (ORUs) are campuswide research programs. Members come from more than one department and usually from more than one school, college, or division.

### American Indian Studies Center

The **American Indian Studies Center** (AISC) serves as an educational and research catalyst. It includes a library, postdoctoral fellowship programs, a publishing unit that produces books and a quarterly journal, and a student/community relations unit. AISC is one of four ORUs overseen by the **Institute of American Cultures** (IAC).

### Asian American Studies Center

The **Asian American Studies Center** (AASC) seeks to increase knowledge and understanding of the experiences of Asian and Pacific Islander peoples in America, and promotes the development of material resources related to Asian American studies. The center includes a library, publications unit, student/community projects unit, and postdoctoral fellowship programs. AASC is one of four ORUs overseen by the **Institute of American Cultures** (IAC).

### Brain Research Institute

The **Brain Research Institute** (BRI) has one of the largest programs for neuroscience research and education in the country, with approximately 300 scientists from nearly 30 departments involved in every aspect of neuroscience

research from molecular organization to human behavior. The BRI offers facilities with new technologies for research and training; and sponsors affinity groups, conferences, and symposia to strengthen ties among neuroscientists. Public service activities include an elementary-and-secondary-school outreach program and a joint educational program with UCLA Extension.

## Center for European and Russian Studies

The **Center for European and Russian Studies** (CERS) develops and coordinates teaching and research on Russia and the successor states of the former Soviet Union—and western European countries—through conferences, lectures, seminars, and academic exchange programs with European and Russian institutions. It also funds advanced instruction in languages such as Czech, Hungarian, Romanian, Polish, and Serbian/Croatian, and offers fellowships to graduate students in European area studies.

## Center for Medieval and Renaissance Studies

The **Center for Medieval and Renaissance Studies** (CMRS) supports the research activities of some 125 faculty members in 24 academic disciplines dealing with the development of civilization between AD 300 and 1650. Programs include appointing visiting professors, organizing conferences, and supporting departments in inviting lecturers. The center sponsors two journals: *Viator*, with emphasis on intercultural and interdisciplinary studies; and *Comitatus*, with articles by graduate students and recent PhD graduates.

## Center for Seventeenth- and Eighteenth-Century Studies

The **Center for Seventeenth- and Eighteenth-Century Studies** organizes scholarly programs and workshops, publishes conference results, provides long- and short-term fellowships to students and scholars, offers graduate research assistantships and master classes, and organizes public programs and classical music concerts.

The center administers the **William Andrews Clark Memorial Library**, located in the West Adams neighborhood of Los Angeles, that specializes in seventeenth- and eighteenth-century British works. The library also has a renowned collection centering on Oscar Wilde and his era, and significant holdings of modern fine printing and Western Americana.

## Center for the Study of Women

The **Center for the Study of Women** (CSW) draws on the expertise of more than 200 faculty members from 10 professional schools and 34 departments. To facilitate faculty research, the center organizes conferences and lecture series on feminist theory, administers research grants, and offers an affiliation for research and visiting scholars. The center sponsors working groups; produces calendar-of-events posters; and hosts graduate programs and an annual graduate student research conference.

## Chicano Studies Research Center

The **Chicano Studies Research Center** (CSRC) promotes the study and dissemination of knowledge about the experience of people of Mexican descent and other Latinos in the U.S. The center supports interdisciplinary and collaborative research and the analysis, understanding, and articulation of issues critical to the development of Chicano and Latino communities in the U.S. It seeks to establish and maintain relationships with communities with similar academic and research interests at the state, national, and international levels. The center also includes a library, academic press, and grant fellowship programs. CSRC is one of four ORUs overseen by the **Institute of American Cultures** (IAC).

## Cotsen Institute of Archaeology

The **Cotsen Institute of Archaeology** (CloA) studies and seeks to understand the human past through artifacts, analysis of field data, and the creation of archives. The institute—the only one of its kind in the U.S.—coordinates facilities for more than 30 researchers, and many graduate students and volunteers, in 11 associated academic departments. Facilities include the Ceramics Research Group collections, Cotsen Digital Archive, Lithic Analysis Research Group collections, Moche Archive, Rock Art Archive, and many laboratories such as the Channel Islands Laboratory, East Asian Laboratory, Human Origins Laboratory, and Zooarchaeology Laboratory. It publishes the findings of scholars from UCLA and other archaeology centers and supplies a forum for the public presentation of archaeological discoveries and advances.

## Crump Institute for Molecular Imaging

The **Crump Institute for Molecular Imaging** (CIMI) brings together physical, biomathematical, chemical, biological, and clinical scientists and students to merge the principles of imaging with those of molecular and cellular biology, genetics, and biochemistry. The imaging domains range from the molecular organization of viruses and cellular subunits to the biological processes of organ systems in the living human. A major focus is the development and use of imaging technologies to collect, analyze, and communicate

biological data. The institute has research and educational programs for visiting scientists, postdoctoral scholars, and PhD graduate students that include the development of multimedia computer-based learning technologies.

## Gustave E. von Grunebaum Center for Near Eastern Studies

The [von Grunebaum Center for Near Eastern Studies](#) (CNES) coordinates research and academic programs related to the Near East. It supports the degree program in African and Middle Eastern Studies. Center resources include the largest faculty, one of the most comprehensive library holdings, and the richest variety of Near and Middle Eastern studies courses of any institution in the Western Hemisphere. The center conducts publication, community outreach, and scholarly exchange programs.

## Institute for Research on Labor and Employment

The interdisciplinary research program of the [Institute for Research on Labor and Employment](#) (IRLE) studies employment relationships including labor markets, labor law, labor and management relations, equal employment opportunity, occupational safety and health, and related issues. Its [UCLA Labor Center](#) offers social policy and employment relations programs to the public, unions, and management. The academic unit of the institute oversees the Labor Studies major and minor.

## Institute of Geophysics and Planetary Physics

The [Institute of Geophysics and Planetary Physics](#) (IGPP) is a multicampus research unit of the University of California; the branch at UCLA researches climate dynamics, geophysics, geochemistry, space physics, biochemistry, and biology. Research topics include the nature of the Earth, moon, and other planetary bodies; global and regional environmental change; the origin of terrestrial life; dynamical properties of the sun and solar wind; and the nonlinear dynamics of complex systems. Facilities include analytical laboratories in geochemistry, meteoritics, glaciology, petrology, geochronology, archaeology, and the origins of life; laboratories for experiments in fluid dynamics and high-pressure physics; developmental laboratories for instrumentation in space physics and seismology; and computational laboratories for large-scale numerical modeling.

## Intellectual and Developmental Disabilities Research Center

The [Intellectual and Developmental Disabilities Research Center](#) (IDDRC) supplies laboratories and clinical facilities for research and training in intellectual and developmental disabilities. Interdisciplinary activities range from anthropological studies to molecular aspects of inherited metabolic diseases.

## James S. Coleman African Studies Center

The [Coleman African Studies Center](#) (ASC) coordinates research on and teaching about Africa in the humanities, social sciences, and natural sciences, as well as in the schools of Arts and Architecture; Education and Information Studies; Law; Medicine; Public Affairs; Public Health; and Theater, Film, and Television. The center sponsors public lectures, seminars, publications, and academic exchanges with African institutions, and an outreach service to the Southern California community.

## Jules Stein Eye Institute

The [Stein Eye Institute](#) is one of the best-equipped centers for research and treatment of eye diseases in the world. This comprehensive facility is dedicated to the preservation of vision and prevention of blindness, the care of patients with eye disease, and education in the broad field of ophthalmology. Outpatient, inpatient, and surgical treatments are available.

The [Doris Stein Eye Research Center](#) houses clinical facilities as well as new research and training programs concentrating on major eye diseases worldwide.

The [Edie and Lew Wasserman Eye Research Center](#) houses outpatient surgery clinics; faculty offices; and refractive, oculoplastic, and cataract services.

## Latin American Institute

The [Latin American Institute](#) (LAI) is a major regional, national, and international resource on Latin America and hemispheric issues. The institute sponsors and coordinates research, academic and public programs, and publications on Latin America in the humanities, social sciences, and professional schools; and links its programs and activities with developments in the field and in other institutional settings. By combining instruction, research, and service—and by encouraging multidisciplinary and interdisciplinary approaches—the institute promotes the use of UCLA Latin American resources for the benefit of the campus, the broader community, and the public at large.



## Molecular Biology Institute

The **Molecular Biology Institute** (MBI) promotes molecular biology research and teaching at UCLA, with emphasis on genomics, proteomics, and chemical biology. The institute houses the laboratories of 200 faculty members from 30 UCLA departments and the Institute for Genomics and Proteomics, as well as the administration of the Molecular Biology Interdepartmental PhD Program and the Graduate Programs in Bioscience consortium.

## Plasma Science and Technology Institute

The **Plasma Science and Technology Institute** (PSTI) is dedicated to research of plasma physics, fusion energy, and the application of plasmas in other disciplines. Students, professional research staff, and faculty members study basic laboratory plasmas, plasma-fusion confinement experiments, fusion engineering and nuclear technology, computer simulations and the theory of plasmas, space plasma physics and experimental simulation of space plasma phenomena, advanced plasma diagnostic development, and laser-plasma interactions. They also study the use of plasma in applications ranging from particle accelerators to the processing of materials and surfaces used in microelectronics or coatings.

## Ralph J. Bunche Center for African American Studies

The **Bunche Center for African American Studies** (CAAS) conducts and sponsors research on the African American experience, supports the African American studies curriculum, publishes research results, and sponsors community service programming. CAAS is one of four ORUs overseen by the **Institute of American Cultures** (IAC).

## UCLA-DOE Institute for Genomics and Proteomics

The **UCLA-DOE Institute for Genomics and Proteomics**, funded through a Department of Energy (DOE) contract, conducts research in bioenergy, carbon capture, microbial genomics, and structural and functional studies of organisms and their constituents. Institute faculty members have joint appointments in academic departments and teach at both undergraduate and graduate levels. Major facilities include a biomedical cyclotron; advanced scanning equipment; and macromolecular crystallization, nuclear magnetic resonance, protein expression, and X-ray crystallography facilities.

## Specialized Research Centers, Institutes, and Laboratories

Additional **research centers, institutes, and laboratories** advance scholarship in all fields. The breadth of research conducted on campus is reflected in diverse undertakings from behavior to computing, demography to disease, and language to politics. This sampling of current research entities offers a view into the scope of research units.

### Social Sciences

**California Center for Population Research**

**Center for Language, Interaction, and Culture**

**National Center for Research on Evaluation, Standards, and Student Testing**

**UCLA Anderson Forecast**

### Health Sciences

**Center for HIV Identification, Prevention and Treatment Services**

**Fernald Child Study Center**

**Jonsson Comprehensive Cancer Center**

**Mary S. Easton Center for Alzheimer's Disease Research**

### Engineering and Physical Sciences

**Center for Autonomous Intelligent Networks and Systems**

**Center for Energy Science and Technology Advanced Research**

**Institute for Pure and Applied Mathematics**

**UCLA Logic Center**

## Galleries and Museums

Museums, galleries, and gardens offer eclectic resources ranging from the ancient to the avant-garde, helping to make UCLA the leading arts and cultural center in the West.

### Fowler Museum at UCLA

The **Fowler Museum** at UCLA is internationally known for the quality of its collections. They encompass the arts and material culture of much of the world, with particular emphasis on West and Central Africa; Asia and the Pacific; and the Americas, past and present. It supports UCLA instruction and research and sponsors major exhibitions, lecture programs, and symposia. The museum is open to the public Wednesday through Sunday.

## Grunwald Center for the Graphic Arts

Housed in the UCLA Hammer Museum, the [Grunwald Center for the Graphic Arts](#) holds a distinguished collection of over 45,000 prints, drawings, photographs, and artists' books, including nearly 10,000 works from the prestigious Armand Hammer Daumier and Contemporaries Collection. A study and research facility for the benefit of students and the community, the center's permanent holdings include significant European and American examples from the fifteenth century to the present. It is particularly noted for its collection of German Expressionist prints and works on paper by Matisse and Picasso, as well as the Richard Vogler Cruikshank Collection and the Frank Lloyd Wright Collection of Japanese prints. The center is open only by appointment.

## Franklin D. Murphy Sculpture Garden

Situated on a picturesque five-acre expanse that spans the heart of north campus, the [Murphy Sculpture Garden](#) contains a collection of over 70 major works by Arp, Butterfield, Calder, Falkenstein, Hepworth, Lachaise, Lipchitz, Matisse, Moore, Noguchi, Rodin, Smith, Zuniga, and many other late nineteenth- and early twentieth-century masters. All works in this distinguished collection are private gifts to UCLA. Tours may be arranged.

## Meteorite Collection and Gallery

UCLA has the largest collection of meteorites on the West Coast and the fifth largest in the U.S. Many of the most important meteorites are displayed in the [Meteorite Gallery](#) located in 3697 Geology. The collection and gallery are a major resource for cosmochemical research and the teaching of planetary science.

## New Wight Gallery

The [New Wight Gallery](#) is an exhibit space for visual arts, including student and faculty exhibitions, housed in 1100 Broad Art Center.

## UCLA Hammer Museum

The [Hammer Museum](#) regularly presents its collection of impressionist and post-impressionist paintings by such artists as Cassatt, Monet, Pissarro, Sargent, and Van Gogh. The museum organizes and presents major changing exhibitions devoted to examinations of historical and contemporary art in all periods. Cultural programming—including children's performance and storytelling series, music, poetry read-

ings, and lunchtime art talks—are presented throughout the week.

## Libraries

The [UCLA Library](#), a campuswide network of libraries serving programs of study and research in many fields, is among the top 10 academic research libraries in North America. The total collections number more than 12 million volumes, 100,000 current serial titles, 950,000 e-books, and 700 subscription databases.

Reference librarians are available in all library units to answer questions about using online systems and to provide assistance with reference and research topics.

Students find materials through web-based library information systems. The UC Library Search connects all 10 UC campus libraries through a unified discovery and borrowing system. It contains records for all its holdings and other campus collections, including UCLA resources such as the Archive Research and Study Center of the Film and Television Archive, Chicano Studies Research Center Library, Ethnomusicology Archive, Social Science Data Archive, Instructional Media Collections and Services, and William Andrews Clark Memorial Library. The search system also includes library item location and circulation status.

Other available resources include WorldCat, Center for Research Libraries, and Online Archive of California catalogs; numerous abstracting and indexing databases; and gateways to other systems.

While continuing to develop and manage collections of traditional printed materials, the UCLA Library also makes a number of digital resources available for campus use through the library site. These include electronic reserves and electronic journals, texts, reference resources, periodical indexes, and abstracts.

## Arts Library

Housed in 1400 Public Affairs Building, the [Arts Library](#) has more than 300,000 books on architecture, architectural history, art, art history, design, fashion and costume, film, television, photography as fine art, studio art, theater, urban design, and allied disciplines. It also contains the [Elmer Belt Library of Vinciana](#), a special collection of rare books and incunabula about Leonardo da Vinci and related materials in Renaissance studies. Performing Arts Special Collections, housed in the Young Research Library, contain noncirculating materials including the Artists' File; archival records of major Southern California motion picture studios and television production companies; scripts from film, television, and radio; animation art; personal papers of writers, directors, and producers; photographs and production

stills; and posters, lobby cards, press kits, and West Coast theater playbills.

## Charles E. Young Research Library

The **Young Research Library** (YRL) primarily serves graduate research in the humanities, social sciences, education, public affairs, government information, and maps. Most of its collections are arranged in open stacks. The building also houses reference, circulation, graduate reserve, and periodicals services and the Microform and Media Service, with microcopies of newspapers, periodicals, and other materials. UCLA Library Special Collections contains rare books and pamphlets, primarily in the humanities, social sciences, and visual arts, from the fifteenth to twentieth century; University Archives; early maps and atlases; early California newspapers; manuscript collections; transcripts of oral history; ephemera; microfilm; tape recordings; prints; paintings; and drawings, including original architectural drawings.

## Eugene and Maxine Rosenfeld Management Library

Located in the Anderson Graduate School of Management complex, the **Rosenfeld Management Library** houses materials on accounting information systems, arts management, business history, corporate history, entrepreneurship, finance, general management and management theory, industrial relations, international and comparative management, management information systems, management strategy and policy, marketing, operations, research, production and operations management, public/not-for-profit management, and real estate.

## Hugh and Hazel Darling Law Library

The **Darling Law Library** collects published case decisions, statutes, and codes of the federal and state governments of the U.S. and other common law jurisdictions, legal treatises and periodicals in Anglo-American and international law, and appropriate international and comparative law holdings. The Law Library reports to the dean of the School of Law. It contains over 600,000 print volumes and over 35,000 electronic titles.

## Louise M. Darling Biomedical Library

The **Darling Biomedical Library**, located in the Center for Health Sciences, serves all the UCLA health and sciences

departments and schools and the Ronald Reagan UCLA Medical Center. Its collections focus on materials related to medicine, nursing, dentistry, public health, physiological sciences, biology, molecular biology, chemistry, biochemistry, zoology, plant sciences, psychology, and life sciences, as well as rare works in the history of health and life sciences, botanical illustration, and Arabic and Persian medical manuscripts. It contains over 683,778 print volumes and thousands of journal subscriptions.

## Music Library

The collections of the **Music Library** in the Schoenberg Music Building include books, music scores, sheet music, video and sound recordings, microforms, and interactive media on Western music history and criticism; world music styles, cultures, and traditions; and music theory, aesthetics, philosophy, and organology. Performing Arts Special Collections, housed in the Young Research Library, include rare printed and manuscript books, scores, and opera librettos; personal papers of prominent Southern California composers, performers, and writers on music; and archives of film, television, and radio music.

## Powell Library

**Powell Library** features collections and services in support of the undergraduate curriculum in the College of Letters and Science (humanities and social, life, and physical sciences). Course reserve materials—including books, articles, audiotapes, homework solutions, lecture notes, and Academic Publishing Service Readers—are available for loan. The **Campus Library Instructional Computing Commons** (CLICC), located on the first floor of Powell Library, gives students access to computers and multimedia equipment; and Night Powell offers study space in a late-night reading room. There are Inquiry Laboratories with research assistance and Undergraduate Writing Center services.

## Richard C. Rudolph East Asian Library

Located in the Young Research Library, the **Rudolph East Asian Library** collects Chinese, Japanese, and Korean language materials in the humanities and social sciences. The collection is particularly strong in Japanese Buddhism, religion, Chinese and Japanese fine arts, Chinese archaeology, premodern history and classical literature on both China and Japan, and Korean literature and religion.

## Science and Engineering Library

The **Science and Engineering Library** (SEL) collections on engineering, mathematics, and the physical sciences are

housed in two separate locations. SEL/Boelter in Boelter Hall houses materials on aeronautics, astronomy, and atmospheric sciences; bioengineering; chemical, civil, electrical, environmental, manufacturing, mechanical, and nuclear engineering; computer science and electronics; energy technology; mathematics; metals and materials; pollution; and statistics. SEL/Geology in the Geology Building houses materials on geology, geophysics, geochemistry, space physics, planetary science, regional geology, paleobiology, micropaleontology, invertebrate paleontology, ore deposits, geomorphology, hydrology, chemical oceanography, and all U.S. Geological Survey publications of western U.S. state geological surveys.

## Special Archives and Collections

In addition to the extensive collections of the UCLA Library, a rich array of other information resources is independently managed by individual UCLA departments and centers.

### Cultural Center Collections

The **Bunche Center for African American Studies Library and Media Center** contains materials reflecting the African American experience in the social sciences, arts, and humanities. The **American Indian Studies Center Library** houses a collection on American Indian life, culture, and state of affairs in historical and contemporary perspectives. The **Asian American Studies Center Library/Reading Room** features Asian American and Pacific Islander resources. Materials related to Chicano and Latino cultures are housed in the **Chicano Studies Research Center Library**. The **William Andrews Clark Memorial Library** contains rare books, manuscripts, and other noncirculating materials on English culture (1641 to 1800). The **English Reading Room** features a noncirculating collection of British and American literature, literary history, and criticism.

### Film and Television Archive

The **Film and Television Archive** is the world's largest university-based collection of motion pictures and broadcast programming. The archive holdings of over 350,000 motion pictures, 160,000 television programs, and 27 million feet of newsreel footage serve the UCLA community and national and international constituencies.

The **Motion Picture Collection** is the country's largest collection after the Library of Congress. Among its outstanding collections are 27 million feet of Hearst Metrotone News film dating back to 1919. Other noteworthy holdings include studio print libraries from Twentieth-Century Fox, Para-

mount Pictures, Warner Brothers, Sony/Columbia Pictures, Republic Pictures, RKO, New World Pictures, and Orion Pictures. Special collections document the careers of William Wyler, Hal Ashby, Tony Curtis, Rosalind Russell, Stanley Kramer, Cecil B. DeMille, Harold Lloyd, Charlton Heston, Rock Hudson, and other persons of prominence in the American film industry.

The **Television Collection** is the nation's largest university-based collection of television broadcast materials. Its titles include kinescopes, telefilms, and videotapes spanning television history from 1946 to the present, with emphasis on drama, comedy, and variety programming. A special collection of over 100,000 news and public affairs programs is also maintained.

The archive exhibition program presents evening screenings and discussions that focus on archival materials, new work by independent filmmakers, and international films.

The **Archive Research and Study Center (ARSC)** in Powell Library offers on-site viewing of the Film and Television Archive collections, and research consultation to students, faculty, and researchers.

### Instructional Media

**Instructional Media Collections and Services**, located in Powell Library, is the central UCLA resource for collection and maintenance of educational and instructional media. Materials from the collection are loaned to regularly scheduled UCLA classes and may be rented by organizations and individuals from the campus community and beyond. Staff members monitor compliance with UCLA and UC guidelines and federal copyright law governing the use of video recordings. Reference books from educational and feature-film distributors are available. Staff members assist in researching media on any subject and obtaining materials from outside sources.

The **Instructional Media Laboratory** offers access to course- or textbook-related audio, interactive, and video programs. Students, assigned by faculty members to study specific supplementary materials, may learn at their own pace and time.

### Other Collections

The **Ethnomusicology Archive** houses over 150,000 sound and audiovisual recordings of folk, ethnic, and non-Western classical music. The **Social Science Data Archive** contains a collection of statistical databases for the social sciences. The UCLA Lab School **Gonda Family Library** features contemporary materials for children from kindergarten through junior high school and adult works on children's literature.



## Parks, Reserves, and Natural Science Resources

The geography of Southern California is conducive to research in the natural sciences. This diverse region is a natural laboratory supported by numerous UCLA resources for study.

### Biological Collections

The [Biological Collections](#) of the Ecology and Evolutionary Biology Department include marine fishes from the Eastern Pacific and Gulf of California; and birds and mammals primarily from the Western U.S., Canada, Mexico, and Central America. The department also maintains a more limited collection of amphibians, reptiles, and fossil vertebrates.

### Division of Laboratory Animal Medicine

The [Division of Laboratory Animal Medicine](#) is responsible for the procurement, husbandry, and general welfare of animals required for teaching and investigative services. It also administers the campus veterinary medical and husbandry programs.

### Mildred E. Mathias Botanical Garden

The [Mathias Botanical Garden](#) is a living museum with one of the most important botanical collections in the U.S. With specimens from all over the world, the seven-acre expanse on south campus is home to over 3,000 types of plants in a wide range of environments. The botanical garden also has a research herbarium containing 180,000 dried plant specimens. School and community group tours are available, as are individual guided tours.

### Stunt Ranch Santa Monica Mountains Reserve

The University of California founded the UC Natural Reserve System (NRS) in 1965 to preserve undisturbed natural areas representing the state's vast ecological diversity for students, teachers, and researchers from public and private educational institutions to use as outdoor classrooms and living laboratories. The [Stunt Ranch Santa Monica Mountains Reserve](#), administered by the Los Angeles campus, officially joined the UC NRS in November 1995. The 310-acre site is a 40-minute drive from UCLA and includes fine examples of chaparral and oak woodland ecosystems. The reserve lends

itself to programs that focus on the natural ecosystems and issues of resource management in the urban/wildland interface. Undergraduate and graduate courses in the departments of Anthropology; Earth, Planetary, and Space Sciences; Ecology and Evolutionary Biology; Geography; Physics and Astronomy; and the Institute of the Environment and Sustainability utilize Stunt Ranch and other NRS sites.

### UCLA Health System

Consisting of [Ronald Reagan UCLA Medical Center](#); [UCLA Medical Center, Santa Monica](#); [Resnick Neuropsychiatric Hospital at UCLA](#); [UCLA Mattel Children's Hospital](#); and the UCLA Medical Group, with wide-reaching primary- and specialty-care offices, [UCLA Health](#) is among the most comprehensive and advanced health care systems in the world, and is consistently ranked among the top hospitals in the nation and the West.

From its level-one trauma center and intensive-care units to The BirthPlace Westwood, the Ronald Reagan UCLA Medical Center on campus is equipped with the latest medical advances to provide world-class patient care. The UCLA Medical Center, Santa Monica is home to the [UCLA Rape Treatment Center](#), which serves as a national model for the treatment of rape victims and their families.

### Student Services

Like a small city, UCLA has its own police department and fire marshal, an equivalent to the phone company, health center, corner restaurants, and shops. Hundreds of services for the campus community facilitate academic and personal endeavors.

### Study Services

From academic advising to advanced computer support, UCLA study services give students the tools they need to achieve academic success.

### Academic Counseling

Many sources of academic counseling are available. Faculty advisers and counselors in the College and each school help students with major selection, program planning, academic difficulties, degree requirements, and petitions.

Advisers in each department counsel undergraduates concerning majors offered and their requirements, and possible career and graduate school options (see [College and Schools](#) and [Curricula and Courses](#)). In addition, graduate advisers are available in each department to assist prospective and currently enrolled graduate students.

## Computer Laboratories

Student computer laboratories are supported through the [Campus Library Instructional Computing Commons](#) (CLICC), a collaborative effort of the [Humanities Technology](#), [Social Sciences Computing](#), [Center for the Advancement of Teaching](#), and Powell Library. Some 15 computer laboratories are available throughout the campus, each with computers, peripherals, software, and services that cater to specific areas of study. See the departments listed above or Information Technology Services [IT resources](#) for more information.

## Course Readers

ASUCLA [Course Reader Solutions](#) supplies custom course readers for faculty in both print and e-book formats, obtaining copyright authorizations each year. The office is located in the Textbooks department on the A level of Ackerman Union.

## Course Websites

The [Instructional Enhancement Initiative](#) (IEI) assures that all UCLA undergraduate nontutorial courses offer an individual course website for faculty members, teaching assistants, and enrolled students. The sites facilitate the distribution of supplementary course materials, lecture notes, homework assignments, research links, and electronic communication, including virtual office hours and class bulletin boards for interactive question-and-answer sessions. Instructors decide which of these online capabilities are best suited to their course websites. Many course websites are available through [Bruin Learn](#).

## Disabilities and Computing Program

The [Disabilities and Computing Program](#) (DCP) supplies adaptive technology and information-access support and services to students, faculty, and staff with disabilities. Applications include voice input, Braille, large print, screen-reading software, and learning disability software. Consulting and training for individuals and departments are available. The program also offers Web accessibility evaluations and guidelines.

## Internet

[UCLA IT Services](#) is the campus Internet service provider for UCLA students, faculty, and staff; and a vehicle for accessing campus network communication services. Bruin OnLine services include access to the campus backbone network and the Internet, e-mail accounts, Google Apps for UCLA, Box, and personal web hosting. Limited wireless Internet access is available on campus to anyone with a wireless

enabled laptop or mobile device. Utility software can be downloaded from the IT Support Services website. Help desk services are available.

## MyUCLA

[MyUCLA](#) is the easiest way for students to gain real-time access to their academic, financial, and personal records. The site is designed with an intuitive visual interface to walk students through procedural steps. MyUCLA offers a large number of services.

Students use the Class Planner to create plans prior to enrollment and are able to share these plans with counselors. MyUCLA also allows students to check enrollment appointments; view real-time enrollment counts; find classes and enroll; exchange or drop classes; change units and grade type; and view their study list, which includes information on class meeting times, final examinations, classmates, gradebook, textbooks, and class websites.

MyUCLA is used to declare candidacy and nonattendance, view Degree Audits, order transcripts and diplomas, change address information, view term grades and calculate grade-point average, find information on holds, order commencement tickets, access BruinBill and tax information, view financial aid awards and notices, and access UCLA Google e-mail accounts. The MyUCLA Message Center contains a database of answers and allows students to correspond with campus departments. MyUCLA also links to important communications regarding registration and UCLA policies.

Other features include notifications; voting in student association elections; personal calendar and event reservations; and links to UCLA online resources.

Students can access MyUCLA from Sunday noon through Tuesday 1 a.m., and Tuesday through Saturday from 6 a.m. to 1 a.m. the next day, including holidays. [MyUCLA Features](#) contains a full list of features.

## Health and Safety Services

Students physical and mental health are priorities at UCLA. Multiple services, from clinics to specialists and medical retail, are available. Student safety services include prevention, emergency and safety systems, and the campus police department.

## Arthur Ashe Student Health and Wellness Center

The [Ashe Student Health and Wellness Center](#) in Westwood Plaza is a full-service medical clinic available to all registered UCLA students. Most services are subsidized by registration fees, and a current BruinCard is required for

service. Its clinical staff of physicians, nurse practitioners, and nurses is board certified. It offers primary care, specialty clinics, and physical therapy. The center has its own laboratory and radiology sections. It operates the Bruin Health Pharmacy and U See LA Optometry in nearby Ackerman Union. Visits, core laboratory tests, X-rays, and preventive immunizations are all prepaid for students with the University of California Student Health Insurance Plan (UCSHIP).

The cost of services received outside the Ashe Center, such as emergency room services, is each student’s financial responsibility. Students are required to purchase medical insurance either through the UCLA-sponsored UCSHIP or other plans that provide adequate coverage. Adequate medical insurance is a condition of registration. See Student Health Insurance Fee under Registration in [Undergraduate Study](#) and [Graduate Study](#).

Contact the Ashe Center for specific information on its primary care, women’s health, immunization, health clearance, optometry, travel medicine, and mind-body clinics, as well as dental care available to students at discounted rates. For emergency care when the Ashe Center is closed, students may obtain treatment at the Ronald Reagan UCLA Medical Center emergency room on a fee-for-service basis.

## Mental Health Services

Services for mental health range from routine counseling and psychotherapy to crisis counseling.

## Counseling and Psychological Services

[Counseling and Psychological Services](#) (CAPS) offers short-term personal counseling and psychotherapy in 221 Wooden Center West, 310-825-0768.

Psychologists, clinical social workers, and psychiatrists assist with situational stresses and emotional problems from the most mild to severe. These may include problems with interpersonal relationships, academic stress, loneliness, difficult decisions, sexual issues, anxiety, depression, or other concerns affecting the personal growth of students.

In addition, [Campus Assault Resources and Education](#) (CARE) counselors—individuals who provide information, support, and resources for members of the UCLA community who have been raped, sexually assaulted, stalked, or involved in a dating or domestic violence incident—can discuss options and alternatives, help identify and assist in contacting the most appropriate support services, and answer any questions that may arise.

Service is confidential and available to regularly enrolled students. Students are seen individually by appointment or

may choose from a number of groups offered each term. Emergency and walk-in counseling is also available.

## Student Safety and Security

For police, fire, or medical emergencies, call 911 from any campus phone. For nonemergency information, call [UCLA Police](#) at 310-825-1491.

UCLA EMERGENCY NUMBERS	
<b>Police, Fire, or Medical Emergency</b>	<b>911</b>
<b>UCLA Medical Center Emergency Room (24 hours)</b>	<b>310-825-2111</b>
<b>UCLA Counseling and Psychological Services (24 hours)</b>	<b>310-825-0768</b>
<b>UCLA Police (24 hours)</b>	<b>310-825-1491</b>

UCLA [Campus Assault Resources and Education](#) (CARE) Prevention and Education Services—including workshops, self-defense classes, counseling, and referrals—increase physical and psychological preparedness and heighten awareness of the complex issues of rape, sexual assault, and relationship violence.

UCLA [Consultation and Response Team](#) (CRT) is a group of professional staff members charged with responding to reports of students in distress, with representatives from the College, Dean of Students, Counseling and Psychological Services, Residential Life, and UCLA Police.

The Center for Prehospital Care offers [cardiopulmonary resuscitation](#) (CPR) and basic emergency care courses, which can be organized most days and times.

The [Office of Environment, Health, and Safety](#) (EH&S) works to reduce workplace hazards on campus and to promote safety at all levels of the UCLA community. EH&S is a consulting resource for UCLA departments and personnel who want to learn how to make the workplace safe. It handles requests for safety information and training, regulatory interpretation and applicability, approval for potentially hazardous procedures, resolution of safety problems, and surveillance and monitoring of persons and workplaces.

## UCLA Police Department

The UCLA [Police Department](#) (UCPD), 310-825-1491, is located at 601 Westwood Plaza. The sworn UCPD officers are empowered by the state of California with the authority to enforce all state and local laws. UCPD officers patrol the campus 24 hours a day, 365 days a year. They enforce all applicable local, state, and federal laws; arrest violators;

investigate and suppress crime; and provide a full range of police services and community safety programs.

The department is linked by computer to city, state, and federal criminal justice agencies that provide access to information concerning criminal records, wanted persons, stolen property, and vehicle identification. The detective unit handles criminal investigations, and detectives conduct interviews, arrest violators, execute search warrants, and file cases with the Los Angeles District and City Attorney offices.

UCPD police officers have primary jurisdiction over the UCLA campus, Reagan UCLA Medical Center, Center for the Health Sciences, Santa Monica-UCLA Medical Center, and University Apartments South. The city of Los Angeles Police Department does not routinely handle calls for service on campus or on most UCLA properties.

### Incident Reporting

All requests for police service should be made to UCPD. All crime occurring on campus, the Center for the Health Sciences, and other UCLA properties should be reported immediately to UCPD to ensure appropriate action is taken. Crimes occurring off campus should be reported immediately to the local law enforcement agency. UCPD does take reports from students, faculty, and staff for incidents occurring in the Westwood area.

Police, fire, or medical emergencies can be reported by calling **911** from any telephone on campus. All landline telephones (UCLA, private, public) located on UCLA grounds are tied into the 911 emergency system. Emergencies can also be reported by using the blue-hooded or yellow Emergency Reporting Telephones located throughout the campus.

Calls made to 911 from a cell phone may not go directly to UCPD depending on the tower used by the cell phone at the time of the call. Callers should advise the dispatcher and ask if they are speaking with UCPD. If not, and time permits, callers may ask to be transferred to UCPD 911.

Nonemergency calls for service can be made by contacting the department at 310-825-1491. Campus community members are encouraged to program the department number into their cell phones and report on suspicious circumstances.

### Crime Statistics and Reports

As required by the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act and consistent with the amendments of the Violence against Women Reauthorization Act of 2014, UCLA prepares an **annual report** describing campus security policy and information concerning alcohol and drug use, crime prevention, crime reporting, and related matters. It also includes three years of crime statistics. For a printed copy, call 310-825-1491.

### Community Service Officers

UCPD employs approximately 50 student **community service officers** (CSO) who are the additional eyes and ears (trained observers) of the department and act as noninterfering visual deterrents to crime. CSOs wear high-visibility uniforms and carry two-way police radios. They are dispatched by the department communications center and provide a direct link to police, fire, and medical aid. CSOs provide security service to a number of campus buildings, including residence halls and libraries. They are most well-known for CSO escorts. **CSO escorts** operate every day of the year from dusk to 1 a.m. (2 a.m. on Thursdays during academic quarters). Individuals requesting the service call the Communications Center at 310-794-WALK; a CSO is then dispatched to walk them safely to their destination. The service is available to UCLA students, staff, faculty, and visitors; and operates on campus and in the nearby residential areas.

The free **UCLA SafeRide** service, operated by UCLA Transportation, offers a safe, accessible, and convenient mode of transportation around campus at night (Monday through Thursday from 7 p.m. to 10:30 p.m. during academic terms). Rides can be requested through the UCLA SafeRide web application, available on Google Play and the Apple App Store; a UCLA login is required to access the app.

### Crime Prevention

An involved community is one of the best defenses against crime. Therefore, the department is committed to a community policing philosophy and supports a proactive **Crime Prevention Unit** that works closely with community members to make UCLA a safer place to work, live, and learn. The unit gives presentations on vehicle and residential security, personal safety, office and equipment security, sexual assault prevention, and active shooter situations. Other programs are developed to meet the special needs of the campus community. **Brochures and literature** on crime prevention and personal safety are available online.

**Counseling and Psychological Services** (CAPS) and the Crime Prevention Unit offer presentations on sexual assault issues. Topics include acquaintance rape education and prevention, personal safety and prevention techniques, recovery from sexual assault, clear communications, and the continuum of violence and rape in society. The educational programs, tailored to meet the needs of individual audiences, include films, discussion groups, lectures, role plays, and communication exercises. CAPS reaches students through the residence halls, sororities, fraternities, athletic teams, student clubs, and various student functions. Services include crisis intervention and advocacy for victims of sexual assault; short-term counseling and referrals for survivors, their families, and friends; support groups for rape



survivors; and self-defense classes and a lending library. CAPS works closely with the student housing offices and the police department to increase campus safety.

Several programs have been designed to increase the level of crime awareness and campus safety at UCLA. Incidents of criminal activity that pose a potential threat to the campus are brought to the attention of the community through campus [crime alert bulletins](#). Additionally, those interested in receiving public safety bulletins and news briefs can sign up for the [campus safety listserv](#).

## Emergency Medical Services

UCPD provides emergency medical response for the campus community through the Emergency Medical Services (EMS) unit. The EMS unit is staffed by full-time UCLA students certified as emergency medical technicians (EMTs). Emergency medical services are available 24 hours a day, 365 days of the year. As in all emergencies, call 911 for this service.

## Alcohol and Substance Abuse Education

Students with alcohol or substance abuse problems create safety and health risks for themselves and others. Such abuses can result in a wide range of emotional and behavioral problems. Therefore, UCLA makes available to every student a variety of alcohol and substance abuse awareness programs that are designed to discourage the use of illicit substances and to educate students on the merits of legal and responsible alcohol consumption. [Counseling and Psychological Services](#) (310-825-0768) provides counseling and referral assistance to students who are troubled by alcohol or substance abuse problems. The service is completely confidential and free to regularly enrolled students. All information and counseling is treated in accordance with UCLA and UC policies and state and federal laws. Any decision to seek assistance is not used in connection with any academic determination or as a basis for disciplinary proceedings.

## Residential Housing

UCLA is the size of a small city, and provides residential housing to approximately 20,000 students. Housing facilities range from apartments designed for students with children to multi-student apartment complexes to high-rise student residence halls. UCPD and student housing staff work in partnership to create a safe and comfortable living and learning environment.

Campuswide security and safety programs for residents are held throughout the year to increase awareness of potential crime and improve campus safety. To keep residents imme-

diately informed of major crime or threats to the campus, crime alert bulletins are posted in residential areas by the housing staff. However, residents must take an active role to ensure their own safety by exercising simple common-sense crime prevention techniques. Because the campus is open 24 hours a day, visitation to residence halls and apartments is not restricted. All residence halls have 24-hour access control on entrance doors, and during the evening hours access control monitors are stationed at each entrance. UCPD police officers and CSOs are also assigned to the residence halls.

UCLA-affiliated organizations that maintain off-campus facilities are under the shared jurisdiction of their local police department and the UCLA Police Department, which provides assistance to students, faculty, and staff; and/or referrals to neighboring police departments.

## Safety Tips

The nature of the studies and research done at UCLA requires many campus buildings to be open 24 hours a day. Because the campus is so large and adjacent to the greater Los Angeles community, individuals with criminal intent are able to access UCLA grounds.

Regardless of the time of day or night, and no matter where persons are on campus, they should be alert, aware of their surroundings, and exercise common-sense safety precautions. Anyone parking on campus should remember to lock their vehicle and consider investing in a locking device and/or alarm. Use CSO escorts when walking at night. Keep room and apartment doors and windows locked at all times. Most important, anyone needing assistance should not hesitate to contact the department.

Take advantage of the safety services provided by UCLA and UCPD. See the [Campus Safety Tips](#) web page for more information.

## Associated Student Services

Founded when UCLA opened in 1919, [Associated Students UCLA](#) (ASUCLA) delivers services to the campus community through student government, student media, and services and enterprises. Every registered UCLA student is a member of ASUCLA.

## Student Government

Many facets of student life at UCLA are sponsored or organized by student government. Getting involved in the decision-making process is rewarding and offers avenues of expression students may not find in other aspects of their university experience.



## Graduate Students Association

The **Graduate Students Association** (GSA) is the official organization representing UCLA graduate and professional students in academic, administrative, campus, and state-wide areas. GSA appoints or elects graduate student members to important campus organizations and committees including the Student Fee Advisory Committee and Academic Senate committees. It sponsors graduate student orientation; the Graduate Student Resource Center and Graduate Writing Center; and various graduate student journals, programs, and social events, including the Melnitz Movies film program.

## Undergraduate Students Association

Undergraduate student government is embodied in the **Undergraduate Students Association** (USA). Its governing body, the Undergraduate Students Association Council (USAC), is comprised of elected officers as well as appointed administrative, alumni, and faculty representatives. Every UCLA undergraduate student is a member of USA.

USA activities offer services to the campus and surrounding communities, and give students the opportunity to participate in and benefit from multiple programs. For example, its programs tutor youths and adults, address health needs of ethnic communities, combat poverty and homelessness, and better the environment.

## Campus Events

Each year approximately 40,000 students, faculty, and staff attend programs of the **Campus Events Commission** (CEC), including a film program, speakers program, and performances by dozens of outstanding entertainers.

The Speakers Program brings entertainers, politicians, and literary figures to campus and presents two annual awards—the Jack Benny Award for comedic excellence and the Spencer Tracy Award for outstanding screen performance. Speakers and awardees have included notables as varied as Bill Gates, Whoopi Goldberg, and Tom Hanks.

The Concert Program brings new and popular performing artists like Rage Against the Machine or A Tribe Called Quest to UCLA for free and affordably priced concerts.

The **Cultural Affairs Commission** sponsors art exhibits in the Kerckhoff Hall Art Gallery, the JazzReggae Festival, Bruin Bash, Hip Hop Congress, and Worldfest.

## Publications, Web, and Broadcast Media

Student publications and media offer a training ground for aspiring writers, journalists, photographers, and media

managers while serving the communication needs of the campus community. Most publications offices are in Kerckhoff Hall. Information and applications are available [online](#).

### Daily Bruin

The **Daily Bruin**, with a circulation of 9,000, is one of the largest daily newspapers in Los Angeles. As the principal outlet for campus news, the *Bruin* is published each week-day of the academic year (once a week during the summer) and is distributed free from kiosks around campus and local areas. Students work as reporters, editors, designers, photographers, videographers, and radio reporters, as well as advertising sales representatives and marketing account executives. New staff members are welcome every quarter.

### Newsmagazines

Seven print newsmagazines reflecting the diversity of the campus community are published each term. ***Al-Tālib***, ***Fem***, ***Ha'Am***, ***La Gente***, ***Nommo***, ***OutWrite***, and ***Pacific Ties*** deal respectively with issues relevant to the Muslim; feminist; Jewish; Chicano, Latino, and Native American; African American; lesbian, gay, bisexual, transgender, and queer; and Asian communities. Each includes news and features on political and cultural affairs both on and off campus. Prospective staffers are welcome.

### Online Media

Student Media supports the **Bruinwalk.com** community portal. Features include UCLA professor reviews, used book trading, reviews of apartments near UCLA, and a campus calendar.

### UCLA Radio

**UCLA Radio** broadcasts live over the Internet and features college alternative, hip-hop, jazz, and world music. It also covers select Bruin football, basketball, and baseball games and airs a lineup of sports talk shows. Studios are in Ackerman Union; all positions, including on-air, news staff, and advertising representatives, are open to students.

### Yearbook

The UCLA yearbook, ***BruinLife***, is one of the largest student publication efforts on campus. It contains photographs and information on undergraduate students, graduating seniors, athletic teams, fraternities and sororities, and campus activities. Students who would like to participate may contact the yearbook staff.

Graduating students can use **BruinLife** Photo Studio for their senior yearbook portraits.

## Retail and Restaurants

### Restaurants

ASUCLA operates more than a dozen restaurants and 10 coffee houses on campus, assuring a range of eating options from Italian to sushi. From the residence halls to the student union, a restaurant is never far. Hours vary, especially during summer and holidays. Locations of all the restaurants are posted [online](#).

### UCLA Store

The [UCLA Store](#) has six locations on campus. Author signings, sales, and other special events are announced in the *Daily Bruin* or on the UCLA Store website.

The UCLA Store–Ackerman Union has eight departments. Textbooks carries required and recommended texts for most undergraduate and many graduate courses, and operates a buyback service so students can sell used texts. Book-Zone offers reference books and a wide selection of titles in literature, science, history, and technical disciplines, including those by faculty authors. Computer Store carries personal computers, peripherals, accessories, and software at low academic prices. Essentials offers school and office supplies, including printer consumables. BearWear specializes in UCLA emblematic merchandise. Fast Track carries active sportswear and accessories for men and women. Beautique stocks makeup, Clinique skin care, and fashion accessories. Market is a convenience store, with snacks, health and beauty aids, gifts, and greeting cards. Ashe-Center-operated [U See LA Optometry](#) and [Bruin Health Pharmacy](#) are also in Ackerman Union.

[UCLA Store–Health Sciences](#) specializes in books and supplies for students in dentistry, medicine, nursing, public health, and related areas. UCLA Store–Lu Valle Commons carries art supplies and books, as well as textbooks and supplies for all on-campus Extension courses and selected academic programs (architecture and urban design, art, design, film, information studies, law, management, public policy, social welfare, theater, urban planning). North Campus Shop, South Campus Shop (Court of Sciences), Energy Zone (Wooden Center) and Hill Top Shop in Sunset Village are convenience store locations.

### Other Services and Enterprises

ASUCLA oversees a variety of other services ranging from a post office to a hair salon. Most are located in Ackerman Union.

For students preparing to graduate, [Graduation Etc.](#) sells and rents caps, gowns, and hoods for degree ceremonies; and offers announcements, diploma mounting, portraits, and other graduation-related products and services.

[Bruin Custom Print](#) offers copying; binding; and banner, poster, and t-shirt printing. The shop streamlines the process involved in printing custom specialty products that need UCLA licensing and trademark clearance.

## Student Life Services

From housing to transportation, basic student needs are facilitated by services designed to enhance all aspects of student living.

### Banking

Automated teller machines representing several major banks are located in Ackerman Union, and near restaurants and shops around campus.

The [University Credit Union](#) and [Wescom Credit Union](#) have branch offices in Ackerman Union.

### BruinCard

The UCLA BruinCard is a mandatory campuswide identification card that can electronically confirm student status and eligibility for services. Supportive photo identification—such as a driver’s license or state ID, passport, or military ID—is required when the card is issued.

The primary BruinCard benefit is convenience. It is a versatile card that serves the following functions: confirmation of student status; ID card for faculty, staff, and students; residence hall access and meal card; laundry, library, and recreation card; debit card (if activated) for purchases at campus stores and restaurants on and off campus; and discounted access to Santa Monica and Culver City bus lines.

Students with an outstanding financial, academic, or administrative hold may not receive BruinCard services until the hold is released by the initiating office. Information on outstanding holds and initiating offices is available on [MyUCLA](#).

The BruinCard center is located in 123 Kerckhoff Hall. See [BruinCard](#) to check account balance, make deposits, view recent transactions, and report lost or stolen cards.

### Bruin Resource Center

The [Bruin Resource Center](#) (BRC) in the Student Activities Center can help students navigate the campus and its many services by directing them to the correct office or personnel to meet their specific needs.

The center offers services to all UCLA students, including specialized services for transfer and re-entry students, students who are transitioning out of foster care, student parents, and veterans. Additional offerings include workshops and academic courses to help students develop practical skills and knowledge to succeed at UCLA.

The BRC also houses the [Veteran Resource Office](#), which offers services specifically designed to assist students who are U.S. armed forces veterans or current military members.

## Career Center

The UCLA [Career Center](#), located in the Strathmore Building, offers career education, development, engagement, and support free to all UCLA students.

## Career Support

Career educators offer assistance with completing self-assessments, exploring career options, evaluating graduate and professional school programs, identifying transitional skills, and conducting a successful job or internship search. Career educators also share information on internship opportunities and how to develop a professional network. A variety of workshops are offered year-round to help students become career-ready. Additionally, students can connect with employers through career fairs, employer information sessions, on-campus interviews for internships and jobs, and other employer-facing events.

## Online Tools and Resources

Students looking for internships, jobs, and other experiential learning opportunities to develop their skills can find listings through [Handshake](#), an online platform that connects UCLA students with thousands of employers looking to hire and recruit UCLA graduates, exclusively. Additional [online resources](#) are available for resume review; interview practice; searching for project-based internships, micro-internships, and international options; and tools that allow students to explore interests and career fields.

## Center for Accessible Education

The [Center for Accessible Education](#) (CAE) in A255 Murphy Hall offers academic support services to regularly enrolled students with documented permanent or temporary disabilities in compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and UC and UCLA policies. Services include campus orientation and accessibility, notetakers, reader service, sign-language interpreters, registration assistance, test-taking facilitation, special parking assistance, real-time captioning, assistive listening devices, on-campus transportation, adaptive equipment, support groups and workshops, tutorial referral, special materials, housing appeals, referral to the Disabilities and Computing Program, and processing of California Department of Rehabilitation authorizations. There is no fee for any of these services. All contacts and assistance are handled confidentially.

For information, see [Disabilities and Computing Program](#) under Study Services.

## Central Ticket Office

Tickets for UCLA events are available at the [Central Ticket Office](#) (CTO) in the James West Alumni Center. As part of its service, the CTO offers students with current BruinCards discount tickets to campus athletic and cultural events and local movies. Students may also purchase tickets to off-campus events through Ticketmaster, as well as student discount tickets for Los Angeles-area buses.

## Child Care

UCLA [Early Care and Education](#) (ECE) operates three accredited child care centers near UCLA and student housing. Care is available for children two months to six years old at most centers. Fees depend on the age of the child. A limited number of state grants and partial scholarship subsidies is available for eligible student families.

[University Parents Nursery School](#) is a UCLA-affiliated, parent-participation, multicultural cooperative school for two- through five-year-old children of UCLA students, faculty, and staff. It is located in the University Village Child Care Complex.

## Dean of Students/Student Conduct

The [Office of the Dean of Students](#) in Murphy Hall helps students, either directly or by referral, with whatever needs they might have. Direct services include general counseling; sending emergency messages to students; and assisting in understanding UCLA and UC policies and procedures, including grievance procedures regarding student records, discrimination, and student debts.

The office publishes official notices in the *Daily Bruin* at various times during the year. Such notices are important, and all students are held responsible for the information in them.

The [Student Conduct office](#) administers campus discipline and enforces the standards of citizenship that students are expected to follow at UCLA. Standards involve complying with the policies and regulations governing this campus and being aware that violation of those policies or regulations can result in disciplinary action. Refer to [Student Conduct Policies](#) for more information.

## International Student Services

International student services, based in Bradley International Hall, offer support for the UCLA international com-

munity, particularly for nonimmigrant students. An online orientation program helps international students become familiar with visa regulations, campus life at UCLA, and life in the U.S. Programs throughout the year allow them to share viewpoints with American students and the community.

## Dashew Center for International Students and Scholars

The **Dashew Center for International Students and Scholars** assists students with questions about immigration, employment, government regulations, financial aid, academic and administrative procedures, cultural adjustment, and personal matters. The center seeks to improve student and community relationships; helps international students with language, housing, and personal concerns; and sponsors cultural, educational, and social programs. The center offers visa assistance for faculty members, researchers, and postdoctoral scholars.

## Lesbian Gay Bisexual Transgender Campus Resource Center

The **Lesbian Gay Bisexual Transgender Campus Resource Center** in the Student Activities Center offers education, information, and advocacy services for the UCLA community. The center offers support groups, educational workshops, training seminars, and social activities; and maintains a library of 4,000 books, periodicals, and films. The staff provides confidential assistance and support to students, faculty, and staff who feel they have experienced harassment or discrimination or who wish to connect to the campus LGBTQ community.

## Office of Ombuds Services

The **Office of Ombuds Services** responds to issues and concerns from students, staff, faculty, and administrators. Acting impartially, ombudspersons may investigate unresolved conflicts or facilitate the resolution of problems for which there are no established guidelines; and may also, where possible and when requested, assist in resolving an issue through mediation (including sexual harassment cases). The office is located in the Strathmore Building.

## Parking and Commuter Services

Parking permits, ridesharing, and other commuting alternatives and services are offered through **UCLA Transportation**.

## Commuter Services

**Commuter programs** offer information to help students get to and from campus without driving a car. These programs

also help students use the extensive Los Angeles-area public transit network.

Students can use a **trip planning tool** to determine the best route to campus, or find a carpool or vanpool nearby. The **Bruin Commuter Club** offers special benefits and incentives to eligible UCLA students who ride public transit or carpool.

Students may also rent a car by the hour through **Zipcar**.

## Parking Permits

Parking at UCLA requires a permit. The **Bruin ePermit** is paperless, and uses a vehicle's license plate as its parking permit.

Students must be registered for the current term to **apply for parking**, and permits are not guaranteed. Parking offers are prioritized according to parking availability and school. Within each category, carpools have priority, and carpool permits are offered at a discounted rate. All carpool members must qualify under the carpool parking requirements. Students must reapply for parking each term.

Students living within ZIP code 90024 pay the residence hall parking rate. Students living in campus residence halls (excluding Regents Scholars) who have off-campus jobs, and commuter students who have extenuating circumstances, must complete an **exemption application** and supply supporting documents.

Effective winter quarter 2019, disabled students apply for parking in person at the **UCLA Transportation** lobby. This applies to students with permanent and short-term disabilities who have a DMV-issued disabled person placard or license plate.

## Post Offices

Campus mail is handled by UCLA **Mail, Document, and Distribution Services** (MDDS), which offers full-service document processing and delivery for the campus community.

ASUCLA operates a U.S. Postal Service express post office on A Level in Ackerman Union.

## Residential Services

**UCLA Housing** is the best guide for finding the right kind of accommodation for different lifestyles and budgets. It includes detailed information about the different residence options, dining plans, support and extracurricular programs, and an online housing application.

## On-Campus Housing

Many students, especially those in their first year, choose to live on campus. Besides the convenience, campus living is a good way to meet other people and to find out about social

and academic activities. Four residence halls, six deluxe residence halls, two residential suites, and five residential plazas accommodate over 13,000 undergraduate students. All on-campus housing buildings are coed and within walking distance of classrooms. New first-year and transfer students who are admitted for fall quarter and apply on time are guaranteed housing. Graduate student housing is also available.

Rooms in undergraduate residences are furnished and usually shared between two or three students. Meals are served daily at residential restaurants, and students may choose from a variety of meal plans.

Students apply for on-campus housing, by posted deadlines, at the [My Housing](#) website. Students who apply for winter or spring quarter are assigned housing on a space-available basis in the order their applications are received.

Per-person rates for the academic year vary depending on housing type. See [housing rates](#) for current rates.

**Residential Life** is responsible for student conduct in all residential communities. Its professional and student staff members can counsel students on residential problems.

Facilitated by Residential Life, **Living Learning Communities** offers students with similar interests an opportunity to live together and participate in programs according to their academic, social, and personal needs and interests. Students can live in communities as varied as creative collective; first-to-go; gender, sexuality, and society; global health; interfaith; public service and civic engagement; sustainable living; technology and innovation; transfer experience; and various cultures.

## Off-Campus Housing

Within walking distance of campus, UCLA maintains 13 undergraduate off-campus apartment buildings for full-time, single transfer, and students beyond their first year. Apartments vary from singles to four-bedroom units, with bedrooms usually shared by two or three students. Not all types of apartment spaces are available to entering students.

**Virtual tours** are available.

Married, single-parent, and single graduate students are accommodated in eight **off-campus apartments**; some are located within walking distance of campus, others about five miles from campus and served by a campus shuttle. Apartments include furnished and unfurnished studio and one-, two-, and three-bedroom units. Assignment to several apartments is by wait list; students must be accepted to UCLA to apply.

Many of the fraternities and sororities at UCLA own chapter houses. Complete information and membership requirements are published by [Fraternity and Sorority Life](#).

## Student Legal Services

Through **Student Legal Services** in Murphy Hall, currently registered students with legal problems or questions about their legal rights can get assistance from attorneys or law students under direct supervision of attorneys. They help students resolve legal problems, including those related to landlord/tenant relations; accident and injury problems; criminal matters; domestic violence and harassment; divorces and other family law matters; automobile purchase, repair, and insurance problems; health care, credit, and financial aid issues; consumer problems; and UCLA-related issues. Assistance is available only by appointment.

## Veterans Affairs Services

The veterans affairs benefits officer provides assistance with benefit information, waivers, enrollment certification, and coordinating transitions to and from active duty. For more information, see [Registrar's veteran services](#).

Part of the Bruin Resource Center, the **Veteran Resource Office** (VRO) helps veterans navigate UCLA and furnishes mentoring, guidance on educational benefits, and tools to succeed academically and personally through a variety of programs and services.

## Student Activities

The opportunities to participate in extracurricular activities at UCLA are virtually unlimited, and are a good way for students to expand their horizons beyond classroom learning.

## Clubs and Organizations

Joining a club or organization is a great way to meet other students with shared interests and to get involved in campus life.

## Community Programs Office

The UCLA **Community Programs Office** (CPO) houses student-initiated community service projects that offer educational, legal, social, medical, and academic services to underserved communities in Southern California; seven student-initiated outreach projects that seek to improve the number of students from local underserved areas who attend colleges and universities; and five student-initiated retention projects that seek to ensure that all students who enter UCLA actually graduate. CPO programs foster a multi-cultural and ethnically diverse environment at UCLA.



## Office of Fraternity and Sorority Life

Fraternities and sororities have been at UCLA since the early 1920s. Today UCLA is home to more than 70 national and local Greek-letter organizations that make up one of the largest Greek systems on the West Coast.

The **Office of Fraternity and Sorority Life** (FSL) interprets UCLA policies, procedures, and regulations, and acts as a liaison between established Greek organizations and UCLA. It coordinates Greek-letter social organizations that participate in programs such as the Greek Leadership Conference, Greeks against Sexual Assault (GASA), Greek Week, new member forums, dating expectations programs, intramural tournaments, and UCLA-sponsored programs.

## Office of Residential Life

The **Office of Residential Life** hosts **True Bruin Welcome** and the **Common Experience**, and brings a variety of programs to the Hill to build a sense of community and offer social enrichment.

## Student Organizations, Leadership, and Engagement

UCLA has over 1,000 different organizations recognized by **Student Organizations, Leadership, and Engagement** (SOLE)—more than are found on almost any other university campus in the country. Organizations registered with SOLE include political, recreational, community service, cultural, academic, religious, and residential clubs. It only takes three people to start a new club if their interests are not already represented. SOLE also handles complaints of misconduct against officially recognized student organizations.

## Performing Arts

Concerts, dance recitals, and theater productions are all part of exceptional programs offered by the Ethnomusicology; Film, Television, and Digital Media; Music; Theater; and World Arts and Cultures/Dance departments, and by the Center for the Art of Performance at UCLA.

## Center for the Art of Performance

Since 1937, the **Center for the Art of Performance** (CAP) at UCLA has been a premier West Coast showcase for world-class performing artists and ensembles as well as innovative new work in dance, music, theater, and performance art. The center presents more than 200 public concerts and events each year, often sponsoring debut performances of new works by major artists. Through the center, the campus hosts a varied and active performance program, ranging

from regular concerts by the Los Angeles Chamber Orchestra to events with The Symphonic Body UCLA, Contra-Tiempo, Peter Sellars, Cassandra Wilson, Anoushka Shankar, Afro Latin Jazz Orchestra, Randy Newman, Bojofondo, Buddy Guy, and Young Jean Lee's Theater Company. Subject to availability, discount tickets are offered to students, faculty, and staff.

## Department Events

The **Ethnomusicology Department** offers students the opportunity to perform in various world music and jazz ensembles that give concerts listed in the department schedule of events.

The **Film, Television, and Digital Media Department** features student-directed films and television programs throughout the year, and the **Theater Department** presents a series of major productions to the general public. The School of Theater, Film, and Television annual **Design Showcase West** features rising entertainment designers; its week-long **Film Festival** celebrates film, digital media, animation, screenwriting, and acting that spans performance art to the classics.

The **Music Department** features performances by ensembles ranging from music theater to opera. Its Gluck Outreach Program and Music Partnership Program reach out to the community through free performances throughout Los Angeles and Southern California.

The **World Arts and Cultures/Dance Department** presents events and concerts involving department faculty members, guest artists, and students. Student performances include MFA concerts, an undergraduate and graduate student-produced concert, and the Senior Concert/Colloquium. Students also perform in more informal programs, such as the end-of-term student works festival or *Pau Hana*, that feature many world dance forms.

## Recreation

To help students learn new skills, meet people with similar interests, relieve stress, and increase fitness, **UCLA Recreation** (UREC) oversees programs from intramural sports to outdoor adventures.

## Intramural and Club Sports

The UCLA **intramural sports** program consists of team, dual, and individual sports competition in tournament or league play. Over 7,000 participants compete throughout the year in various sports activities ranging from basketball to water polo. UCLA students and recreation membership holders are eligible. Varying skill levels are offered in almost all activities, and the emphasis is on friendly competition.

**Club sports** offer students the chance to organize, coach, or participate in sports that fall beyond the scope of intramurals but are not offered at the varsity level. Coed teams exist in archery, badminton, boxing, Brazilian jiu-jitsu, climbing, cycling, dragon boat, equestrian, fencing, figure skating, golf, gymnastics, judo, kendo, powerlifting, quidditch, running, sailing, ski and snowboard, squash, swim, table tennis, taekwondo, tennis, track and field, triathlon, water skiing, wrestling, and wushu. Separate men's and women's teams exist in basketball, lacrosse, rugby, soccer, ultimate, volleyball, and water polo. There are also men's teams in baseball, ice hockey, and rowing; and women's teams in beach volleyball, field hockey, and softball.

## Outdoor Adventures

**Outdoor Adventures** offer students the chance to get away and enjoy the wonders of local and distant mountains and waterways. Activities designed for beginning to experienced outdoors people include bike rides, challenge course, camping, rock climbing, scuba diving, windsurfing, canoeing, kayaking, and hiking.

## Class Programs

Noncredit **instructional classes** in arts, dance, fitness sports, golf, kayaking, martial arts, outdoor adventures, rock wall, rowing, sailing, standup paddling, surfing, swimming, tennis, water aerobics, windsurfing, yoga, and a variety of group fitness programs are offered for beginning and intermediate levels. Private lessons in arts, dance, martial arts, sports, aquatics, and other activities are also available. Fitness is offered either as a recreation class or on a drop-in basis.

## Facilities

For registered students who prefer independent recreation and exercise, UREC offers access to many facilities. The **John R. Wooden Recreation and Sports Center** has multiple gymnasias; basketball, volleyball, and badminton courts; handball/racquetball/squash courts; a weight training facility, rock climbing wall, exercise/dance and martial arts studios; and a games lounge. The **Bruin Fitness Center**, located on the Hill, and **Kinross Recreation Center**, located in Westwood, offer closer-to-home exercise options for undergraduate and graduate students respectively. **Sunset Canyon Recreation Center** offers activities in an outdoor park setting that features a 50-meter swimming pool, 25-yard family pool, picnic/barbecue areas, play fields, outdoor amphitheater, six lighted tennis courts, sand volleyball court, two multipurpose sports courts, and various meeting rooms and lounges, as well as a challenge course. The **UCLA Marina Aquatic Center** offers sailing, windsurfing, kayaking, rowing, surfing, and other activities. Students also have

the use of **Pauley Pavilion, Drake Stadium, Hitch Basketball Courts, Sycamore Tennis Courts, Los Angeles Tennis Center, intramural field, Student Activities Center**, and Kaufman Hall for recreational sports and activities.

## Sports and Athletics

**UCLA Athletics** plays a major role in the UCLA mission to furnish a well-rounded education both in and out of the classroom. UCLA continues to live up to its reputation as a national leader in intercollegiate sports. The first school to win 100 National Collegiate Athletic Association (NCAA) championships, UCLA currently ranks second in the U.S. with 120. In 2021-22, UCLA men's and women's athletic programs placed 15th in the Directors Cup national all-around excellence survey; men placed in the top 10 three times and women seven times over the 11 years of the Capital One Cup. In the 23-year history of the *USA Today* survey, the men's program placed first 11 times; the women's program placed first five times in the final nine years. UCLA was the first university in the country to win five NCAA men's and women's championships in a single year (1981-82). UCLA competes as the Bruins, in colors of blue and gold.

UCLA also has produced a record number of professional athletes such as Kareem Abdul-Jabbar, Troy Aikman, Arthur Ashe, Eric Karros, Reggie Miller, Corey Pavin, Jackie Robinson, Bill Walton, and Natalie Williams; and Olympians such as medalists Gail Devers, Ann Meyers Drysdale, Lisa Fernandez, Jackie Joyner-Kersey, Karch Kiraly, Dot Richardson, Peter Vidmar, and Natasha Watley.

## Athletic Facilities

The major indoor arena at UCLA is the famed Pauley Pavilion, which seats approximately 13,800 for UCLA basketball, volleyball, and gymnastics events. It was the site of the 1984 Summer Olympics gymnastics competition. The adjacent Drake Stadium is the site of UCLA soccer and track and field competitions, and of many outdoor events including the 1991 U.S. Olympic Festival. The Spieker Aquatics Center is home to the UCLA water polo, swimming, and diving teams. The Los Angeles Tennis Center—a 5,800-seat outdoor tennis stadium and clubhouse—was the site of the 1984 Olympic tennis competition. Easton Softball Stadium, which seats 1,300, is home to the women's softball team. The Morgan Intercollegiate Athletics Center houses the UCLA Athletic Hall of Fame and the actual personal den of Coach John Wooden. Off-campus facilities include Jackie Robinson Stadium for varsity baseball and the renowned Rose Bowl in Pasadena, home of the UCLA football team.

## Intercollegiate Sports

UCLA Athletics is a member of the **Pac-12 Conference**.

Men's teams have won an overall total of 77 NCAA titles—second highest in the nation—including 20 in volleyball, 16 in tennis, 12 in water polo, 11 in basketball, eight in track and field, four in soccer, two each in golf and gymnastics, and one each in baseball and swimming. Students can participate on the varsity level in baseball, basketball, cross country, football, golf, soccer, tennis, track and field, volleyball, and water polo.

Women's teams have won an overall total of 44 NCAA titles—second highest in the nation—including 12 in softball, seven in water polo, seven in gymnastics, five in track and field, four in volleyball, three in golf, two each in beach volleyball, soccer, and tennis. Students can participate on the varsity level in basketball, beach volleyball, cross country, golf, gymnastics, rowing, soccer, softball, swimming and diving, tennis, track and field, volleyball, and water polo.

## UCLA Alumni Association

Through 85 years of serving the UCLA community, the UCLA **Alumni Association** has more than 92,000 members, making it one of the largest alumni groups in the nation. Whether a person is a recent graduate, a pioneer Bruin, or somewhere in

between, membership in the Alumni Association is the best way to stay connected to UCLA and its growing excellence.

Membership dues enable the Alumni Association to serve as an advocate on campus and to play the vital role of guardian of the value of every UCLA degree. Dues also support student programs such as **Beat SC Rally**, **I Love UCLA Week**, **Locks of Love**, **Dinners for 12 Strangers**, **Spring Sing**, Alumni Day, senior events, class reunions, career events, and a **scholarship program**.

The association offers many benefits and services, including alumni career and travel services. Members make friends, pursue lifelong learning, save money, and make a difference. UCLA graduates, Bruin parents, and friends of UCLA are invited to take advantage of all the association has to offer. Offices are in the James West Alumni Center.

# Undergraduate Study

Undergraduate students at UCLA can earn bachelor degrees in 141 majors in the College of Letters and Science and eight professional schools: Henry Samueli School of Engineering and Applied Science; Herb Alpert School of Music; Jonathan and Karin Fielding School of Public Health; Meyer and Renee Luskin School of Public Affairs; School of the Arts and Architecture; School of Education and Information Studies; School of Nursing; and School of Theater, Film, and Television.

In addition to its record of academic excellence, UCLA offers undergraduate students an extraordinary opportunity to participate in undergraduate research, internships and community service, a variety of undergraduate programs and seminars, and prepares the next generation for leadership roles after graduation.

## Shared Governance

Undergraduate degree programs, courses, and requirements are governed by the Undergraduate Council; College and school faculty executive committees; and committees for general education, Writing II, and diversity requirements.

## Undergraduate Council

The [Undergraduate Council](#) is a standing committee of the UCLA Academic Senate. The council is responsible for the establishment of policy and standards for undergraduate education at UCLA, recommends to the Legislative Assembly programs that lead to new degrees, and delegates authority to College and school faculty executive committees.

## Undergraduate Education Division

Led by the dean for undergraduate education, the [Division of Undergraduate Education](#) is a campuswide advocate for undergraduate education. Among its goals are to enrich the quality of the academic experience of undergraduate students, help students find meaningful pathways to timely degree completion, and prepare students for life after college. The division oversees the general education curriculum and offers programs including *Fiat Lux* seminars, cluster courses, and New Student Academic Programs; as well as the Academic Advancement Program, Center for Academic Advising in the College, Center for Community Engagement, Center for Undergraduate Research, and College Honors programs.

## Undergraduate Admission

### Undergraduate Admission

1147 Murphy Hall  
310-825-3101

Prospective undergraduate students should give careful thought to adequate preparation in reading, writing, mathematics, laboratory sciences, languages, visual and performing arts, and other subject areas related to a degree objective or major. To be competitive, UCLA applicants need to present an academic profile much stronger than that represented by the minimum UC admission requirements.

Undergraduate Admission invites prospective students to visit UCLA for [individual or group tours](#) of the campus. Reservations are required.

## Application for Admission

Prospective students apply for admission to UCLA for the fall quarter by completing the [UC Application for Admission and Scholarships](#).

One application is used for all nine UC campuses with undergraduate programs. Students apply to one UC campus with a nonrefundable application fee; an additional fee is charged for each additional campus. Students may only apply to one College or school at UCLA.

## When to Apply

All majors and programs in the College of Letters and Science; Henry Samueli School of Engineering and Applied Science; Herb Alpert School of Music; Jonathan and Karin Fielding School of Public Health; Meyer and Renee Luskin School of Public Affairs; School of the Arts and Architecture; School of Education and Information Studies; School of Nursing; and School of Theater, Film, and Television are open for fall quarter. The application filing period is October 1 through November 30 of the prior year. See [how to apply](#) for up-to-date information on application procedures.

## Admission Notification

The UC Application Center sends e-mail notices to acknowledge receipt of applications. Subsequently, UCLA Undergraduate Admission notifies students of the admission decision. Fall-quarter freshman applicants are notified in late March; transfer applicants are notified in late April.

Students who are offered admission are asked to submit a Statement of Intent to Register and a Statement of Legal

Residence. A nonrefundable deposit, also required at this time, is applied to the student services fee as long as students register in the term to which they are admitted.

## Entrance Requirements

Entrance requirements established by the University of California follow the guidelines set forth in the California Master Plan for Higher Education, which requires that the top 12.5 percent of the state's high school graduates be eligible for admission to the University of California. Requirements are designed to ensure that all eligible students are adequately prepared for university-level work.

Fulfilling the minimum admission requirements does not assure admission to UCLA. Admission is based on demonstrated high scholarship in preparatory work going well beyond the minimum eligibility requirements. Honors-level high school, and Advanced Placement, International Baccalaureate, and transferable college courses are good preparation regardless of the desired major. UCLA offers admission to those students with the best overall academic preparation, viewed in the context of applicants' academic and personal circumstances, extracurricular and volunteer experiences, and the overall strength of the UCLA applicant pool. For details, see [undergraduate admission](#).

## Admission as a Freshman

Students are considered freshman applicants if they have not enrolled in a regular session of any college-level institution since graduation from high school. Students who attend summer session immediately following high school graduation are still considered freshman applicants.

## Minimum Admission Requirements

To be considered for admission as a freshman, students must meet the subject and grade-point average (GPA) requirements.

### Subject Requirement

The subject requirement, sometimes called A to G requirements, is a sequence of high school academic courses required for admission to the University of California. Each course must be completed with a grade of C or better. The requirement consists of 15 year-long courses, with 11 completed prior to the beginning of 12th grade. These are the minimum requirements; students should exceed these requirements whenever possible.

**A. History/Social Science.** Two years of history/social science, including one year of world history, cultures, and historical geography; and one year of U.S. history, or one-

half year of U.S. history and one-half year of civics or American government

**B. English.** Four years of college-preparatory English that include frequent writing, from brainstorming to final paper, as well as reading of classic and modern literature. No more than one year of ESL-type courses may be used to meet this requirement

**C. Mathematics.** Three years of college-preparatory mathematics, including or integrating the topics covered in elementary and advanced algebra and two- and three-dimensional geometry. Mathematics courses completed in the seventh and/or eighth grades and approved integrated mathematics courses may be used to meet part or all of this requirement

**D. Science.** Two years of college-preparatory science, including or integrating topics that provide fundamental knowledge in two of these three subjects: biology, chemistry, or physics. One year of approved interdisciplinary or earth and space sciences course may be used to meet one year of this requirement

**E. Language Other than English.** Two years of the same language—or coursework equivalent to the second level of high school instruction—including emphasis on speaking and understanding, development of awareness and understanding of the cultural context around the target language, practice with reading and composition, and instruction on grammar and vocabulary. Language courses taken in seventh and/or eighth grade may be used to meet part or all of this requirement. American Sign Language and classical languages such as Greek and Latin are acceptable

**F. Visual and Performing Arts.** One year-long visual and performing arts course selected from dance, drama/theater, music, visual art, or interdisciplinary arts

**G. College Preparatory Electives.** One year (two semesters), in addition to those required in A through F, or one year (two semesters) approved in the elective category

### Subject Requirement Summary

A. History/Social Science	2 years
B. English	4 years
C. Mathematics	3 years
D. Laboratory Science	2 years
E. Language Other than English	2 years
F. Visual and Performing Arts	1 year
G. College Preparatory Electives	1 year

### Grade-Point Average Requirement

California residents are eligible for admission to the University of California with a 3.0 grade-point average; nonresidents are eligible with a 3.4 GPA. Minimum eligibility does not guarantee admission to UCLA.



## Standardized Testing

Scores submitted as part of an application may be used to determine eligibility for the California statewide admissions guarantee, as an alternative method of fulfilling minimum requirements for eligibility, or for course placement once admitted.

More information regarding the University of California testing policy may be found on the [UC admission](#) website.

## Admission Selection

UCLA selects students using a carefully designed holistic evaluation process that takes into account an applicant's achievements, both academic and nonacademic, in the context of the opportunities available. Among other factors, holistic evaluation specifically considers academic grade-point average; the quality, quantity, and level of coursework taken; sustained participation in activities that develop academic and intellectual abilities; leadership and initiative; employment and personal responsibilities; and overcoming life challenges related to personal or family situations.

Because admission requirements and selection criteria may change, freshman applicants should see [freshman admission process](#) for the most complete and up-to-date information.

## Admission as a Transfer Student

Students are considered transfer applicants if they have enrolled in a regular fall, winter, or spring session at another college or university or in college-level extension courses after completion of high school. (This does not include attending a summer session immediately following high school graduation.) Students may not disregard their college record and apply for admission as a freshman.

In accordance with the California Master Plan for Higher Education, first preference is given to California community college applicants. Each application receives a comprehensive evaluation, integrating all available information. Students attaining senior standing are generally not admitted.

Academic criteria are as follows: junior-level standing (60 semester/90 quarter transferable units completed) by the end of the spring term before transfer, grade-point average in transferable courses, significant preparation for the major, completion of the English composition and mathematics requirements, and progress toward completion of the Intersegmental General Education Transfer Curriculum (IGETC), another UC campus general education requirements, or UCLA general education requirements.

Because admission requirements and selection criteria may change, transfer applicants should see [transfer admission](#) for the most complete and up-to-date information.

## Intercampus Transfers

Undergraduate students registered in a regular session at any UC campus (or those previously registered who have not since registered at any other school) may apply for transfer to another campus. Submit the UC Application for Transfer Admission and Scholarships with the required application fees. The filing periods and admission requirements are the same as those for new applicants. Students who have attended another UC campus and wish to be considered for admission to UCLA must have been in good standing when they left their previous UC campus. Intercampus transfers are not automatic; students must compete with all other applicants and must meet UCLA transfer admission requirements.

## Transfer Credit and Credit by Examination

UCLA awards unit credit to transfer students for certain courses completed at other regionally accredited colleges and universities. To be accepted for credit, the courses must be comparable to those offered by the University of California, as determined by Undergraduate Admission. All courses that meet the criteria are used in determining eligibility for admission.

To convert semester units into quarter units, multiply the semester units by 1.5. For example, 12 semester units  $\times$  1.5 = 18 quarter units.

College credit for examinations given by national testing services is generally not allowed, except for the AP Examinations given by the College Board and the International Baccalaureate higher-level examinations. See [transfer credit](#) for more information.

## International Applicants

To be considered for admission to the University of California, international students must have completed secondary school with a superior average in academic subjects and have earned a certificate of completion that would enable them to be admitted to a university in the home country.

The application for admission, copies of official certificates, and detailed records of all secondary schools attended should be submitted as early as possible after the filing period opens. This allows time for the necessary correspondence and, if students are admitted, to obtain passport visas.

## English Language Proficiency

Students whose native language is not English must have sufficient command of English to benefit from instruction at UCLA. First-year undergraduate students who have not

otherwise satisfied the Entry-Level Writing requirement and who have not taken the **Analytical Writing Placement Examination** (AWPE) by the time they enter UCLA must take the AWPE in their first term at UCLA. Results of the AWPE are reviewed to determine which credit-bearing English composition courses the student may need to complete in order to satisfy the Entry-Level Writing requirement.

## Second Bachelor's Degree

By policy, UCLA does not admit students into any undergraduate program if they already hold a bachelor's degree.

## Registration

### Registrar's Office

1113 Murphy Hall

Registration consists of paying fees and enrolling in classes. Students enroll in UCLA, and in the College or one of the professional schools.

1. Registration fees and other UCLA charges are due the 20th of each month. BruinBill accounts can be viewed through [MyUCLA](#).
2. Enrollment in classes is completed through [MyUCLA](#).

Students must complete both processes by the established deadlines to be officially registered for the term.

## Fees and Payment

Details on fee payment, enrollment procedures, and deadlines are on the [Registrar's website](#).

## Electronic Billing

BruinBill accounts are administered electronically (e-bill) through [MyUCLA](#). Financial activity is displayed for the current term, as well as account activity for the last 24 months. Students can pay their BruinBill account electronically using an electronic check with no fee; or with American Express, Discover, MasterCard, and VISA credit cards with a fee.

## Annual Undergraduate Fees

Although the exact cost of attending UCLA varies, there are some fees that all UCLA students must pay. UCLA does not charge on a per-unit basis for undergraduate students in regular academic terms.

Each entering and readmitted student is required to submit a Statement of Legal Residence. Students classified as non-residents of California must pay nonresident supplemental tuition in addition to registration fees. Legal residents of California are not required to pay nonresident supplemental

tuition. For a definition of residence and nonresidence, see [Residence for Tuition Purposes](#).

## Student Services Fee

The Student Services Fee covers student expenses such as counseling, facilities, registration, graduation, and health services. The fee is charged whether or not students make use of these services.

## Course Materials and Services Fees

The College of Letters and Science and each school are authorized to assess course materials and services fees. Some of these fees are assessed based on actual enrollment at the end of the fourth week of classes. Students are responsible for ensuring that all study list errors and omissions are corrected prior to the end of the second week. All students in a course with an approved course materials and services fee are assessed the fee, regardless of major. The fee is non-refundable. Students who are approved to add a course after the third week of instruction are required to pay the course materials and services fee for the entire term.

Fee amounts are available on the Registrar's [course fees](#) web page.

## Instructional Enhancement Initiative Fee

The **instructional enhancement initiative** (IEI) fee supports technology in undergraduate education. The fee helps support course websites and online tools, computer laboratories, and software.

## Miscellaneous Fees

Miscellaneous fees include charges for late registration fees payment. Late fees also apply if students file their study list late or do not pay BruinBill balances on time. Fees are charged if any check is returned by a bank for any reason. Charges are assessed for most petitions and other special requests. Study list, document and service, transcript-related, and degree and diploma fees are published on the [Registrar's website](#).

## Student Health Insurance Fee

All undergraduate students are automatically assessed for and enrolled in the University of California **Student Health Insurance Plan** (UCSHIP) as a condition of registration at UCLA. Continued enrollment in a qualified health insurance plan is mandatory during all registered terms. UCSHIP covers medical, vision, dental, and behavioral health services.

The UCSHIP fee is billed each term along with other UCLA fees. UCSHIP fulfills all requirements mandated for a qualified health insurance plan as defined by the University of California. The [Ashe Student Health and Wellness Center](#) is the primary health-care provider for UCSHIP, and where all nonemergency medical care is initiated.

Nonregistered students (those who withdraw, or are on approved leave or planned academic leave) may have access to UCSHIP services under certain conditions. Contact the Ashe Center to learn more.

## UCSHIP Waiver

Students may waive UCSHIP if they maintain active enrollment in a qualified health insurance plan that meets all established requirements, apply for a waiver within established deadlines each term, and correctly complete the online [waiver form](#). Students are responsible for providing complete and accurate information. Third-party individuals may not waive UCSHIP for a student. Waivers must be submitted before the term fees payment deadline. Deadlines are strictly enforced, and no refunds are issued after the deadline. For more information, see the [Ashe insurance](#) web page.

## Fees Notice

All fees are subject to change without notice by the Regents. Current academic year fees and updated information is available on the Registrar's [fees](#) web page.

## Fee Refunds

Students who formally withdraw from UCLA may receive partial refunds of fees. For more information, see [Withdrawal](#) in Policies and Regulations. Consult the Registrar's [refunds](#) web page for policy details and specific refund deadlines for each term.

## Fee Waiver Requests

Late registration, processing, and penalty fees are waivable on request in writing to the office assessing the fees only if they were incurred through the fault of UCLA, or because a student suffered sudden and debilitating injury or accident.

## Reduced Fee Programs

UCLA recognizes the need for part-time study in special circumstances. Undergraduate resident students—when properly approved by the dean of their College/school for enrollment in 10 or fewer units—may be eligible for a one-half reduction in tuition. The reduction is based on total units enrolled as of Friday of the third week of classes. Students should contact their College or school for eligibility require-

ments. Students must file a [Fee Reduction Request](#) with the academic dean's office by Friday of the second week.

Except for these qualified and approved part-time students, there is no reduction in tuition, or in student services; Ackerman Student Union; Wooden Center; student programs, activities, and resources complex (SPARC); Undergraduate Students Association fees; or other campus-based fees.

Undergraduate nonresident students pay only half the nonresident supplemental tuition fee.

Full-time UC employees may apply for a reduction of tuition and the student services fee at their campus human resources office. Students who use the part-time fee reduction may not also use the UC employee reduction.

## Class Enrollment

New students should see an academic counselor before enrolling in classes (counseling is required in the Henry Samueli School of Engineering and Applied Science). Counselors help new students select courses and formulate a schedule tailored to their academic interests or degree objectives.

[New Student Sessions](#) take new students through a step-by-step process designed to ensure that they enroll in an effective program.

## Enrollment

Students enroll in classes through MyUCLA during assigned times—called enrollment appointments—when they are allowed to enroll. The Class Planner feature allows students to create class plans prior to enrollment, share plans with counselors, and quickly add classes during their enrollment appointment. Students use the Find a Class and Enroll feature to search the [Schedule of Classes](#) and add available classes to their class plan or study list.

MyUCLA is also used to view enrollment appointments; drop classes; change grade type and number of units; exchange classes; and view the study list, which includes information on class meeting times, final examinations, classmates, grades, textbooks, and class websites. For more information, see Registrar's [study list](#) and [enrollment policies](#) web pages.

For classes that require written approval or specialized processing, students may inquire about processing steps through MyUCLA [Message Center](#).

## Study List

A study list is the record of courses in which a student is enrolled for the term. At 11:59 p.m. on Friday of the second week of instruction the study list of enrolled courses

becomes official, and all wait lists are eliminated. Students should verify their study list through MyUCLA after each enrollment transaction. Students are responsible for all courses and the grading basis as listed on MyUCLA, and cannot receive credit for courses not listed.

After Friday of the second week, most changes to the official study list can be made through MyUCLA. In some cases, a fee may apply. Some changes require an Enrollment Petition along with approval signatures.

See the Registrar's [study list](#) web page for deadlines and complete instructions.

Errors or omissions should be corrected before the College or school deadlines for changes by petition. Unapproved withdrawal from or neglect of a course entered on the study list results in a failing grade.

## Wait List

Some departments establish wait lists for classes that are full. If a student in the class drops, the seat is filled by a student on the wait list. Students can check enrollment status through [MyUCLA](#). Position on a wait list does not indicate enrollment. Students on a wait list should not assume they will be added to a class.

Wait lists are maintained through Friday of the second week of instruction unless a department deletes them earlier.

## Concurrent Enrollment

Concurrent enrollment—defined as taking courses during regular sessions for credit at UCLA and, at the same time, at a non-UC institution, including UCLA Extension—is not permitted except in extraordinary circumstances; and no credit is given for such courses unless the approval of the UCLA College or school has been obtained by petition prior to enrollment.

## Intersegmental Cross-Enrollment Program

Undergraduate students enrolled in any campus of the California community colleges, the California State University, or the University of California may enroll without formal admission in a maximum of one course per academic term at a campus of either of the other systems at the discretion of the appropriate campus authorities on both campuses on a space-available basis per the California Education Code sections 66755 and 66756 (amended by California Senate Bill 361 passed in 1999). Enrollment in pre-college courses is excluded.

UCLA students qualify for intersegmental cross-enrollment if they meet all the following requirements:

1. Complete at least one term at UCLA as a matriculated student
2. Enroll for a minimum of 6 units for the current term
3. Earn a grade-point average of 2.0 (C) for work completed
4. Pay appropriate tuition and fees at UCLA for the current term
5. Complete appropriate academic preparation as determined by the host campus
6. Have California resident status

Obtain a concurrent enrollment application from the College or school. An administration fee is charged for each academic term such enrollment is requested.

## Intercampus Visitor Program

Undergraduate students enrolled at one campus of the University of California may have the opportunity to attend another UC campus for one quarter or semester on the [Intercampus Visitor Program](#). Students should observe the application deadlines. Applications are reviewed by a student's College or school.

- **College of Letters and Science**

[Center for Academic Advising in the College](#), A316 Murphy Hall

- **School of the Arts and Architecture**

[Office of Student Services](#), 2200 Broad Art Center

- **School of Education and Information Studies**

[Office of Student Services](#), 1002 Moore Hall

- **Henry Samueli School of Engineering and Applied Science**

[Office of Academic and Student Affairs](#), 6246 Boelter Hall

- **Herb Alpert School of Music**

[Office of Student Affairs](#), 1642 Schoenberg Music Building

- **School of Nursing**

[Student Affairs Office](#), 2-147 Factor Building

- **Meyer and Renee Luskin School of Public Affairs**

[Student Services Office](#), 3250 Public Affairs Building

- **Jonathan and Karin Fielding School of Public Health**

[Office of Undergraduate Student Services](#), 16-059 Center for Health Sciences

- **School of Theater, Film, and Television**

[Student Services Office](#), 103 East Melnitz Building

## Simultaneous UC Enrollment

Undergraduate students may enroll simultaneously in courses offered by another UC campus. Eligible students must be registered (fees paid), in good standing, and enrolled in at least 12 units at UCLA. Students may simultaneously enroll in no more than one UC host-campus course not to exceed 6 units. Before attending the host campus, both campuses must give approval. Approval to enroll simultaneously on another UC campus does not guarantee credit toward specific degree or general education requirements. Application of host-campus courses to UCLA graduation requirements is determined by the College or school. Details are on the application form. Obtain applications and directions for submitting forms from the following offices:

- **College of Letters and Science**
  - [Academic Advancement Program](#), 1209 Campbell Hall
  - [Center for Academic Advising in the College](#), A316 Murphy Hall
  - [College Honors Programs](#), A311 Murphy Hall
  - [Student Athletics](#), Morgan Center
- **School of the Arts and Architecture**
  - [Office of Student Services](#), 2200 Broad Art Center
- **School of Education and Information Studies**
  - [Office of Student Services](#), 1002 Moore Hall
- **Henry Samueli School of Engineering and Applied Science**
  - [Office of Academic and Student Affairs](#), 6246 Boelter Hall
- **Herb Alpert School of Music**
  - [Office of Student Affairs](#), 1642 Schoenberg Music Building
- **School of Nursing**
  - [Student Affairs Office](#), 2-147 Factor Building
- **Meyer and Renee Luskin School of Public Affairs**
  - [Student Services Office](#), 3250 Public Affairs Building
- **Jonathan and Karin Fielding School of Public Health**
  - [Office of Undergraduate Student Services](#), 16-059 Center for Health Sciences
- **School of Theater, Film, and Television**
  - [Student Services Office](#), 103 East Melnitz Building

The application is also available on the Registrar's [simultaneous enrollment](#) web page.

## Immunization Requirements

UCLA requires that all incoming students be vaccinated against or show immunity to multiple infectious diseases consistent with guidelines of the American College Health

Association, California Department of Public Health, and U.S. Centers for Disease Control and Prevention (CDC). These requirements help protect the health of students and the entire campus community. Students submit their immunization history to the Ashe secure [patient portal](#). See [immunization requirements](#) for more information.

## Financial Support

### Financial Aid and Scholarships

A129J Murphy Hall  
310-206-0400

The priority deadline for filing all undergraduate financial aid applications for the regular academic year is March 2. Applications received after the deadline are considered late, and limited aid is offered.

The *Financial Aid Handbook* is available on the Financial Aid and Scholarships [forms and publications](#) web page.

## Application for Financial Aid

Students do not need to come from low-income families to qualify for financial aid. However, those who apply for need-based aid—including grants, loans, work study, and some scholarships—must demonstrate financial need, which is defined as the difference between the cost of attending UCLA and the amount that they and their families should be able to contribute.

Financial aid is not available for international students.

Students attending UCLA summer sessions, summer travel programs, summer institutes, or UC cross-campus summer programs and in need of financial aid must submit a summer financial aid application in addition to the Free Application for Federal Student Aid (FAFSA). Summer applications are available on [MyUCLA](#) (in the Finances and Jobs section).

To qualify for aid, students must also comply with Financial Aid [standards for satisfactory academic progress](#).

## FAFSA Free Application for Federal Student Aid

To evaluate financial need, all citizen and permanent resident students who apply for aid must provide financial information on the Free Application for Federal Student Aid ([FAFSA](#)). If students are financially independent according to the federal financial aid guidelines, their own financial circumstances are analyzed rather than those of their parents. UCLA expects that students and their families bear as much of the cost of a student's education as their circumstances permit.

The information reported on the FAFSA is used to apply for all federally funded programs, funds administered by UCLA, and the Cal Grant program administered by the California



Student Aid Commission. Loans that are not need based are also available to all students who complete the FAFSA. Students should complete the FAFSA online by March 2. To ensure that UCLA receives FAFSA information, students should enter federal school code 001315 in the appropriate search field.

## California Dream Act Application

Students who are not citizens or permanent residents but who are eligible for Assembly Bill 540 nonresident fee waivers may be eligible to qualify for scholarships, UCLA grant aid, and additional state aid if they complete a [California Dream Act application](#). The priority filing deadline for the Dream application is March 2.

## Prospective Student Scholarships

In addition to using the FAFSA and Dream Act application to apply for aid, prospective students who apply to UCLA with the UC Application for Admission and Scholarships may use the admission application to apply for undergraduate scholarships. Once admitted, students may fill out the Financial Aid and Scholarships [undergraduate scholarship application](#) to broaden their scholarship opportunities.

## Continuing Student Scholarships

Continuing students can access and submit the annual Financial Aid and Scholarships [undergraduate scholarship application](#). Students are able to submit the application year round, although early submission is advisable. Resources to help with a thorough search for [outside scholarships](#) are available from the Center for Scholarships and Scholar Enrichment.

## Types of Financial Aid

The four basic types of aid are scholarships, grants, loans, and work-study employment. The Financial Aid and Scholarships office usually offers a combination of different award types to most applicants.

Aid can be merit based—awarded on the basis of standards such as academic achievement; or need based—awarded on the basis of financial need as determined by the financial aid application. Scholarships managed by the Financial Aid and Scholarships office are based on merit and need. Grants, loans, and work study are generally need based.

## Scholarships

The undergraduate scholarship program at UCLA rewards academic excellence and assists with the expenses of an undergraduate education.

Scholarship awards range from \$100 to \$10,000 per year, and require the student to submit a new scholarship application on an annual basis. Financial need is not required for most scholarships at UCLA.

Entering students apply for scholarships on the UC Application for Admission and Scholarships. Once admitted to UCLA, new students have the opportunity to add additional information to their scholarship profile, to allow various departments across campus to consider them for other scholarships that may open throughout the academic year. Continuing students are encouraged to submit the scholarship application as early as May 1 each year. However, applications are accepted year-round.

In addition to applying for UCLA scholarships, students are encouraged to apply for [outside scholarship](#) funding through search engines.

## Regents Scholarships

One of the highest honors conferred on an undergraduate student is the Regents Scholarship, which is awarded for four years to students entering from high school and for two years to entering juniors. A UCLA faculty committee selects Regents Scholars on the basis of exceptional academic achievement and promise. Scholars receive a yearly honorarium if they have no financial need. Scholars who establish financial need by filing the FAFSA or California Dream Act application receive a combination of grants and scholarships to cover the amount of their need. Regents Scholars also receive special privileges.

## Alumni Scholarships

Since 1936, UCLA Alumni have supported Bruins through merit-based scholarships. The Alumni Scholarships Program is open to all eligible students.

Alumni scholarships are awarded through an application screened by alumni volunteers; final selection is made by Financial Aid and Scholarships. By completing one application, students are considered for several scholarships offered through the alumni program. Students need not be related to UCLA alumni to apply. Alumni scholars' benefits include getting involved in campus events and organizations, building leadership skills, access to leadership development programs and academic enrichment services, and networking with UCLA alumni.

Prospective first-year and transfer students apply through the UCLA prospective [undergraduate scholarship application](#). Applications open in early January each year and close a few weeks before admission decisions are released. Initial award offers are distributed within one to two weeks of admission decisions. Applicants who do not receive an offer

before the Statement of Intent to Register deadline may still receive one during the summer.

### Merit-Based Scholarships for Prospective Students

Financial awards for prospective first-year students range from \$6,000 to \$20,000 over four years; for prospective transfer students, \$6,000 over two years. Applicants must attend UCLA beginning the fall quarter immediately after the application cycle. To maintain eligibility, students submit a compliance agreement, complete 30 hours of renewal service, and attend an alumni event.

### Need-Based Scholarships for Alumni Scholars

Awarded alumni scholars may receive up to \$5,000 each year in need-based aid, in addition to their merit award, by submitting information on the Free Application for Federal Student Aid ([FAFSA](#)) or [California Dream Act application](#), and receiving a need-based financial aid package.

Incoming scholars receive this aid automatically, based on their FAFSA or Dream Act application. Continuing scholars apply for a Wasserman alumni grant using the continuing student [undergraduate scholarship application](#). Continuing scholars must also meet several enrollment and grade criteria.

### Merit-Based Scholarships for Seniors

The True Bruin Distinguished Senior Award (TBDSA) is awarded to deserving students who exemplify the True Bruin values of integrity, excellence, accountability, respect, and service. Recipients receive a one-time scholarship of up to \$5,000. The scholarship is open to any UCLA senior—not just current alumni scholars—who meets eligibility requirements. Seniors apply for the TBDSA using the fall [undergraduate scholarship application](#).

For more information, see [Alumni Association scholarships](#).

### ROTC Scholarships

ROTC scholarships are awarded on a competitive basis to U.S. citizens regardless of parents' income. Scholarships supply tuition, a book allowance, fees, and a tax-free monetary allowance during the academic year. Scholarship applications and information are available online for the [Air Force/Space Force](#), [Army](#), and [Navy/Marine Corps](#). Completed four-year scholarship applications should be submitted by December 31 (Air Force/Space Force and Navy/Marine Corps) or March 1 (Army) of the year preceding college matriculation. Two- (Army and Navy/Marine Corps) and three-year scholarship applications are also available, and are considered when received.

### Grants

Grants are need-based awards that do not need to be repaid as long as the student maintains eligibility. Depending on

funding availability and awarding policy, a financial aid package may include some of the grants listed here.

### Federal Pell Grants

Federal Pell Grants are based on exceptional need. They are awarded to undergraduate students who are U.S. citizens or eligible noncitizens and who have not earned a bachelor's degree. Students who file the FAFSA are automatically considered for a Pell Grant. Eligibility is determined by the federal government. Award amounts depend on a student's Estimated Family Contribution (EFC) and whether enrollment is full time or below. Awards are reduced for students enrolled less than full time.

### Cal Grants A and B

California residents who attend at least half-time are eligible to apply for a California Student Aid Commission Cal Grant award. The FAFSA or California Dream Act Application and GPA Verification Form are the official applications for these programs. Cal Grant A awards assist low- and middle-income students with tuition and fee costs. Eligibility is based on need and grade-point average. Cal Grant B awards are intended to assist low-income and disadvantaged students with living expenses, books, supplies, and transportation costs. First-year awards may also cover registration fee costs. Renewal award recipients receive registration fee assistance. New awards are limited to students who have completed no more than one full-time semester or two full-time quarters or 16 semester units of part-time study or the equivalent. Students awarded Cal Grant B receive only the stipend portion in their first year. Amounts are subject to change based on the California budget process. If tuition and school services fees increase, CAL Grant fee-paying award will increase correspondingly. Awards are reduced for students enrolled less than full time.

### University Grants

University grants offer financial assistance from state funds to eligible applicants who meet the FAFSA or Dream Act application priority deadline. Awards range from \$100 to over \$25,000 and are based on student need. All undergraduate students who are U.S. citizens, eligible noncitizens, or noncitizens eligible for AB 540 waivers and who apply on time are considered. University grant eligibility is subject to availability of funding. Grants may be exhausted before the end of the academic year. Awards are reduced for students enrolled less than full time.

### University Grants to Purchase UCSHIP

These grants are based on need, and awarded to on-time FAFSA and California Dream Act applicants to cover the cost of the University of California Student Health Insurance Plan

(UCSHIP). Students who waive UCHIP are not eligible for these grants.

## Federal Supplemental Educational Opportunity Grants

Federal Supplemental Educational Opportunity Grants (FSEOG) are awarded to undergraduate students with financial need. Awards range from \$100 to \$4,000. Recipients must be U.S. citizens or eligible noncitizens. Preference is given to Pell Grant and Cal Grant recipients. Only on-time, grant-eligible FAFSA applicants are considered.

## Loans

Loans allow students to postpone paying some of the costs of their education until they have completed school. A financial aid offer includes a long-term, low-interest loan.

UCLA makes every effort to assist students during the repayment of their obligation; but UCLA services, including registration and the release of official transcripts, are withheld if the loan becomes delinquent. Seriously delinquent accounts are referred to a professional collection agency for action.

All first-time borrowers must complete a debt management session at [student loans](#) before funds are released. Parent and graduate PLUS borrowers whose loans are approved on appeal or with an endorser are also required to complete a mandatory counseling session at [federal student aid](#) in addition to the debt management session.

All loan recipients must complete an exit interview with the [Loan Services Office](#), A227 Murphy Hall, before leaving UCLA for any reason. This interview helps students understand their loan agreement and their rights and responsibilities. If students fail to participate in an exit interview, UCLA places a hold on their academic records and registration materials. Exit information is mailed to students by the Loan Services Office after receipt of notification of separation from UCLA.

## William D. Ford Federal Direct Loan Program

### Direct Loans

Direct loans are low-interest subsidized and unsubsidized loans financed by the U.S. Department of Education.

Subsidized direct loans are awarded to undergraduate students who have demonstrated financial need. Interest rates are fixed, and adjusted annually by the U.S. Department of Education; contact Financial Aid and Scholarships for additional information. Interest accrues immediately after students graduate or drop below half-time enrollment. Repayment begins six months after students leave school or drop below half-time enrollment.

Unsubsidized direct loans are available to undergraduate, graduate, and professional students who are U.S. citizens or eligible noncitizens regardless of income. Interest accrues from the date of disbursement, but students can avoid the extra costs of accrual by making regular interest payments while in school.

### Direct PLUS Loans

Direct PLUS loans are designed to help graduate students, and parents of undergraduate students, meet the total cost of education. Graduate students and parents may be eligible to borrow up to the cost of education for the academic year, less any other financial aid received. This loan is available only to borrowers who do not have adverse credit histories. The interest rate is fixed, and adjusted annually by the U.S. Department of Education. Contact Financial Aid and Scholarships for information on current interest rates. Borrowers may want to consult a tax adviser to see if the interest is tax deductible.

### Private Loans

Private loans are available to students who have received the maximum award amounts under the Direct Loan Program and require additional funding. These loans are sponsored by banks and private lending institutions. Interest rates and repayment schedules vary. These loans must be certified by the Financial Aid and Scholarships office before funds can be disbursed. A list of private lenders that UCLA borrowers have used in the past is available at [Financial Aid publications](#).

### Short-Term Loans

Students need not be receiving financial aid to apply for a [short-term loan](#). They may borrow up to \$200 for immediate emergency needs; the amount is repayable on the 20th of the month following the month in which the loan was made. To qualify, applicants must be registered UCLA students with satisfactory loan repayment records. Applications are available from the Loan Services Office, 106 Strathmore Building.

## Work-Study Program

The [Federal Work-Study Program](#) (FWS) is intended to stimulate and promote part-time student employment, particularly for students from low-income families who are in need of earnings to pursue their studies.

Under FWS, the federal government pays a portion of the student's wage and the employer pays the balance. Through this program, students may work up to 20 hours per week for UCLA, government agencies, or public and private nonprofit agencies. Students employed through FWS supply essential services to UCLA and community, and have the opportunity to hold jobs that may relate to their

educational objectives or enable them to gain valuable work experience.

## Majors and Degrees

Students may choose from 141 majors in a wide variety of disciplines offered through the undergraduate degree programs of the College of Letters and Science; Henry Samueli School of Engineering and Applied Science; Herb Alpert School of Music; Jonathan and Karin Fielding School of Public Health; Meyer and Renee Luskin School of Public Affairs; School of the Arts and Architecture; School of Education and Information Studies; School of Nursing; and School of Theater, Film, and Television. For a complete list of major programs and degrees, see [Majors and Degrees](#).

## Planning a Major

New students should obtain academic counseling before enrolling in classes at UCLA. Counselors can help new students formulate degree objectives based on interests, abilities, and career goals. As students begin to decide on a major, counselors can help them start fulfilling College or school requirements as well as the department requirements necessary for completion of the degree program.

## Declaring a Major

Regulations and procedures for declaring a major vary for the College and each school. Students in the College of Letters and Science do not need to declare a major in their freshman year, and can attend with an undeclared major until the end of their sophomore year. Certain schools require students to choose a major when applying for admission, or require early declaration. Check specific policies for declaration with the school or department adviser.

All students must declare a major by the beginning of their junior year (90 quarter units). To declare a major, obtain a Petition to Declare a Major at the College or school office. There is no fee for the petition.

## Changing Majors

Changing majors requires the approval of the department of the new major. Changing majors involving a change in College or school requires the approval of the College or school. To change majors, obtain a [Program Change Petition](#) online or at the department office.

## Capstone Majors and Programs

Capstones are designed to be the culmination of a UCLA undergraduate experience. Capstones range from yearlong sequences of courses or tutorials to a single seminar, and

from honors theses to comprehensive seminar projects or internships. They may be based in tutorials, laboratories, advanced courses, or seminars, and may include either individual or team-based projects. Requirements vary among the college and schools. Capstone majors and programs are identified throughout [Curricula and Courses](#). See [capstone initiatives](#) for more information.

## Capstone Options

Four types of capstone options represent different expectations for student engagement and independence. Some students might complete capstones of more than one type. For example, having completed an advanced seminar, a student might decide to engage in independent study or an honors project.

### Honors Thesis or Project

In a multi-term program, students conduct independent research, laboratory, writing, or other work guided or mentored by faculty. The program culminates in a formal thesis or project that can be granted department honors.

### Individual Major

Highly motivated students who find that no single major accommodates their specific interest in a given subject may propose their own major. Proposals are designed with faculty guidance and sponsorship, and thoroughly examined for cogency, completeness, and academic merit.

### Individual Project

Students may propose an individual project or paper as the culmination of an upper-division contract course they create with their instructors.

### Senior Seminar or Advanced Project

Students may enroll in an advanced senior seminar or project course that requires a comprehensive term paper, performance, or product design.

## Learning Outcomes

Learning outcomes describe what students should know, be able to do, and value by the end of their undergraduate educational program. There are four types of outcomes: attitude/value, behavior, knowledge, and skill. They define degree-program goals through focus on student experience and achievement, and allow faculty to evaluate whether students have mastered those goals. Each degree program establishes its own learning outcomes, develops methods for assessment, and uses the results to enhance and improve student learning. Outcomes also help inform prospective and current students about a program's

purpose and value. See [learning outcomes](#) for more information.

## Degree Requirements

As soon as they are accepted for admission to UCLA, new students should learn the requirements necessary to receive a bachelor's degree and begin planning an appropriate program of study. All undergraduate students must satisfy UC requirements, College or school requirements, and department requirements.

## University Requirements

The University of California has established two requirements that all undergraduate students must satisfy in order to graduate: Entry-Level Writing or English as a Second Language (ESL), and American History and Institutions. It is each student's responsibility to see that these requirements are fulfilled.

### Entry-Level Writing

Because proficiency in English composition is so important to successful performance in many courses, Entry-Level Writing is the only requirement for graduation that students must satisfy before entering UCLA or during their first year in residence. They may meet this requirement by one of the following methods:

- Score 30 or better on the ACT, English Language Arts, or 63 or better on the ACT, English Plus Reading
- Score 680 or better on the SAT, Evidenced-Based Reading and Writing
- Score 3, 4, or 5 on the College Board Advanced Placement Examination in English Language and Composition, English Literature and Composition, Research, or Seminar
- Score 5, 6, or 7 on one of the International Baccalaureate Higher Level English A Examinations, or score 6 or 7 on one of the International Baccalaureate Standard Level English A Examinations
- Before enrolling at UCLA, present transfer credit for an acceptable college-level course in English composition (passed with a grade of C or better) at another institution
- Receive a Writing I placement on the University of California Analytical Writing Placement Examination (all freshmen from California high schools should have taken the examination during the month of May before they enrolled; others take an examination at UCLA early in their first term)

If students do not meet the requirement in one of the ways described above, Academic Senate regulations require them to enroll in a course determined by performance on the Analytical Writing Placement Examination as early as possible during their first year in residence. Each course must be taken for a letter grade and passed with a grade of C or better. Students receiving a final grade of C– or worse must repeat the course during their next term in residence.

The Entry-Level Writing requirement must be satisfied before enrolling in any course that satisfies the Writing I requirement (English Composition 3, 3D, 3DX, 3E, 3SL). For more information, see [Entry-Level Writing](#).

### English as a Second Language

First-year undergraduate students whose first language is not English and who have not otherwise satisfied the Entry-Level Writing requirement must take the [Analytical Writing Placement Examination](#) (AWPE) either by the time they enter UCLA or during their first term. Results of the AWPE are reviewed to determine whether the student must take designated English composition courses in order to satisfy the Entry-Level Writing requirement. Neither the Test of English as a Foreign Language (TOEFL) nor any other English proficiency test is accepted in lieu of the AWPE. Students may take the AWPE once only; unauthorized retakes result in an invalid score. Students must begin taking courses during their first term in residence at UCLA, and must complete each course in sequence with a grade of C or better. All units are applied toward graduation, but cannot be applied toward general education requirements.

Transfer students whose native language is not English and who have completed the Writing I and Writing II equivalent courses at their transfer institution may still be held for the UCLA English as a Second Language (ESL) requirement at the discretion of UCLA Undergraduate Admission. This includes, but is not limited to, all students who received a grade below B in either Writing I or Writing II equivalent courses at their community college. Transfer students held for the ESL requirement must take the [English as a Second Language Placement Examination](#) (ESLPE) either before or during their first term at UCLA to determine whether they must complete one or more English composition courses. Neither the Test of English as a Foreign Language (TOEFL) nor any other English proficiency test is accepted in lieu of the ESLPE. Students may take the ESLPE once only; unauthorized retakes result in an invalid score. Students must begin taking courses during their first term in residence at UCLA, and must complete each course in sequence with a grade of C or better. All units are applied toward graduation, but cannot be applied toward general education requirements.



## American History and Institutions

The American History and Institutions requirement is based on the principle that a U.S. citizen or resident attending an American university should understand the history and public institutions of the U.S. under the federal and state constitutions. Candidates for a bachelor's degree must satisfy the American History and Institutions requirement by one of the following methods:

- Complete a year-long course in American history or American government, or a one-year combination of both, in high school with an average grade of B or better
- Complete any one of the following UCLA courses with a grade of C or better, or a grade of Passed:

African American Studies M150D, M158A, M158B, M158C, M158E

Asian American Studies M171D

Chicana/o and Central American Studies M159A, M159B, CM182, M183

Economics 183

Gender Studies M147B, M147D

History 12A, 12B, 13A, 13B, 13C, 138A, 138B, 138C, 139A, 139B, 140A, 140B, 140C, 141A, 141B, 142A through 142D, 143A, 143B, 144, M144C, 145A, 145B, 146A through 146D, M147C, M147D, 149A, 149B, M150A through M150E, M151A, M151B, M151C, 152, 153, 154, M155, 179C

Political Science 40, 114A, 114B, 140A, 140B, 140C, 142A, 143A, 145B, 145C

Study of Religion M142C

- Equivalent courses completed in UCLA Extension or at another college institution, and accepted by the Board of Admissions, may be used to fulfill the requirement
- Present a satisfactory result of the requirement, by examination, as administered at another college or university within the state
- Score 500 or better on the SAT Subject Test in U.S. History
- Score 3, 4, or 5 on the College Board Advanced Placement Test in American History

Candidates for an instructional credential, but not for a degree, must take one of the following courses: History 143A, 143B, Political Science 145B, or 145C.

Students attending UCLA on an F-1 or J-1 visa may petition for exemption from this requirement by showing proof of temporary residence in the U.S.

## College or School Requirements

The College and each school with undergraduate programs establish their own degree requirements. These generally include a unit requirement that defines the total number of units to be completed; scholarship requirement that defines a minimum grade-point average; residence requirement that defines the amount of study that must be

undertaken in residence at the UCLA campus; and course requirements that may include general education courses, reading and composition courses, foreign language courses, and core courses for the field of study. See [College and Schools](#) for details on requirements set by the College and each of the schools.

## Department Requirements

Each department or interdepartmental program sets its own degree requirements in addition to those established by the College or school. Department requirements generally include preparation for the major, which are lower-division courses designed to prepare students for advanced study; and the major, which are upper-division course requirements. Requirements for each department are listed in [Curricula and Courses](#).

## Degree Policies

Students are responsible for degree policies and regulations as described under [Degrees](#) in Policies and Regulations.

## Undergraduate Research

### Undergraduate Research Centers

The Undergraduate Research Centers (URC) assist students in the humanities, arts, social sciences, and behavioral sciences ([URC Humanities, Arts, and Social Sciences](#), A334 Murphy Hall) and in science, engineering, and mathematics ([URC Sciences](#), 2121 Life Sciences) by supporting scholarly, critical, and creative research. The centers offer mentoring and tutorials, manage the Student Research Program (SRP), and administer summer research programs, academic year research programs, research stipends, and scholarships. They also sponsor two student-run publications—the *Undergraduate Science Journal* and the *Aleph* humanities and social sciences journal; organize campuswide conferences and events; and coordinate the Student Research Forum that promotes a broader and deeper understanding of university research, and helps entry-level student researchers define their place in the larger research community. See [undergraduate research](#) for more information.

### Student Research Program

Administered by each Undergraduate Research Center, the Student Research Program (SRP) offers undergraduates, especially lower division and first-year transfer students, opportunities to become actively involved in the UCLA research community. Working with faculty members on

research projects, SRP students gain valuable research training and experience, as well as preparation for advanced undergraduate work and graduate school. Students enroll in course 99 in any department and receive 1 unit of course credit for each 30 hours of research completed during the term. Science, engineering, and mathematics students should see [sciences SRP](#). Humanities, arts, social sciences (HASS), and behavioral sciences students should see [HASS SRP](#).

## Undergraduate Research Fellows Program

The Undergraduate Research Fellows Program (URFP) is available on a competitive basis and by application for undergraduate students seeking entry-level research experience. Funded students typically participate in two terms of research (winter and spring quarters) through SRP. Science, engineering, and mathematics students should see [sciences URFP](#). Humanities, arts, social sciences (HASS), and behavioral sciences students should see [HASS URFP](#).

## Undergraduate Research Scholars Program

The Undergraduate Research Scholars Program (URSP) offers scholarships from foundations, industry, and individual donors to continuing students (junior-level standing and higher). Applicants must have a strong commitment to research and must complete an honors thesis or a comprehensive independent studies project during the senior year. Applications are accepted during spring quarter for the following academic year. Science, engineering, and mathematics students should see [sciences URSP](#). Humanities, arts, social sciences (HASS), and behavioral sciences students should see [HASS URSP](#).

## Academic Research Courses

All academic departments offer undergraduate research courses that allow students to obtain academic credit for their research experiences. Students enrolled in the courses are often upper-division students with Student Research Program experience. Department requirements for credit vary, but all departments require a research proposal to enroll in upper-division tutorial courses and a research report to receive credit when the research project is completed. Senior students working toward honors or highest honors in many majors must complete a two-term (or more) research project that culminates in an honors thesis. Arrangements must be made with a faculty mentor before students can register for the course. See the undergraduate adviser in the department of interest for more information.

# Internships and Service Programs

Rewarding opportunities in the form of internships, community service work, industry and business positions, local, national, and international programs, and community-based teaching furnish students with insights into a range of professional fields and the chance to apply academic theories firsthand.

## Career Center

### Internship and International Opportunities

The UCLA Career Center, located in the Strathmore Building, offers support researching and finding internships, fellowships, and other experiential learning opportunities in the U.S. and abroad. Career educators are available to meet with students in person or virtually for one-on-one support regarding a variety of topics. These include career and major exploration, professional document review, interview preparation, as well as graduate and professional school consideration and application assistance. Appointments can be made on [Handshake](#), the Career Center's online job and internship platform. In addition, UCLA career peers advise students on resume and cover letter development and search techniques to identify relevant employers and programs through 15-minute drop-in sessions, available in person or virtually. Many helpful resources are featured [online](#). Opportunities for current students and recent graduates include teaching or volunteering abroad, research or fieldwork, and internships in almost every occupation or industry.

### UCDC Summer in Washington Internship Program

The [UCDC Summer in Washington Internship Program](#) offers housing to students from all majors who have at least sophomore standing and would like to spend the summer in Washington, DC gaining work experience through an internship. Opportunities are available with elected officials, government agencies, public interest groups, international organizations, media, and a wide range of public and private sector organizations. Through registering in the M195DC course, the program offers advice on searching and applying for internships. There is also the opportunity to apply for a scholarship with the Career Center to help cover some of the costs for the program.

## Quarter in Washington, DC

The [Quarter in Washington Program](#) (UCDC) program offers an exciting opportunity to combine UC courses with field experience.

Students live at the [UC Washington Center](#) for up to 11 weeks, dividing their time between coursework and a part-time internship placement. Students choose from a variety of UCDC seminars with topics relevant to Washington, such as Congress or the Supreme Court. At least one optional additional course is usually offered each quarter. All courses take advantage of the unique resources of Washington for study and research.

UC Washington Center administrators help students find an internship. Placements have included C-SPAN, the Human Rights Campaign, the Department of Justice, Smithsonian museums, the Wilson Center, and various members of Congress.

## Reserve Officers' Training Corps

The University of California, in accordance with the National Defense Act of 1920 and with the concurrence of the Regents, offers courses and programs in military training. This voluntary training allows students to qualify for an officer's commission in the Air Force, Army, Marine Corps, Navy, or Space Force while completing their college education. ROTC courses are offered by three departments within the College of Letters and Science: [Aerospace Studies](#) (Air Force and Space Force), [Military Science](#) (Army), and [Naval Science](#) (Navy and Marine Corps). Equipment, uniforms, and textbooks are supplied. The programs supply a monthly stipend to eligible students while on contract; and additional financial benefits, including tuition and fee scholarships, to qualified students. Individual programs are described in [Curricula and Courses](#).

## Teaching Opportunities

Exciting teaching programs prepare undergraduate students for careers in teaching or education and allow them to serve in classrooms in the Los Angeles area. Many teaching opportunities are offered in conjunction with the School of Education and Information Studies (SE&IS), which helps coordinate programs leading to various instructional credentials or to graduate study.

## Education and Social Transformation Major

In the [Education and Social Transformation major](#), Students analyze current issues in education through a social justice lens and emerge as effective advocates for positive

change. See the [program description](#) in Curricula and Courses.

## Education Studies Minor

The [Education Studies minor](#) offers a sequence of courses designed to introduce students to key issues, research, and policies in education. Students participate in a range of seminar and practicum courses to fulfill program requirements. The program office is in 1002 Moore Hall. See the [program description](#) in Curricula and Courses.

## General Chemistry Major

The General Chemistry major is for students who want to acquire considerable chemical background in preparation for careers in secondary school chemistry teaching. The major may be appropriate for some students who plan to enter other chemistry-related careers that involve teaching chemistry to nonchemists. See the [program description](#) in Curricula and Courses.

## Mathematics Education Coursework

The Mathematics Department offers a portfolio of six courses that help students develop a professional understanding of K-12 mathematics content, investigate current issues and research in the teaching of mathematics, and gain clinical practice hours required for a California Single Subject Teaching Credential in Mathematics.

## Math for LA

[Math For LA](#) is an effort of the Mathematics Department's Curtis Center to improve the mathematics experiences of Los Angeles K-12 students. Its offerings include two credential pathways, a major, a minor, and a sequence of mathematics education courses (73XP, 74XP, 75XP, 105A, 105B, and 105C).

## Credential Pathways

Two pathways are offered jointly with the School of Education and Information Studies. Each leads to a California Single Subject Teaching Credential in Mathematics. In the Integrated Pathway, students complete courses in education and mathematics during the junior and senior years to earn a California teaching credential upon graduation. In the Joint Math Education Pathway, students complete courses in education and mathematics during the senior year. They complete additional education courses the following summer to earn a California teaching credential. Over the following academic year, they complete graduate courses to earn a master's degree in Education.

For more information, contact [Julian Rojas](#), or visit The Curtis Center in 5602 Mathematical Sciences Building between 8 a.m. and 4 p.m. Mondays through Wednesdays.

## Mathematics for Teaching Major

The Mathematics for Teaching major is primarily designed for students preparing for careers in instruction, curriculum development, and assessment of high school mathematics. It is similar to the Mathematics major but has courses devoted to training in high school mathematics instruction. The major offers exceptional training in mathematics as well as in the pedagogy and content needed to teach high school mathematics, as recommended by the Conference Board of Mathematical Sciences. Students who complete the major also satisfy the California Subject Matter Competence requirement for a Single Subject Teaching Credential in Mathematics.

## Mathematics for Teaching Minor

The Mathematics for Teaching minor is designed for students who are interested in K-12 mathematics education. The minor provides recognition for completion of mathematics education coursework that is essential for working in secondary school instruction, curriculum development, or assessment.

## Science Education Minor

The [Science Education minor](#) offers preparation for careers where teaching is an important component, including middle and high school, community college, university, or other science-related outreach careers. Students who wish to become middle or high school science teachers or who plan to teach as graduate students in their disciplines are the primary focus. The minor supplies the broad general science background included in California state subject matter credential examinations, education coursework, field experiences in the development, management, and teaching of science laboratory instruction in grades 7 through 12, and UCLA-based teaching practicums in lower-division science laboratory. See the [program description](#) in Curricula and Courses.

## Science Teacher Education Program

The [Science Teacher Education Program](#) (STEP), cosponsored by the College of Letters and Science and the School of Education and Information Studies, allows science majors to observe and participate in classrooms in schools in the Los Angeles area and to begin teacher education courses in their senior year. Students earn a preliminary teaching credential the summer after the bachelor's degree is received

and a master's degree in education the following academic year. For details, contact [Arlene Russell](#).

## Teacher Education Program

The [Teacher Education Program](#) allows students to obtain both a Master of Education degree and a preliminary multiple or single subject credential in a full-time, two-year program that supplies clinical classroom experience and a full-year urban teaching residency.

## UCLA Cal Teach

The [UCLA Cal Teach program](#) encourages and supports undergraduate students who are interested in exploring K-12 mathematics and science teaching as a potential career. Courses include 20 hours of observation, participation, and assisting in K-12 schools, and seminars to support those field experiences.

## Visual and Performing Arts Education Minor

The [Visual and Performing Arts Education](#) (VAPAE) minor in the School of the Arts and Architecture is an interdisciplinary and interdepartmental series of courses designed to introduce students to key issues and methodologies in the field of arts education for multiple publics and to a broad range of careers in the arts, including K-12 teaching, museum education, community arts education, creative arts therapies, and arts advocacy.

The arts education teaching sequence, an important component of the minor, consists of three courses in which selected undergraduate students explore core issues in arts education, creativity, and social justice. Students are assigned to K-12 classrooms in the Los Angeles area where they first observe and then implement an eight-week sequential arts-based lesson plan under the supervision of the guiding teacher.

Students are able to focus their studies on the following areas: strategies and methods in teaching in the arts, arts in the community, teaching the arts in non-traditional settings and with special populations, social-emotional learning in the arts, and interdisciplinary arts training.

Upon completion of the minor, students are eligible to be hired to teach in VAPAE [Afterschool and Arts Enrichment Programs](#) that take place at school and community sites in Los Angeles. The program office is in 2101 Broad Art Center. See the [program description](#) in Curricula and Courses.

## Center for Community Engagement

The [Center for Community Engagement](#) creates opportunities for UCLA faculty, students, and staff to collaborate with community partners to build an equitable and just society through community-engaged research, teaching, and community programs. The center supports faculty, students, and community partners to create successful community-engaged courses and research, credit-bearing internships, and AmeriCorps programs. The center is home to the undergraduate minor in Community Engagement and Social Change, and such signature student scholarship programs as Astin Community Scholars and Changemaker Scholars. The office is in A265 Murphy Hall.

## University of California Center Sacramento

The [University of California Center Sacramento](#) (UCCS) is operated by UC Davis. UCCS advances the university's mission of teaching, research, and public service with an integrated program to train future state leaders, to address challenging public-policy issues confronted by the nation and state, and to carry out the university's mandate to assist state government. UCCS places students in intensive one-term policy-related internships throughout the state Capitol building and in the Sacramento policy community. Participating students take a full term's worth of credit-bearing courses in addition to their internships. UCCS is open to all majors. For full eligibility criteria and application information, see the [UCCS admissions](#) web page.

## Lower-Division Seminar Programs

### Collegium of University Teaching Fellows

The [Collegium of University Teaching Fellows](#) (CUTF) offers outstanding graduate students the opportunity to develop and teach lower-division seminars in their area of expertise. These unique courses cover all areas, from the humanities to the life, physical, and social sciences. Undergraduate students take courses that are at the cutting edge of a discipline and benefit from a small-seminar environment. General education credit is granted for most seminars, which are offered in winter and spring quarters only. Enrollment is limited.

## Fiat Lux Seminar Program

The [Fiat Lux Seminar Program](#) is a cornerstone of the innovative undergraduate curriculum at UCLA. These seminars provide students and faculty with small-group settings to engage in meaningful discussions on a range of topics. Students receive 1 unit of academic credit (Passed/Not Passed grading), and faculty members from across campus have the opportunity to share with undergraduates their areas of intellectual passion and expertise. True to the University of California's motto *Fiat Lux—Let There be Light*, these seminars illuminate the many pathways of discovery. For details about seminar offerings each term, see the [Schedule of Classes](#).

## Honors Collegium

[Honors Collegium](#), a series of interdisciplinary honors courses, offers a unique educational experience where students learn how to think critically and creatively and how to communicate effectively. Courses emphasize the breadth of an interdisciplinary approach to learning and focus on small classes and individual attention.

## Undergraduate Student Initiated Education

[Undergraduate Student Initiated Education](#) (USIE) is an innovative program designed to provide a select group of juniors and seniors with the opportunity to develop and facilitate, under faculty supervision, a lower-division seminar for their peers.

The application and selection period is during spring quarter. During the fall and winter quarters (of the next academic year), selected student facilitators work closely with their faculty mentors in two 1-unit independent study courses (one each quarter) focused on the content-area of their proposed seminar. In addition, student facilitators enroll in two 1-unit pedagogy seminars (one each quarter) in which various facilitation strategies and techniques are discussed in preparation for leading their own spring seminar.

Through the independent study courses and pedagogy seminars, student facilitators develop a formal syllabus for their spring seminars for review and approval by the USIE Faculty-Student Advisory Committee and the Faculty Executive Committee (FEC).



## Academic Advising and Support

Academic advising and support is available from student, staff, and faculty advisers; and through student services, tutorials, and other special programs.

### New Student Academic Programs

UCLA [New Student Academic Programs](#) is designed to serve the educational planning, academic advising, matriculation, and adjustment needs of all entering UCLA undergraduates. The goal is to ensure that all new UCLA students and their families begin their journeys at UCLA with a comprehensive, positive introduction to Bruin life. The first step begins during New Student Sessions, where new student advisors work in small groups to provide an introduction to UCLA and its world-renowned academic programs, extensive services, and rich traditions. Individual counseling sessions help students adjust to life at UCLA and fulfill the advising requirements of the College or school. Sessions for family members are also offered.

New Student Sessions are three-day, two-night, residence hall live-in programs for first-year students; and one-day programs for transfer students. There is a fee for participation.

New Student Academic Programs also offers the College Summer Institute (CSI), a seven-week residential program in which new first-year students get a head start on graduation requirements through UCLA summer courses.

During the academic year, additional programs offer academic advising and support. For more information, contact the New Student Academic Programs office in 201 Covell Commons or through [Message Center](#).

### College and School Advisers

The College and each school and academic department at UCLA have a staff of academic counselors and advisers to help students plan their academic program, monitor their progress toward the bachelor's degree, provide information about degree requirements, and assist with academic problems.

Students in the College are served by one of four counseling units: Academic Advancement Program, College Academic Counseling, Honors Programs, or Student Athletics. Undergraduates in the seven professional schools are served by their respective student services offices. See the Center for Academic Advising in the College's [undergraduate advising units](#) web page for a list of College and school advising office addresses. To contact a departmental adviser, see the individual department in [Curricula and Courses](#); a list of [department websites](#) is available online.

## Academic Advancement Program

[Academic Advancement Program](#) (AAP) is the largest university-based student diversity program in the U.S. Its programs for first-generation, low-income, and historically underrepresented students help ensure their academic success, retention, and graduation; and support their pursuit of academic excellence. AAP aims to increase member entrance to graduate and professional schools; develop academic, political, scientific, economic, and community leadership; and promote UCLA access and academic success for diverse high school and community college students across California.

Students are eligible for AAP if their academic profiles and personal backgrounds may impact their university experience and their retention and graduation from UCLA. Students are also eligible if they are part of any federally funded program that requires counseling, tutoring, or mentoring. For more information, contact AAP [New Student Programs](#), 1230 Campbell Hall.

### Center for Community College Partnerships

The [Center for Community College Partnerships](#) (CCCCP) develops academic partnerships between California community colleges—particularly those with large underrepresented populations—and UCLA, to improve student competitiveness for UC admissions and increase the transfer admission pool diversity. Its Scholars Program offers mentoring and summer programs to help prepare students for transfer to a four-year school.

### Graduate Mentoring Programs

[Graduate Mentoring](#) programs (GM) offers AAP undergraduate students one-on-one mentoring in preparation for graduate studies and professional school admission. It also offers workshops on graduate school topics. Appointments are with and workshops are led by current graduate and professional school student mentors.

### Arts Initiative Program

The [program](#) focuses on integration of the arts into different scholarly fields. AAP students engage in interdisciplinary research involving fine, commercial, and performing arts with an emphasis on connections to social justice issues.

## Carter-Huggins Community Development and Social Justice Program

The **Carter-Huggins Community Development and Social Justice Program** (CDSJ) assists AAP students interested in pursuing graduate study in public health, public policy, social welfare, and urban planning. Students conduct applied research projects while interning at community-based social justice and equity organizations.

## Educators for Tomorrow

The **Educators for Tomorrow** (EFT) program assists a new generation of socially conscious educators. AAP students participate in community service programs, internships, and research related to all facets in the field of education.

## High Achievement in Math and Science Program

The **High Achievement in Math and Science Program** (HighAIMS) supports AAP students in their chosen health science professions. It offers career and academic guidance, and includes graduate school preparation, workshops, and information sessions.

## McNair Research Scholars Program

The two-year **program** prepares AAP students for PhD programs. Students conduct an independent research project and participate in a research-intensive summer program.

## Peer Learning

AAP **Peer Learning** offers numerous academic support sessions with peer learning facilitators (PLFs). Mainly upper-division undergraduates, PLFs are academic role models who have successfully completed courses in the mathematics, sciences, humanities, and social sciences disciplines. PLFs facilitate individual and small-group sessions designed to help AAP students recognize their own intellectual authority by encouraging them to engage with course materials actively, critically, and independently.

## Research, Assessment, and Evaluation

The **Research, Assessment and Evaluation** (RAE) unit maintains data on the Academic Advancement Program and AAP students while designing and implementing assessments and evaluations that examine their progress and outcomes. AAP RAE also provides AAP students with the opportunity to engage independently and collaboratively with institutional research projects that can inform real world practices and decision-making within the program from data cleaning, coding, and visualization to analyses and report writing.

## Research Rookies Program

The **program** gives second-year AAP students the opportunity to develop entry-level research projects in humanities and social sciences. Over two academic terms, students gain valuable knowledge and experience regarding research.

## Scholarships

Eligible AAP students may receive merit and need-based scholarships through established financial aid programs. AAP also awards scholarships; see **scholarships** for help with the application process.

## Summer Graduate Preparation Program

Over six weeks during summer session, students prepare to apply to graduate or professional school. Students draft their application materials with a graduate student mentor. The program is not unit or credit bearing.

## Freshman/Transfer Summer Program

This seven-week residential **summer program** prepares incoming AAP freshman and transfer students for the academic rigors of UCLA. Students build an academic support network that supplies interaction and broadens life experiences. Students enroll in three UCLA courses that fulfill graduation requirements, and get support in small groups or individual sessions from teaching assistants and peer learning facilitators.

## UndocuBruins Research Program

The **program** prepares undocumented AAP students for graduate school. Students conduct independent research projects related to issues regarding immigration and immigration policy. Special emphasis is given to resources that best serve undocumented students and their communities.

## Vice Provost Initiative for Precollege Scholars

The initiative partnership between UCLA and the Los Angeles and Pasadena school districts prepares historically underrepresented students in 11 high schools to become competitively eligible for admission to UCLA and other flagship universities. The **Vice Provost Initiative for Precollege Scholars** (VIPS) offers peer mentoring, summer programs, Saturday academies, and research opportunities to scholars and their families.

## Academic Excellence

Eligible students receive the following honors and awards in recognition of academic achievement:

## Dean's Honors List

The School of the Arts and Architecture; School of Education and Information Studies; Henry Samueli School of Engineering and Applied Science; Herb Alpert School of Music; Jonathan and Karin Fielding School of Public Health; Meyer and Renee Luskin School of Public Affairs; School of Nursing; School of Theater, Film, and Television; and the deans of the five divisions in the College of Letters and Science award Dean's Honors to deserving students each term. Honors are based on the grade-point average attained within a specified number of units. Contact the College or school for more information.

## Latin Honors

The College and schools award Latin honors according to overall grade-point average at graduation. To be eligible students must have completed at least 90 (98 for the School of Nursing) UC units for a letter grade. The levels of honors are *summa cum laude*, *magna cum laude*, and *cum laude*. Specific requirements vary for each level and are detailed in [College and Schools](#). See the Registrar's [honors](#) web page for the most current calculations of Latin honors.

## Departmental Honors

In the College of Letters and Science, departmental honors and highest honors are awarded at graduation on the recommendation of a student's major department, based on successful completion of a departmental honors program. Students should contact their department for its requirements.

## Departmental Scholar Program

Departments in the College of Letters and Science and each school—except the Herb Alpert School of Music; School of Nursing; and School of Theater, Film, and Television—may nominate exceptionally promising juniors and seniors as [Departmental Scholars](#) to pursue bachelor's and master's degree programs simultaneously. Nominations are submitted to the College or school dean for recommendation to the dean of the Division of Graduate Education. Students interested in becoming Departmental Scholars should contact their departments well in advance of application dates for graduate admission; see the [deadlines](#) web page.

## Honor Societies

### Alpha Lambda Delta and Phi Eta Sigma

[Alpha Lambda Delta](#) and [Phi Eta Sigma](#) are national honor societies that recognize high-achieving first-year students.

Membership is based solely on academic achievement and is by invitation only. To be eligible, students must have a 3.5 grade-point average with 12 graded UC units in the first quarter of their first year at UCLA, or a cumulative 3.5 GPA at the end of the first year. For more information, send e-mail to the [Office of the Dean of Students](#).

## Golden Key

[Golden Key](#) is an international interdisciplinary academic honors organization dedicated to excellence. Students qualify on the basis of objective academic criteria. To be eligible, students must have a UC grade-point average of 3.6 after their first quarter at UCLA; and have sophomore, junior, or senior standing at the time of invitation.

The society recognizes and encourages scholastic achievement and excellence in all undergraduate fields of study. It unites with collegiate faculties, staff, and administrators in developing and maintaining high standards of education, and promotes scholastic achievement and altruistic conduct through voluntary service. Invitations are issued annually. For more information, send e-mail to the [Office of the Dean of Students](#).

## Mortar Board

[Mortar Board](#) is a national honor society for college seniors that recognizes outstanding and continual scholarship, leadership, and service to the campus community.

To be considered for membership, candidates must have completed 90 units and must have attained at least a B average or be in the highest 35 percent scholastically of the junior class, whichever is higher. [Applications](#) are available online early in spring quarter and are due by mid-April. Approximately 35 members are selected each spring by the outgoing chapter. For more information, contact the Student Organizations, Leadership, and Engagement (SOLE) office, 105 Kerckhoff Hall.

## Phi Beta Kappa

[Phi Beta Kappa](#) is a national academic honors society in the humanities, liberal arts, and sciences, founded at the College of William and Mary in 1776. Membership is conferred for high scholastic standing and is determined by vote of the UCLA Eta Chapter Committee on Members in Course according to scholarship records. Students do not apply for Phi Beta Kappa membership.

At UCLA, only graduating seniors and selected juniors are elected to membership. The annual election is held in late April, with the initiation ceremony in June. At present, the minimum grade-point average considered is 3.85 (for 140 or more UC units); the minimum number of UC units consid-

ered is 80 (students at the 80-unit level must have at least a 3.90 GPA).

A reasonable distribution of courses in the humanities and sciences is also required, as is a foreign language course at the intermediate level (one level above the UCLA language requirement for graduation) or above. A Passed grade is computed approximately as a B, depending on number of courses taken and graded units. Elected students are notified through MyUCLA.

For more information, see the [website](#), or contact [Phi Beta Kappa](#) in the UCLA [Center for Scholarships and Scholar Enrichment](#), 233 Covell Commons.

## Tau Sigma

**Tau Sigma** is a national honor society that recognizes the high academic achievement of first-year transfer students. To become a member, UCLA students must have a 3.5 grade-point average or better during their first term at UCLA after transferring either from a community college or a four-year institution (summer quarter not typically included). Invitations are issued after each regular academic term.

Tau Sigma honors the large UCLA transfer community for its academic achievement. The society also holds leadership, networking, and social activities. For more information, send e-mail to [Tau Sigma](#) or contact the Office of the Dean of Students.

# Graduate Study

Graduate students at UCLA benefit from—and contribute to—the resources of one of the country’s outstanding research universities. A distinguished faculty committed to research and teaching; an extensive library system ranked among the best in the nation; and excellent research centers, institutes, and laboratories in virtually every major discipline all offer extraordinary opportunities for graduate endeavor.

Graduate training at UCLA takes place in classrooms, laboratories, and libraries; in specialized seminars; through independent research; and in teaching experiences. Graduate education is enriched by several hundred postdoctoral and visiting scholars from other universities who engage in research and, in some instances, teaching at UCLA every year. This unique research environment promotes the quality of original work and study that is the hallmark of graduate education.

The degree of Master of Arts or Master of Science, or one of several professional degrees such as Master of Business Administration, is intended to develop mastery of a field and prepare students for the practice of a profession. The doctorate degree (PhD, EdD, and so forth) is designed to prepare students for creative activity and original research, often in association with college or university teaching.

## Shared Governance

Graduate degree programs, courses, and requirements are governed and administered by the Graduate Council, Division of Graduate Education, College and school faculty executive committees, and department advisers.

## Graduate Council

The **Graduate Council** is a standing committee of the UCLA Academic Senate. The council is responsible for the establishment of UCLA policy and standards for master, doctorate, and graduate professional degree programs (other than those in law, medicine, and dentistry) and postdoctoral scholars; the approval, review, and monitoring of graduate degree programs; and recommendations about fellowships and assistantships. It also recommends to the systemwide Coordinating Committee on Graduate Affairs programs that lead to new degrees; and delegates authority to Division of Graduate Education, and College and school faculty executive committees.

## Division of Graduate Education

The UCLA **Division of Graduate Education** administers policy established by the Academic Senate and its Graduate Council. It oversees graduate recruitment and admissions (including recruitment of a diverse student body), fellowships, teaching assistantships, graduate student researcher appointments, and other graduate student support; and maintenance of high quality standards in all graduate programs.

## Graduate Adviser

At matriculation, a graduate student usually selects or is assigned a graduate adviser who assists in program planning and completion of degree requirements. Sometimes this role is temporarily assumed by a faculty adviser assigned to the program as a whole. When the student’s master or doctoral committee is established, the chair of the committee assumes the adviser role.

## Graduate Admission

### Diversity, Inclusion, and Admissions

1237 Murphy Hall  
310-206-3411

Meeting the minimum requirements does not ensure graduate admission, which is limited by the number of places and the amount of student support available in UCLA graduate programs. Applicants are evaluated on scholastic qualifications and formal preparation for the graduate field of study. Departments may have other requirements for admission, which are listed by department and by degree and can be accessed from the **Graduate Education** website.

## Application for Admission

Prospective students **apply online**. A nonrefundable application fee is required when the application is submitted.

## When to Apply

Most departments and schools have deadlines in November and early December for the following fall quarter. Consult the **admissions** section of the Graduate Education website for specific deadlines for each major. A few departments accept applications for winter and spring quarters.

At the discretion of the department, applications may be considered if submitted after a stated program deadline, provided the enrollment limits have not been exceeded.



## Entrance Requirements

U.S. applicants to graduate standing must hold a bachelor's degree from a regionally accredited institution comparable in standard and content to that awarded at the University of California. Degrees granted on the basis, for example, of nonacademic prior learning, test scores, and other than organized supervised coursework in academic subjects are not considered comparable. A scholastic average of 3.0 (B) on a 4.0 scale, or better (or its equivalent if the letter grade system is not used), is required in undergraduate coursework and in any postbaccalaureate study.

See also requirements for international applicants in this chapter.

## Supporting Materials

Supporting materials to be submitted, including official transcripts of record and nonrefundable application fee, are specified on the [graduate admissions](#) website. Submitted materials become the property of UCLA and are not returnable.

## Graduate Record Examination

Applicants for admission to a department or school that requires [Graduate Record Examination](#) (GRE) scores should arrange to take the examination no later than December, so scores arrive on time. GRE scores should be sent directly to the prospective department and not to Division of Graduate Education.

GRE registration and information about testing formats are available from [Educational Testing Service](#) (ETS). Information on GRE fee waivers is also available on the ETS site.

## Letters of Recommendation

Most graduate professional schools, departments, and interdepartmental programs at UCLA require applicants to submit three letters of recommendation. Letters typically augment, validate, or explain information provided in the application; and should be written by persons qualified to analyze student's abilities and academic promise.

## Admission to Dentistry, Law, and Medicine Programs

Applicants for MLS, MS, and PhD programs in the schools of Dentistry, Law, and Medicine should [apply for admission](#) to Division of Graduate Education as described. For admission to DDS, JD, LL.M., SJD, and MD degree programs in the schools of [Dentistry](#), [Law](#), and [Medicine](#), applicants should consult school websites.

## Admission to Bioscience Programs

Applicants to PhD programs in fields related to life and biomedical sciences apply for admission to one of 11 individual research areas. [Graduate Programs in Bioscience](#) is a consortium of PhD programs organized into specialized research training groups, called home areas, that serve as the admissions and training units associated with the degree-granting programs. Through this structure, students can specialize in their chosen area while maintaining the flexibility to move between home areas to best pursue their research interests.

## Degree-Granting Programs and Home Areas

Consortium PhD programs offer the research home areas listed.

### Bioinformatics

- Bioinformatics
- Medical Informatics

### Human Genetics

- Genetics and Genomics

### Molecular Biology

- Biochemistry, Biophysics, and Structural Biology
- Cell and Developmental Biology
- Gene Regulation, Epigenomics, and Transcriptomics
- Immunity, Microbes, and Molecular Pathogenesis

### Molecular, Cellular, and Integrative Physiology

### Molecular and Medical Pharmacology

- Molecular Pharmacology

### Neuroscience

### Physics and Biology in Medicine

Additional opportunities for doctoral study include Biochemistry, and Molecular and Structural Biology in the College of Letters and Science; Oral Biology in the School of Dentistry; and Molecular Toxicology in the Fielding School of Public Health.

## International Applicants

International applicants who have completed their postsecondary education outside the U.S. are expected to hold a degree, with above average scholarship, from a university or university-level institution. If their examinations have been graded Excellent, Very Good, Good, and Pass, applicants must have at least a Very Good general rating to qualify for admission.

Applicants who hold a three-year Bologna degree may be considered for admission on the recommendation of the department, program, or professional school. Applicants who hold a three-year ordinary or pass degree—or who hold a professional diploma in accounting, business, librarianship, social work, physical education, health education, and so forth—or a four-year degree, diploma, or higher certificate from a technical, vocational, or postsecondary specialized school should not apply for graduate admission. Persons with memberships in professional associations such as an Institute of Chartered Accountants, Institute of Chartered Secretaries and Administrators, and so forth, do not qualify for graduate admission unless they also hold recognized university-level degrees or titles.

Applicants should submit transcripts of record, in the original language and with an English translation certified by the institution, for all college and university work. Applicants who are officially offered admission must submit official, final academic records before the term of admission begins. The original of an academic record that cannot be replaced must not be sent; a properly certified copy should be sent instead. Specific information for applicants from different educational systems is available from [required academic records](#).

## English Language Proficiency

Most international applicants to UCLA graduate school are required to submit scores from either the [Test of English as a Foreign Language](#) (TOEFL) or the [International English Language Testing System](#) (IELTS) examination. International students and U.S. citizens who hold a bachelor's or higher degree from a university located in the U.S. or in another country (e.g., Australia, Barbados, Canada, Ireland, Jamaica, New Zealand, United Kingdom) in which English is both the primary spoken language of daily life and the medium of instruction, or who have completed at least two years of full-time study at such an institution, are exempt from this requirement.

Applicants who are required to submit TOEFL or IELTS scores (i.e., do not belong to the exempted categories listed) may also be required to take the UCLA [English as a Second Language Placement Examination](#) (ESLPE) to determine potential coursework in academic writing. Incoming students who score at least 100 on the TOEFL iBT (Internet-based test), or at least a 7.5 overall band score on the IELTS examination, are exempt from the ESLPE requirement.

Students who are required to take the ESLPE must do so before or during their first term at UCLA. Students may take the ESLPE once only. Unauthorized retakes of the examination result in an invalid examination score. Depending on ESLPE results, students may be required to complete one or

more courses in the English as a Second Language (ESL) credit-bearing series, beginning in their first term in residence at UCLA. The courses must be passed with a grade of C or better if taken for a letter grade, or the equivalent of B or better if taken on an S/U basis. Taking required ESL courses may prolong students' time to degree. If students do not achieve a minimum score on the ESLPE, their admission is deferred until they have acquired the necessary proficiency in English.

## Teaching Assistantships

Graduate students whose first language is not English must pass a campus-administered [Test of Oral Proficiency](#) (TOP) to be eligible for a UCLA teaching assistantship. Students are exempt from this test if they have already earned an undergraduate degree from an institution at which English was the sole language of instruction. Students who do not plan to work as teaching assistants do not need to take the TOP.

For students who receive a clear pass (7.1 or above) on the TOP, no coursework is required. Students who receive a marginal pass (between 6.4 and 7.0) are required to take an approved oral skills course during their first quarter as teaching assistants. Students scoring 6.3 or below are not eligible to become teaching assistants, and are encouraged to complete recommended ESL coursework before taking the TOP examination again.

No other oral examination is accepted. Entering graduate students who plan to work as teaching assistants in their first quarter at UCLA must arrive early enough to take the TOP before instruction begins. The examination schedule and other information about TOP are available on the Center for the Advancement of Teaching (CAT) [TOP](#) web page.

## Admission Policies

### Duplicate Degrees

The University of California, in general, discourages the duplication of advanced degrees. At the same time, it recognizes that a professional degree does not duplicate an academic one, and that pressing needs may exist for degrees in different areas (see [Graduate Articulated and Concurrent Degrees](#) in Majors and Degrees). Students who apply for a second academic degree at the same level or lower than the one they already hold are required to show compelling cause to the department. The Division of Graduate Education is particularly concerned that a careful review and special justification be made by the graduate program in all cases where an applicant or continuing student is recommended for admission to a second doctoral program. This concern also extends to a student support recommendation for pursuit of a second doctorate degree.

All degree requirements and UCLA regulations apply just as they do for a first degree. Courses and other degree requirements already applied to the earlier degree may not be applied to the second.

## No Degree Objective

UCLA has no special limited or unclassified categories of graduate admission. Under some circumstances, however, applicants may be admitted for coursework without a degree objective. For example, teachers with a master's degree who wish some refresher study, or international students on a one-year stay in the U.S., may wish to apply in this manner. Requirements for admission are the same as those for degree programs, and the academic program must agree to accept the student for no degree objective (NDO) status. All admissions to NDO status must be specially approved by the dean of the Division of Graduate Education, as must any University financial assistance for students having NDO status.

## Readmission

Students who have registered at any time as a graduate student at UCLA and return after an absence (except a formal leave of absence) must file an Application for Graduate Admission.

See [Graduate Student Readmission](#) in Policies and Regulations for readmission procedures.

## Summer Session Classes

Enrollment in summer session classes does not constitute admission to graduate standing, nor does it substitute for the required continuous registration in fall, winter, and spring quarters. Students who wish to apply summer sessions classes to their subsequent graduate program should consult in advance with their departmental adviser. This is also true if they have been readmitted to graduate standing and wish to resume graduate study in summer sessions. Information and applications are available from [Summer Sessions](#), 1331 Murphy Hall.

If students take summer session classes following the award of the bachelor's degree, those grades do not appear on the undergraduate transcript (they are included on a separate transcript). After students are accepted by Division of Graduate Education, summer session grades are included on the graduate transcript and computed in the grade-point average.

# Registration

**Registrar's Office**  
1113 Murphy Hall

Registration consists of paying fees and enrolling in classes. Students enroll in UCLA, and in the College or one of the professional schools.

1. Registration fees and other UCLA charges are due the 20th of each month. BruinBill accounts can be viewed through [MyUCLA](#).
2. Enrollment in classes is completed through [MyUCLA](#).

Students must complete both processes by the established deadlines to be officially registered for the term.

Graduate students must be either registered and enrolled or on an official leave of absence every term until their degrees are awarded. As an exception, certain graduate students may be eligible to pay the filing fee. Failure to register, have filing fee status, or be on an official leave of absence for any academic term (fall, winter, or spring quarter) constitutes withdrawal from UCLA.

## Fees and Payment

Details on fee payment, enrollment procedures, and deadlines are published on the Registrar's website [registration fee payment](#) section.

## Electronic Billing

BruinBill accounts are administered electronically (e-bill) through MyUCLA. Financial activity is displayed for the current term, as well as account activity for the last 24 months. Students can pay their BruinBill account electronically using an electronic check with no fee; or American Express, Discover, MasterCard, and VISA credit cards with a fee.

## Annual Graduate Fees

Although the exact cost of attending UCLA varies by program, there are some fees that all UCLA students must pay. Each entering and readmitted student is required to submit a Statement of Legal Residence and Statement of Intent to Register to the Division of Graduate Education Diversity, Inclusion, and Admissions office. A student classified as a nonresident of California must pay nonresident supplemental tuition (NRST) in addition to other registration fees. Legal residents of California are not required to pay NRST. [Annual graduate fees](#) and NRST are published online. For more information, see [Residence for Tuition Purposes](#) in Policies and Regulations.

## Professional Degree Program Fees

Students admitted to professional degree programs must also pay professional degree supplemental tuition (PDST), which varies by program. PDST amounts are published on the Registrar's [annual and term fees](#) web page.

## Self-Supporting Degree Program Fees

Students in self-supporting degree programs pay an annual fee, which may be assessed per term, course, or unit. For details, contact the individual program. Self-supporting program fees are published on the Registrar's [self-supporting fees](#) web page.

## Miscellaneous Fees

Miscellaneous fees include charges for late registration fees payment. Late fees also apply if students file their study list late or do not pay off BruinBill balances on time. Fees are charged if any check is returned by a bank for any reason. Charges are assessed for most petitions and other special requests. There is also a fee for advancement to doctoral candidacy. Study list, document and service, transcript-related, and degree and diploma fees are published on the Registrar's website [fees and residence](#) section.

## Student Health Insurance Fee

All graduate students are automatically assessed for and enrolled in the University of California [Student Health Insurance Plan](#) (UCSHIP) as a condition of registration at UCLA. Continued enrollment in a qualified health insurance plan is mandatory during all registered terms. UCSHIP covers medical, vision, dental, and behavioral health services.

The UCSHIP fee is billed each term along with other UCLA fees. UCSHIP fulfills all requirements mandated for a qualified health insurance plan as defined by the University of California. The [Ashe Student Health and Wellness Center](#) is the primary health care provider for UCSHIP, and where all nonemergency medical care is initiated.

Nonregistered students (those who withdraw, or are on approved leave or planned academic leave) may have access to UCSHIP services under certain conditions. Contact the Ashe Center to learn more.

## UCSHIP Waiver

Students may waive UCSHIP if they maintain active enrollment in a qualified health insurance plan that meets all established requirements, apply for a waiver within established deadlines each term, and correctly complete the online [waiver form](#). Students are responsible for providing complete and accurate information. Third-party individuals may not waive UCSHIP for a student. Waivers must be submitted before the term fees payment deadline. Deadlines

are strictly enforced, and no refunds are issued after the deadline. For more information, see the [Ashe insurance](#) web page.

## Fees Notice

All fees are subject to change without notice by the Regents. Current academic year fees and update information are available on the Registrar's [annual and term fees](#) web page.

## Annual Budget Estimates

Budgets are designed to serve as a guide and are subject to change without notice. [Budget information](#) is available from Financial Aid and Scholarships. Budgets for the schools of medicine, dentistry, and nursing are higher due to specialized supplies. More information can be found on the websites of the schools of [dentistry](#), [law](#), [medicine](#), and [nursing](#) for their respective students.

## Fee Refunds

Students who formally withdraw from UCLA or take an approved leave of absence may receive partial refunds of fees. For more information, see [Withdrawal](#) in Policies and Regulations. Consult the Registrar's [refunds](#) web page for policy details and specific refund deadlines for each term.

## Fee Deferrals

Academic apprentice personnel are eligible to receive a fee deferral for registration fees assessed during the term in which they serve as an academic apprentice. For more information, students should contact their hiring department. Students are responsible for paying fees by the deferred payment deadline, which is two months after the standard term due date. Whether students attend UCLA, take a leave of absence, or withdraw from the University, they are responsible for the fees; but may be eligible to receive a partial fee refund according to the [refund schedule](#). Fees not paid by the deadline are subject to late fees.

## Reduced Fee Programs

Under limited circumstances and with prior approval, certain students may qualify for some reduced fees.

## In Absentia Registration

Graduate students who conduct research or engage in approved degree-program-related activities outside California may be eligible for in absentia registration, and reduction of tuition and the student services fee to 15 percent of the full amounts. See [In Absentia Registration](#) in Policies and Regulations for more information.

## Reduced Units

UCLA recognizes the need for part-time study in special circumstances. When recommended by the department and properly approved by the Division of Graduate Education dean for enrollment in 6 or fewer units, students may be eligible for a one-half reduction in tuition; and a one-half reduction in nonresident supplemental tuition and/or professional degree supplemental tuition, when applicable. Students in self-supporting degree programs are not eligible for fee reductions. Doctoral students who have passed the qualifying examination or advanced to candidacy are not eligible for part-time status. For full part-time status eligibility criteria, see [part-time enrollment](#) on the Graduate Education website.

Students must submit a Fee Reduction Request to the Division of Graduate Education by Friday of the second week of the term. The request must include a memo from the student's faculty advisor that contains sufficient detail to allow the graduate dean to independently evaluate the need for, and feasibility of, part-time student status.

Part-time status may be requested for a maximum of three quarters. Extensions beyond this limit, for a total of up to six quarters, may be approved under exceptional circumstances.

Assessment of reduced fees is based on total enrolled units as of Friday of the third week of the term.

Except for these reductions for eligible and approved part-time students, there is no reduction in tuition; UCSHIP; student services or UCGPC fees; Ackerman Student Union; Wooden Center; student programs, activities, and resources complex (SPARC); or Graduate Students Association fees; or other campus-based fees.

## Filing Fee

Graduate students may be eligible to pay the filing fee (half the full amount of the student services fee) in lieu of the full student services fee for the term in which they expect to complete final degree requirements and receive their degree. Students are not eligible to pay the filing fee unless registered for the immediately preceding term. For more information on other eligibility requirements, see [filing fee](#).

Students who pay the filing fee are not eligible for UCLA services, and are not considered to have the same status as registered students.

## Reduced Nonresident Supplemental Tuition

The annual nonresident supplemental tuition (NRST) for graduate doctoral students who have advanced to candidacy is reduced by 100 percent, effective the term after the student is advanced. Doctoral students may receive this

reduced NRST rate for a maximum of three years. After three years, the full nonresident rate is assessed.

## University Employees

Full-time UCLA employees may apply for a reduction of tuition and the student services fee at their campus human resources office. Students who use the part-time fee reduction may not also use the UCLA employee fee reduction.

## Class Enrollment

Students enroll in classes through MyUCLA during assigned times—called enrollment appointments—when they are allowed to enroll. Graduate students may enroll in a maximum of 22 units in any one term, unless their graduate program has a lower unit maximum. Students who wish to exceed the maximum must request an increase from their department. The Class Planner feature allows students to create class plans prior to enrollment, share plans with counselors, and quickly add classes during their enrollment appointment. Students use the Find a Class and Enroll feature to search the [Schedule of Classes](#) and add available classes to their class plan or study list.

MyUCLA is also used to view enrollment appointments; drop classes; change grade type and number of units; exchange classes; and view the study list, which includes information on class meeting times, final examinations, classmates, grades, textbooks, and class websites. For more information, see Registrar's [study list](#) and [enrollment policies](#) web pages.

For classes that require written approval or specialized processing, students may inquire about processing steps through MyUCLA [Message Center](#).

## Study List

A study list is the record of courses in which a student is enrolled for the term. At 11:59 p.m. on Friday of the second week of instruction, the study list of enrolled courses becomes official and all wait lists are eliminated. Students should verify their study list through MyUCLA after each enrollment transaction. Students are responsible for all courses and the grading basis as listed on MyUCLA, and cannot receive credit for courses not listed.

After Friday of the second week, most changes to the official study list can be made with a fee through MyUCLA. Some changes require an Enrollment Petition along with approval signatures.

See the [study list](#) web page for deadlines and complete instructions.

Errors or omissions should be corrected before the College or school deadlines for changes by petition. Unapproved



withdrawal from or neglect of a course entered on the study list results in a failing grade.

## Wait List

Some departments establish wait lists for classes that are full. If an enrolled student drops the class, that seat is filled by a student on the wait list. Students can check enrollment status through [MyUCLA](#). Position on a wait list does not indicate enrollment. Students on a wait list should not assume they will be added to a class.

Wait lists are maintained through Friday of the second week of instruction unless a department deletes them earlier.

## Full-Time Graduate Program

Three courses (or 12 units) per term are considered the normal enrollment for graduate students, and are required for students not in doctoral candidacy to be counted for full-time standing in UCLA official enrollment records. Therefore, students are directed by their departments to enroll full time whenever possible.

Throughout their appointments, teaching assistants (TAs) and graduate student researchers (GSRs) are required to be registered and enrolled in at least 12 units. TAs or GSRs terminate their appointments if they take a leave of absence, withdraw, or use a filing fee. Course 375 for TAs, and individual study at the 500 level for GSRs, may be counted toward the 12-unit load.

Graduate students holding fellowships must be enrolled in at least 12 units, both before and after advancement to candidacy. The 12-unit minimum required per term may include, among others, the 500 series (individual study or research).

Veterans are required to make normal progress toward the degree as indicated by the major department. Information on Department of Veterans Affairs regulations is available from the [veterans benefits coordinator](#), 1113 Murphy Hall.

## Continuous Registration Policy

Graduate students must be either registered and enrolled or on an official leave of absence every term until the degree is awarded. As an exception, certain graduate students may be eligible to pay the filing fee. Failure to register, have filing fee status, or be on an official leave of absence for any academic term (fall, winter, or spring quarter) constitutes withdrawal from UCLA.

## Registration in the Final Term

If students are completing courses; using faculty time, library facilities, laboratories, or other UCLA resources; or

receiving UCLA funds, they are required to register in the final term in which they expect to receive their degree.

When the award of a degree is expected at the end of a given term, but special circumstances (not involving preparation of the manuscript) over which a student has no control prevent the completion of all requirements before the first day of instruction in the next term, a student may petition for a waiver of registration for that term. Such petitions must be accompanied by a letter from the graduate faculty adviser or department chair elaborating the exceptional circumstances.

## Immunization Requirements

UCLA requires that all incoming students be vaccinated against or show immunity to multiple infectious diseases consistent with guidelines of the American College Health Association, California Department of Public Health, and U.S. Centers for Disease Control and Prevention (CDC). These requirements help protect the health of students and the entire campus community. Students submit their immunization history to the Ashe secure [patient portal](#). See [immunization requirements](#) for more information.

## Health Assessment and Evaluation

Incoming students enrolling in the school of dentistry, medicine, or nursing—or the Social Welfare Department—must meet specific requirements related to their professional health-care program. Information is available from the [Ashe Center](#). For specific questions, contact the individual department.

## Financial Support

### Fellowships and Financial Services

1228 Murphy Hall  
310-825-1025  
[Office e-mail](#)

As a major center for graduate study, UCLA offers its qualified graduate students substantial support through several types of financial assistance.

Information on available funding for entering (and re-entering) students is included in the online [graduate admission application](#). Continuing graduate students should complete the online [fellowship application](#). Completed fellowship applications must be returned to the home department by the published deadlines. Some departments have earlier deadlines; see [continuing graduate student funding](#) for details.

The Graduate Education website includes a financial support section for [entering students](#) and one for [continuing students](#). Both describe the full range of financial assistance

available. Students should contact their department for more detailed information.

## Fellowships

UCLA administers several awards on the basis of scholarly achievement. Most awards are available in open competition, though some are restricted to new students or to specific departments. Some fellowship and scholarship awards are made from university funds; others are made from endowment funds held in trust by UCLA and given by interested friends and alumni. Still others come from annual donations by educational foundations, industry, government, and individual benefactors.

Most fellowship, traineeship, and grant awards are for one academic year (three terms). Fellowships and grants offer stipends in varying amounts for qualified students. Nonresident tuition fellowships cover nonresident supplemental tuition (NRST), for periods of one to three terms, of selected graduate students who are not California residents.

## Assistantships

Academic apprenticeships train qualified students for careers in teaching and research, and compensate them for their services. Teaching assistantships offer experience in teaching undergraduates, with faculty supervision. Graduate student researcher appointments give students experience working on faculty-supervised research projects. For more information, see [working at UCLA](#).

## Awards Based on Financial Need

To apply for aid based on financial need, students must complete the online Free Application for Federal Student Aid (FAFSA) or [California Dream Act application](#) by the priority filing deadline (March 2). Some awards, such as university grants, are subject to funding availability. Financial aid applicants should make sure that any requested documentation is submitted to Financial Aid and Scholarships as soon as possible.

Students who need financial aid for summer session courses must submit a summer financial aid application in addition to the FAFSA. Summer applications are available on [MyUCLA](#) (under the Finances and Jobs tab) beginning April 1 and close on August 27. Applications should be submitted by April 30 for on-time consideration.

Financial aid is also available to UCLA students enrolled in summer travel, summer institutes, and UC cross-campus summer programs. See [Financial Aid and Scholarships](#).

Financial aid awards include work-study and low-interest loans. Students are usually awarded a financial aid package that is a combination of these forms of assistance. More

information is available from [Financial Aid and Scholarships](#), A129J Murphy Hall.

## Degree Requirements

The following information is for prospective applicants and those outside UCLA who are interested in the basic structure of UCLA graduate degree requirements. It is not meant to be comprehensive or to serve as a primary resource for continuing students. Official, specific degree requirements, including language requirements, are detailed on [program requirements for UCLA graduate degrees](#). Detailed information and general policies—many of which emanate from the Academic Senate and its Graduate Council—regarding completion of degree requirements, master's and doctoral committees, examinations, and foreign language requirements are published in [Standards and Procedures for Graduate Study at UCLA](#). General regulations concerning graduate courses, standards of scholarship, disqualification, appeal, leave of absence, normal progress toward degree, withdrawal, and other matters also are included.

## Master's and Doctoral Study

Graduate students earn a master's or doctorate degree by distinguished achievement in advanced study and research. In addition to coursework, there are various means of evaluating achievement in study, including qualifying examinations, capstones, and various kinds of laboratory and field work. Achievement in research is primarily assessed through evaluation of the master's thesis or doctoral dissertation. In addition to advanced study and research, professional master's and doctoral programs also may include professional training. This training may take the form of fieldwork, internships, or projects, and may lead to professional licensure.

## University Minimum Standards

The requirements described here for master's and doctorate degrees are minimum standards set by the University of California and UCLA. Individual schools or departments may set higher standards and may require additional courses and examinations for their master's degrees. Each department also sets additional requirements for doctorate degrees according to the demands of the field of study. See [program requirements for UCLA graduate degrees](#) and the departmental graduate adviser for details. Policies and regulations are outlined in [Standards and Procedures for Graduate Study at UCLA](#).

## Academic Residence

For the master's degree, the minimum residence requirement is one year (three academic terms) of registration in

graduate standing at the University of California, including at least two academic terms at UCLA.

For the doctorate degree, the minimum residence requirement is two years (six academic terms) of registration in graduate standing at the University of California, including one year (usually the second) in continuous residence at UCLA. If students earned a master's degree at UCLA, one year (three academic terms) of this requirement will have been met. In most cases a longer period of residence is necessary, and from three to five years is generally considered optimal.

Academic residence for both degrees is established by successfully completing a minimum of one graduate or upper-division course (4 units) during a term.

Students may earn one term of residence for summer study in either of these ways: by enrolling in two six-week UCLA summer sessions, taking at least 2 units of upper-division and/or graduate work in each session; or enrolling in one eight-week session, taking at least 4 units. Residence earned through summer enrollment is limited to one third of the degree requirements.

To maintain satisfactory progress toward the degree, UCLA requires at least a 3.0 (B) grade-point average in all courses taken in graduate standing at the University of California, and in all courses applied toward a graduate degree.

## Foreign Language Requirements

Foreign language requirements are determined by individual departments and programs. Many departments require graduate degree candidates to demonstrate proficiency in one or more foreign languages, so that they can acquire broad knowledge in their field of study and keep abreast of foreign developments in the field.

If their program has a language requirement, students are urged to fulfill it either before they begin graduate study or as early as possible in their graduate career. If the department requires two or more foreign languages, students must complete at least one before the University oral qualifying examination (unless, as is most common, the department requires that both be completed before the examination). All foreign language requirements must be satisfied before advancement to candidacy.

Some departments allow students to fulfill language requirements either by passing departmental examinations or by completing coursework in a foreign language. Certain departments may require additional languages, special competence, or other special procedures. In some departments, English satisfies the foreign language requirement if it is not the native language.

For more details on foreign language requirements, see [program requirements for UCLA graduate degrees](#).

## Changing Majors

Continuing graduate students may petition for a change of major after discussing plans with the new department. The [graduate petition for major/classification change](#) is filed with the Division of Graduate Education. While there is no deadline for this petition, it should be submitted before the end of the tenth week of instruction for changes in the current quarter. Students should contact their department about any deadlines before completing the petition.

## Program of Study and Scholarship

### Master's Degree

At least nine graduate and upper-division courses (or any number of fractional courses totaling 36 units) must be completed in graduate standing; at least five of the nine (20 units) must be graduate-level courses. These unit requirements represent the UCLA minimum standard. Many master's degree programs have higher unit requirements.

UCLA offers master's degrees under two plans: Plan I, the Master's Thesis; and Plan II, the Master's Capstone. Some departments offer both plans, and students must consult with their department to determine the plan for meeting their degree requirements. UCLA minimum requirements are the same under either plan.

#### Plan I: Master's Thesis

Every master's degree thesis plan requires the completion of an approved thesis that demonstrates the student's ability to perform original, independent research.

#### Plan II: Master's Capstone

Following advancement to candidacy, students under Plan II must pass an individual or group capstone project or comprehensive examination. Information concerning this project or examination and its format (which may be a recital, exhibition, project portfolio, etc.) is available from the department and published in see [program requirements for UCLA graduate degrees](#).

## Doctorate Degree

Doctoral programs are individualized and permit a high degree of specialization. UCLA does not specify course requirements for doctoral programs. Individual programs set their own requirements, subject to Graduate Council approval. These may include specific courses, and these

must be completed before students take the University oral qualifying examination. Students determine their course of study in consultation with a graduate faculty adviser until the doctoral committee is appointed.

### **Doctoral Examinations before Advancement to Candidacy**

Prior to advancement to candidacy, doctoral candidates fulfill the coursework, teaching, and/or examinations required by the major department or program. They are supervised during this period by a departmental faculty adviser and/or departmental guidance committee. This committee administers a departmental written and, in some cases, oral examination (not to be confused with the University oral qualifying examination) after students complete the recommended or required work. Once all departmental requirements are met, the department chair consults with the student and then nominates a doctoral committee. All students are required to successfully complete a written qualifying examination and the University oral qualifying examination before advancement to doctoral candidacy.

### **University Oral Qualifying Examination**

The doctoral committee, consisting of at least four faculty members nominated by the department, is appointed by the dean of the Division of Graduate Education. Consult [Standards and Procedures for Graduate Study at UCLA](#) and [minimum standards for doctoral committee constitution](#) for details on committee membership. To determine qualifications for advancement to candidacy, the committee administers the University oral qualifying examination and, at its option, a separate written examination.

### **Doctoral Dissertation**

Every doctorate degree program requires completion of an approved dissertation that demonstrates the student's ability to perform original, independent research; and constitutes a distinct contribution to knowledge in the principal field of study.

# Policies and Regulations

Students at UCLA are responsible for understanding the policies and regulations established by the Academic Senate. Should any variations exist between explanations in this catalog and regulations in the *Manual of the Academic Senate*, the manual prevails in all cases.

## Academic Policies

The UCLA campus is home to one College and 12 professional schools. Each has its own degree requirements, and each division and school is headed by a dean who has final academic authority.

## Academic Terms

Undergraduate programs and most graduate programs at UCLA use the quarter system for academic terms, credit units, and registration fees. An academic quarter term is 10 weeks of instruction, and there are 146 days of instruction in an academic year. Class credit is accumulated in quarter units (see below). Registration fees are due each quarter. For details on academic dates and deadlines, see the Registrar's [term calendar](#). For fees, see the Registrar's [fees](#) web page.

The School of Law and Geffen School of Medicine use the semester system.

## Language of Instruction

UCLA is a premier American public research institution. Courses at UCLA are taught in the English language, unless otherwise noted in the course description (for example, foreign language courses).

## Academic Credit

Academic work at UCLA is measured by units of credit, which are used to evaluate the amount of time a student has devoted to a particular subject and to determine a student's class level.

## Units of Credit

Most UCLA courses are assigned a unit value. One unit represents three hours of work per week per term by the student, including both class attendance and preparation.

## Class Levels

### Undergraduate Student

Undergraduate class level is based on completed and in-progress units, not years attended.

UNDERGRADUATE CLASS LEVELS	
Class Designation	Units Completed
Freshman (UFR)	0–44.9
Sophomore (USO)	45–89.9
Junior (UJR)	90–134.9
Senior (USR)	135 or more

### Graduate Student

Graduate class level is based on the degree objective, whether or not students are advanced to candidacy for a doctorate, and/or completed units.

GRADUATE CLASS LEVELS	
Class Designation	Units Completed
Master (MA/MS) (GMT)	Master's degree objective
Professional Master (GPM)	--
Doctorate 1 (GD1)	Not advanced to candidacy
Doctorate 2 (GD2)	Advanced to candidacy
Professional School (PF)	--
Professional School (PF2)	Second year (Law: 30-55.9)
Professional School (PF3)	Third year (Law: 56 or more)

## Repetition of Courses

Certain courses, as noted in their course descriptions, may be repeated for credit. Other courses taken at UCLA (except UCLA Extension) may be repeated only according to the following guidelines:

1. To improve the grade-point average (GPA), students may repeat only those courses in which they receive a grade of C– or lower; NP or U grades may be repeated to gain unit credit. Courses in which a letter grade is received may not be repeated on a P/NP or S/U basis. Courses originally taken on a P/NP or S/U basis may be repeated on the same basis or for a letter grade.
2. Repetition of a course more than once requires the approval of the College, school, or dean of the Division



of Graduate Education, and is granted only under extraordinary circumstances.

3. Degree credit for a course is given only once, but the grade assigned each time the course is taken is permanently recorded on the transcript.
4. For undergraduates who repeat a total of 16 or fewer units, only the most recently earned letter grades and grade points are computed in the GPA. After repeating 16 units, however, the GPA is based on all letter grades assigned and total units attempted.
5. Certain programs may place additional restrictions on the repetition of courses required for those programs.
6. For graduate students, all courses in which a letter grade is given, including repeated courses, are used in computing the GPA.

## Credit for Upper-Division Tutorials

Credit for upper-division tutorial courses numbered 195 through 199 in a single term is limited to a maximum of 8 units. Subject to regulations governing P/NP grades, students may take these courses on a P/NP or letter-grade basis, but the total number of units allowed in upper-division tutorial courses for a letter grade is 32.

To enroll in an upper-division tutorial course, students must have advanced junior standing and at least a 3.0 GPA in the major field, or must have senior standing. Students who have an outstanding Incomplete (I) grade in an upper-division tutorial course may not enroll in another upper-division tutorial course until the I grade has been removed. On the advice of the instructor and chair, the dean of the College or school may authorize exceptions to the limitations listed. Departments may impose additional limitations on upper-division tutorial courses.

## Credit by Examination

Students with high scholastic standing may earn credit for regular UCLA courses by taking examinations rather than enrolling in the courses. This is accomplished by establishing, with a UCLA faculty member, an individual plan of study that may include oral and written work in addition to other requirements. To be eligible, undergraduate students must have completed a minimum of 12 units at UCLA. Graduate students must be registered at the time of the examination and are limited to a maximum of three courses taken in this manner.

The results of these courses are entered on the record in the same way as UC transfer credit, and grade points are assigned. Graduate credit earned by examination may be applied to minimum course requirements for master's

degrees but cannot apply to academic residence requirements for master's or doctorate degrees.

Students need approval from the instructor; the department; and the College, school, or dean of the Division of Graduate Education, from whom petitions for credit by examination (with fee) are available.

## Examinations

### Alternate Examination Dates Policy

In compliance with Section 92640(a) of the California Education Code, UCLA must accommodate requests for alternate examination dates for any test or examination at a time when that activity would not violate a student's religious creed. This requirement does not apply in the event that administering the test or examination at an alternate time would impose an undue hardship that could not reasonably be avoided. Accommodation for alternate examination dates is worked out directly and on an individual basis between the student and the faculty member involved.

In general, students should make such requests of the instructor during the first two weeks of any given academic term, or as soon as possible after a particular examination date is announced by the instructor.

Students unable to reach a satisfactory arrangement with their instructor should contact the [Office of Ombuds Services](#), 105 Strathmore Building; or the [Office of Student Conduct](#), 1206 Murphy Hall, for assistance.

Instructors who have questions or who wish to verify the nature of the religious event or practice involved should contact the Office of Ombuds Services or the Office of Student Conduct for assistance.

### Undergraduate Final Examinations

No student shall be excused from assigned final examinations, except as provided above in the policy on alternate examination dates and as provided in the following three paragraphs.

The instructor in charge of an undergraduate course is responsible for assigning the final grade in the course. The final grade shall reflect the student's achievement in the course and shall be based on adequate evaluation of that achievement. The instructor's method of evaluation must be announced at the beginning of the course. The methods may include a final written examination, term paper, final oral examination, take-home examination, or other evaluation device. Evaluation methods must be of reasonable duration and difficulty and must be in accord with applicable departmental policies. Final written examinations may not exceed three hours' duration, and are given only at the

times and places established and published by the department chair and the Registrar's Office.

At the end of the term in which a student is expected to graduate, the major department may examine the student in the field of the major and, with the approval of the Undergraduate Council, assign a credit value to such general examination. The department may also excuse the student from final examinations in courses offered by the department during that term.

An instructor may release to individual students their original final examinations (or copies). This may be done by any method that ensures the students' right to privacy. Otherwise, the instructor shall retain final examination materials, or a copy thereof, until the end of the next succeeding regular term of instruction, during which period students shall have access to their examinations.

## Grades

The work of all students at UCLA is reported in grades. Instructors are required to assign a final grade for each student enrolled in a class.

## Undergraduate Grades

The following grades are used to report the quality of undergraduate student work at UCLA:

- A+ Extraordinary
- A Superior
- B Good
- C Fair
- D Poor
- F Fail
- P Passed (achievement at grade C level or better)
- NP Not Passed
- I Incomplete
- IP In Progress
- DR Deferred Report

Grades A, B, C, and D may be modified by a plus (+) or minus (–) suffix. Grades A, B, C, and P denote satisfactory progress toward the degree. A grade of D may be applied toward degrees unless otherwise prohibited by program requirements. However, courses in which a grade of D is received must be offset by higher grades in the same term for students to remain in good academic standing. A grade of F yields no unit or course credit.

## Graduate Grades

The following grades are used to report the quality of graduate student work at UCLA:

- A Superior Achievement
- B Satisfactorily demonstrated potentiality for professional achievement in field of study
- C Passed the course but did not do work indicative of potentiality for professional achievement in field of study
- F Fail
- S Satisfactory (achievement at grade B level or better)
- U Unsatisfactory
- I Incomplete
- IP In Progress
- DR Deferred Report

The grades A, B, and C may be modified by a plus (+) or minus (–) suffix. The grades A, B, and S denote satisfactory progress toward the degree. A grade of C may be applied toward graduate degrees unless otherwise prohibited by the program requirements. However, courses in which a grade of C is received must be offset by higher grades in the same term for students to remain in good academic standing. A grade of F yields no unit or course credit.

The schools of dentistry, law, and medicine use their own grading codes. Students interested in dentistry, law, or medicine programs should contact the appropriate school for more information.

## Grade Points

Grade points per unit are assigned by the Registrar as follows:

GRADE POINTS			
Grade	Grade Points per Unit	Grade	Grade Points per Unit
A+	4.0	C–	1.7
A	4.0	D+	1.3
A–	3.7	D	1.0
B+	3.3	D–	0.7
B	3.0	F	0.0
B–	2.7	NP	0.0
C+	2.3	U	0.0
C	2.0		

As indicated, a plus (+) or minus (–) suffix added to a grade raises or lowers the grade-point value, except in the case of A+, which carries the same number of grade points as the A grade. Courses in which students receive a grade of P or S

may count toward satisfaction of degree requirements, but these grades, as well as DR, I, IP, and NR, are disregarded in determining the grade-point average. (If a grade of I is later removed and a letter grade assigned, units and grade points are included in subsequent GPAs.) NR indicates that no grade was received from the instructor.

## Grade-Point Average

The grade-point average (GPA) is determined by dividing the number of grade points earned by the number of units attempted. The total grade points earned for a course equals the number of grade points assigned times the number of course units. For example, if a student takes three 4-unit courses and receives grades of A–, B–, and C+, then the GPA for the term equals the total grade points (34.8) divided by the total course units (12); the GPA is 2.9. For satisfactory standing, undergraduate students must maintain a 2.0 (C) GPA and graduate students a 3.0 (B) GPA in all courses taken at any UC campus (except UCLA Extension).

GRADE-POINT EXAMPLE			
Grade	Grade Points	Course Units	Total Grade Points
A–	3.7	4	14.8
B–	2.7	4	10.8
C+	2.3	4	9.2
<b>Total</b>		<b>12</b>	<b>34.8</b>

Only grades earned in regular session or summer sessions at any UC campus—and grades earned by undergraduate students in UCLA Extension courses prefixed by XLC—are computed in the UCLA grade-point average. Grades earned at another institution or in UCLA Extension courses other than those prefixed by XLC do not affect the GPA.

Other schools and agencies may calculate GPAs differently from UCLA when evaluating records for admission to graduate and professional school programs. Students should contact those entities about such policies.

## Passed/Not Passed Grades

Undergraduate students in good standing who are enrolled in at least 12 units (14 in the Henry Samueli School of Engineering and Applied Science) may take certain courses on a Passed/Not Passed (P/NP) basis.

The grade P is assigned for a letter grade of C or better. Units earned this way count toward degree requirements but do not affect the GPA. Students receive neither units nor course credit for a grade of NP.

Students may enroll in one course each term on a P/NP basis (two courses if they have not elected the P/NP option in the

preceding term). Their department or school may require that they take some or all courses in their major for a letter grade. Certain other courses or programs may also be exempt from the P/NP option; contact the College or school for details.

Students may make changes to or from P/NP grading through the sixth week of instruction using MyUCLA.

## Satisfactory/Unsatisfactory Grades

Graduate students in good standing (minimum 3.0 GPA) may enroll for Satisfactory/Unsatisfactory (S/U) grading in one graduate or upper-division course outside the major field each term, in addition to any courses offered only on an S/U grading basis within the major. The grade S is assigned for a letter grade of B or better, but units earned in this manner are not counted in computing the GPA. Students receive neither units nor degree credit for a grade of U. They may not elect the S/U option for summer session courses without an approved petition.

Courses taken on an S/U basis outside the major, and 500-series courses within the major, are applicable toward degree and/or academic residence requirements if so approved. Interdepartmental majors may not apply S/U courses to degree requirements, except for 500-series courses.

Students may make changes to or from S/U grading through the tenth week of instruction using MyUCLA.

## Incomplete Grades

Once a grade of Incomplete (I) is assigned, it remains on the transcript along with the passing grade students may later receive for the course. The instructor may assign the grade I when work is of passing quality but is incomplete for a good cause (such as illness or other serious problem). It is the student's responsibility to discuss with the instructor the possibility of receiving an Incomplete as opposed to a non-passing grade.

If a grade of I is assigned, students may receive unit credit and grade points by satisfactorily completing the coursework as specified by the instructor. Students should not re-enroll in the course; if they do, it is recorded twice on the transcript. If the work is not completed by the end of the next full term in residence, the I lapses to an F, NP, or U as appropriate. For undergraduate students, the College or school may extend the deadline in unusual cases.

## In Progress Grades

For certain courses extending over more than one term, evaluation of student performance is deferred until the end of the final term of the course. Provisional grades of In Progress (IP) are assigned in the intervening term(s) and are

replaced with the final grade when students complete the full sequence. The College or school faculty, or the Division of Graduate Education, determines credit if students do not complete the full sequence and petition for partial credit.

## Deferred Report Grades

Students may receive a grade of Deferred Report (DR) when the instructor believes their work to be complete but cannot assign a grade because of disciplinary proceedings or other problems. If students are given a grade of DR, the Office of the Dean of Students assists them in resolving the problem. For graduate students, the dean of the Division of Graduate Education sets a deadline by which the DR lapses to an F if the problem is not resolved and a grade assigned. The DR is changed to a grade, or perhaps to an Incomplete, when the instructor provides written confirmation that the situation is resolved. The DR is not included in determining the grade-point average.

## Grade Assignment

The instructor in charge of a course is responsible for determining the grade of each student in the course. The standards for evaluating student performance are based on the course description as approved by the appropriate course committee.

The final grade in the course is based on the instructor's evaluation of the student's achievement in the course. When on an examination or other work submitted by a student, the student is suspected of having engaged in plagiarism or otherwise having cheated, the suspected infraction is to be reported to the appropriate administrative officer of the University for consideration of disciplinary proceedings against the student. Until such proceedings, if any, have been completed, the Deferred Report (DR) grade is assigned for that course. If in such disciplinary proceedings it is determined that the student did engage in plagiarism or otherwise cheat, the administrative officer, in addition to imposing discipline, reports the nature of the plagiarism or cheating back to the instructor of the course involved. In light of that report, the instructor may replace the DR grade with a final grade that reflects an evaluation of that which may fairly be designated as the student's own achievement in the course as distinguished from any achievement that resulted from plagiarism or cheating.

## Grade Correction

All grades, except DR, I, and IP, are final when filed by the instructor in the end-of-term course report. However, the Registrar's Office is authorized to change a final grade (1) on written request of an instructor, provided that a clerical or procedural error is the reason for the change; or (2) on writ-

ten request of the chair of the UCLA Academic Senate, in cases where it has been determined by the Committee on Privilege and Tenure that an instructor has assigned a grade on any basis other than academic grounds. No change of grade may be made on the basis of re-examination or, with the exception of I and IP grades, the completion of additional work. Any grade change request made more than one year after the original filing must be validated for authenticity of the instructor's signature by the department chair. Any grade change request made by an instructor who has left UCLA must be countersigned by the department chair. No grade change may be made once a student has graduated. All grade changes are recorded on the transcript.

## Grade Complaints

A grade may be appealed, on any reasonable grounds, to the instructor, the chair of the department, and the dean of the division or school.

If the student believes that the instructor has violated the [Faculty Conduct Policies](#) by assigning the grade on any basis other than academic grounds, the matter should first be taken up with the instructor. If the matter is not resolved, the student may go for counsel to the Office of Ombuds Services, or may follow the procedures for the formal filing of charges. If a charge is sustained by the Academic Senate committees on Charges and on Privilege and Tenure, an ad hoc committee is appointed within two weeks to review the disputed grade, and any warranted change is made within four weeks.

## Absence and Readmission

To be registered for a term, students must enroll in courses and pay fees according to deadlines specified in the Registrar's [term calendar](#). Students who do not register are subject to the following policies on absence and readmission.

Students who register and subsequently discontinue coursework or stop payment on registration fees checks—without an approved petition for withdrawal, leave of absence, or cancellation—receive grades of F, NP, or U, as appropriate, for all courses in which they are enrolled for that term. A fine is assessed if any check for registration fees payment is returned by a bank for stopped payment, insufficient funds, or any other reason. No fees are refunded, and future registration privileges may be curtailed or revoked.

## Cancellation of Registration

Before the first day of classes, students may cancel registration by completing and submitting a [Cancellation of Registration](#) form. Refund is as follows: For new undergraduate and dentistry students, fees paid are refunded except for the nonrefundable acceptance of admission fee. For new grad-

uate, undergraduate, continuing, and re-entering students, a **service fee** is deducted from the amount of fees paid.

Graduate students who cancel their registration and do not apply for a formal leave of absence must file for readmission to return to UCLA.

## Withdrawal

Withdrawing from UCLA means discontinuing attendance in all courses in which the student enrolled. Students who withdraw during a term must file a **Withdrawal Notice**.

When students officially withdraw, a percentage of the term fees may be refunded depending on the date the withdrawal form is filed. See the Registrar's **withdrawal** web page for policy details and specific refund dates.

The UCSHIP fee is nonrefundable in most cases. Contact the Arthur Ashe Student Health and Wellness Center **insurance office** for more information.

Students may withdraw only if they have not taken any final examinations or otherwise completed the work in any classes. For undergraduates, one withdrawal places no restriction on readmission or continuation if they started the term in good academic standing. If they withdraw after one or more previous withdrawals or while in academic difficulty, a restriction may be placed on their continuance in undergraduate standing. Before withdrawing, they are urged to consult with faculty, department, or College or school advisers to consider the full implications of this action.

Undergraduates may also withdraw from a term retroactively, provided no final examinations have been taken and no coursework has been completed. No withdrawals are accepted once they have officially graduated from UCLA.

## Undergraduate One-Term Absence

Undergraduate students who complete a term (fall, winter, or spring quarter) and do not register the following term may return to UCLA the subsequent term as a continuing student, and be eligible to register and enroll in advance.

Students on a one-term absence who plan to attend another institution—including UCLA Extension—should discuss plans with their College or school counselor before enrolling elsewhere. On returning to UCLA, students must have an official transcript sent from the institution directly to UCLA Undergraduate Admission to have coursework evaluated.

## Planned Academic Leave (PAL) for International Travel

Students who plan to participate in a study-abroad program sponsored by an institution other than the University of California are required to take a planned academic leave of

absence (PAL) from UCLA. After they are accepted into a program, students must register the program with the UCLA International Education Office (IEO), B300 Murphy Hall. Registering the program also generates the student application for the PAL.

See IEO **non-UC programs** for program and registration requirements.

Students returning from an approved PAL for participation in a registered non-UC study abroad program are not required to seek readmission, but must provide official transcripts for coursework evaluation.

## Undergraduate Readmission

To return to UCLA after an absence of more than one term, students—except for those on PAL for non-UC study abroad—must complete an **Undergraduate Readmission Application** and file it with the Registrar's Office in accordance with published deadlines. A nonrefundable fee applies.

Students must submit official transcripts from all institutions (including UCLA Extension) and a completed Statement of Legal Residence with readmission applications. Coursework is evaluated when official transcripts are received. The paper records of nonregistered students, including transcripts submitted for transfer credit, are retained by the Registrar's Office for five academic years after the last registered term.

Students who have not registered for five years must resubmit official transcripts of all work completed outside UCLA. Readmission is generally approved if students were in good academic standing (2.0 GPA) when they left UCLA, if coursework completed elsewhere in the interim is satisfactory, and if readmission applications are filed on time. The College or school may have other regulations. Contact the **readmission clerk** for more information.

READMISSION DEADLINES	
Fall Quarter	August 15
Winter Quarter	November 25
Spring Quarter	February 25

## Graduate Student Continuous Registration Policy

Graduate students must be either registered and enrolled or on an official leave of absence every term until their degrees are awarded. As an exception, certain graduate students may be eligible to pay the filing fee. Failure to register, have filing fee status, or be on an official leave of absence for any term (fall, winter, or spring quarter) constitutes withdrawal from UCLA.



## Graduate Leave of Absence

Continuing graduate students in good standing (3.0 GPA or above) who have completed at least one term of UCLA graduate work may, with the support of their department and approval of the Division of Graduate Education, be eligible for leaves of absence. Graduate students are allowed three quarters of official leave of absence. See the [Leave of Absence Request](#) web page; for filing deadlines, see the Registrar's [term calendar](#).

Federal policy governing students on F-1 and J-1 visas restricts leaves of absence to certain conditions. The [Dashew Center for International Students and Scholars](#), in consultation with the Division of Graduate Education, individually evaluates each international graduate student request for a leave of absence to determine that it meets federal (and UCLA) eligibility criteria.

Students on approved leave of absence are not permitted to use faculty time or make use of UCLA facilities for more than 12 hours since their last registration, and are not eligible for apprentice personnel employment or other services normally available to registered students. There is no need to apply for readmission, since the approved leave is for readmission to a specific term. The Registrar's Office notifies students about registration for the returning term.

Research doctoral students who are new parents or who are confronted with extraordinary parenting demands should consult [Standards and Procedures for Graduate Study at UCLA](#) (PDF) regarding Graduate Council policy requiring program accommodations for them.

## In Absentia Registration

Academic and professional graduate students who conduct research or engage in approved degree program-related activities outside California may be eligible for in absentia registration. Students registered in absentia pay 15 percent of tuition and the student services fee, but pay the full amounts of other mandatory fees such as health insurance and nonresident supplemental tuition (if applicable). In absentia registration and fee reductions may be used for a maximum of six quarters or four semesters for academic doctoral students, and up to three quarters or two semesters for master's and professional graduate students. See the [In Absentia Registration Petition](#) web page.

## Graduate Student Readmission

Students who are granted a formal leave of absence do not have to apply for readmission if they resume their graduate work in accordance with the terms of the leave. All other continuing graduate students who fail to register for any

regular session, or who fail to complete a term through cancellation or withdrawal, must apply for readmission.

Students who have registered at any time as a graduate student at UCLA and return after an absence (except a formal leave of absence) must file an [Application for Graduate Admission](#). Payment of the nonrefundable application fee may be made by credit card only. Transcripts of all academic work completed since registration at UCLA as a graduate student must also be submitted.

## Transcripts and Records

The transcript is the complete record of a student's academic work at UCLA. The Registrar prepares, maintains, and permanently retains this record. Additional records may include financial and personal student information.

### Transcripts

The transcript reflects all undergraduate and graduate work completed in UCLA regular and summer sessions. It lists chronologically courses, units, grades, cumulative GPA, transfer credits, and total units.

An official UCLA paper academic transcript is printed on security paper to safeguard against unauthorized duplication, alteration, and misrepresentation. The paper has a faint multicolor security background design, and a border bearing the words *University of California, Los Angeles*. Authentication details are located in the lower right-hand corner of the transcript. The legend is located on the reverse of the document.

An official UCLA electronic (PDF) academic transcript includes a cover page with UCLA, student, and recipient information. Transcript pages have a background design (except for transcripts sent to LSAC, which have no background design). Identifying text is located at the top of the page. Authentication details are located in the lower right-hand corner of the transcript. A legend page is also included.

Two types of official UCLA transcript—academic transcript and proof of enrollment—are designed to meet specific needs. Both can be ordered through [MyUCLA](#), as can an unofficial (student copy) academic transcript.

### Academic Transcript

The academic transcript is a student's complete academic record, including a list of courses taken, transfer credit, units, grades, grade-point average (GPA), earned UCLA degrees, and in-progress term information. In-progress information includes a list of courses in which a student enrolled during the term the transcript was ordered, and

other in-progress information such as a change in major or removal of an I grade.

Grades for completed terms are processed immediately following the conclusion of final examinations. Complete academic transcripts are available approximately two weeks after the last day of the term. For graduating students, academic transcripts with the graduation date included are available approximately six weeks after the term-end date. Students who need earlier proof of graduation may contact a [degree auditor](#).

For auto insurance good-student discount purposes, an academic transcript can be attached to the insurance form; or the form can be presented at 1113 Murphy Hall.

## Proof of Enrollment

Proof of enrollment certifies registration (fee payment and enrollment status) and degrees earned. It does not display courses or grades, but does include enrollment status, degree-expected term, and UCLA degree awarded with date of award. Proof of enrollment confirms student enrollment status only after registration fees have been paid for the term.

Verification of student workload is based on actual enrolled units. It does not consider wait-listed units. A study list of 12 or more units for registered undergraduate students, or 8 or more units for registered graduate students, is considered full-time status for enrollment reporting, insurance, intercollegiate athletics, and financial aid purposes.

Verification of degree can be issued after the degree has been posted to the student record, approximately six weeks after the term ends. Students who need verification before the degree is posted may contact a [degree auditor](#).

## Third-Party Verifications

UCLA has authorized [National Student Clearinghouse](#) to act as its agent for all third-party verifications of student enrollment and degrees, including those for loans and creditors. Approved by the U.S. Department of Education, the Clearinghouse is a national organization that facilitates and expedites student enrollment verifications for creditors and other student service-related agencies. The Clearinghouse abides by all provisions of the Family Educational Rights and Privacy Act (FERPA). Degree verification for the most recent term is available approximately seven weeks after the term ends.

## Ordering Transcripts

Continuing students must order official academic transcripts through [MyUCLA](#). Other students may order transcripts through [MyUCLA](#) or [Parchment](#). Most students can

order proof of enrollment through a [proof of enrollment request](#).

Orders are not processed if students have outstanding financial, academic, or administrative obligations (holds) to UCLA. Transcripts of work completed elsewhere must be requested directly from the campus or institution concerned.

More information about ordering transcripts is available on the Registrar's [student records](#) web page or by sending e-mail to the [transcripts unit](#).

For UCLA Extension transcripts, [order online](#) or by mail from UCLA Extension, PO Box 24901, Department K, Los Angeles, CA 90024-0901.

## Fees and Payment

Most academic transcripts and proofs of enrollment are available at no charge after payment of the [document fee](#).

A fee may be charged for some transcript-related services. For example, forms that must be completed by the Registrar's Office and envelopes that require official signatures incur a special handling fee. Transcripts can be faxed for an additional fee. Faxed transcripts are generally not considered official, and confidentiality cannot be guaranteed. For exact fees, see [transcript-related fees](#).

## Student Records

Student files of pertinent documents are maintained for up to five years from the admit term. Students may [view their records](#) at the Registrar's Office, 1113 Murphy Hall. A five-day advance notice is required for viewing.

See also regulations concerning [Disclosure of Student Records](#).

## MyUCLA

Through [MyUCLA](#), students can obtain academic, financial, and personal information from their UCLA academic records.

## Name or Address Change

Students who wish to change their legal name on official UCLA records should submit a [Legal Name Change or Correction](#) request. Supporting documentation is required. Students on an F or J visa must provide a current passport bearing the exact same name as the new name. All name changes are recorded on the transcript.

Student address changes should be updated through [MyUCLA](#).

## Closure of Student Records

Student records are closed to revisions in enrollment, grading, and academic actions on award of a degree. Students are responsible for requesting review of their record prior

to award of their degree. See [UCLA Procedure 220.1](#), *Student Grievances Regarding Challenge to Content of Student Records Under the Family Educational Rights and Privacy Act*.

Changes requested by an individual after award of a degree are considered by the College or school only under extraordinary circumstances. Supportive documentation is required. On action of the academic dean, a statement of the request for revision and a note of the change will be recorded only in the memoranda section of the transcript.

## Maintaining Student Work

During their academic careers at UCLA, undergraduate students create evidence of their learning, which includes but is not limited to course projects, papers, and assignments; student responses on examinations; and documentation of student performance and creative expression. Regularly, and on an ongoing basis, faculty may choose to store a sample of this evidence in digital archives maintained by the Division of Undergraduate Education. All information stored, created, or derived by this archival function is governed by the faculty and the leadership of UCLA academic departments and interdepartmental degree programs. The purpose of maintaining this archive is to make this evidence available exclusively for departmental research studies conducted to inform academic program improvement and to ensure institutional effectiveness.

In the event an academic department or interdepartmental program chooses to conduct a program improvement research study, it may opt to use a sample of evidence that it has chosen to archive, and it may grant permission for the Division of Undergraduate Education, Division of Graduate Education, or other collaborators from the UCLA academic community to evaluate and analyze the student learning. The evidence of student learning is stored anonymously, with no identifiers of individual students attached to the records in the archive. Assessment of student performance in program improvement research studies is not connected with any academic record of the individual student's performance. Assessment reports may be created for internal departmental improvement purposes only, and they may include an aggregation of student characteristics associated with learning achievement. Evidence of student learning is purged from the digital archive after being stored for a period of 12 years, to ensure it can be made available for analysis of departments and programs in support of the Academic Senate program review requirements.

Students can designate that materials they created, which have been sampled by the faculty, be excluded from the Division of Undergraduate Education digital archive by [opting out](#) online.

## Degrees

Students must satisfy UC requirements, College or school requirements, and department requirements as described in this catalog.

## Undergraduate Degrees

Undergraduate degree requirements are subject to the following degree policies.

### Student Responsibility

It is students' responsibility to keep informed of and to comply with the rules, regulations, and policies affecting their academic standing. Meeting academic deadlines, monitoring the study list for accuracy, completing requisites, and fulfilling degree requirements are all part of their academic duties as students.

### Minimum Scholarship

The grades A through C and Passed (P) denote satisfactory progress toward the bachelor's degree. The grades C– through D– yield unit credit but may not satisfy certain scholarship requirements. Even when they do, they must be offset by grades of C+ or better in other courses. Students must earn at least a 2.0 (C) grade-point average (GPA) in all courses taken at any UC campus. Students who fail to maintain this level may be placed on academic probation or may become subject to dismissal. The College and each school may set additional scholarship requirements.

### Academic Probation

Students are placed on probation if their overall or term GPA falls between 1.5 and 1.99. While they are on probation, they may not take any course on a Passed/Not Passed (P/NP) basis. Probation ends at the close of a regular term if students have attained a 2.0 (C) GPA for the term and a cumulative 2.0 (C) GPA in all UC coursework. Students who do not end probation within two terms are subject to dismissal.

### Academic Dismissal

Students are subject to dismissal from UCLA under any of the following conditions:

- Their GPA in any one term is lower than 1.5
- They do not earn at least a 2.0 (C) GPA in any term when they are on probation
- They do not end probation within two terms

If students are subject to dismissal, their transcripts carry that notation. Students should make an appointment with their College or school counselor. Depending on the situation, they are given conditions for continuation or are dismissed from UCLA.

## Progress toward the Degree

UCLA is a full-time institution, and it is expected that students complete their undergraduate degree requirements promptly. Normal progress toward graduation in four years is defined as the completion of 45 units per year, or 15 units per term.

## Minimum Progress and Expected Cumulative Progress

The College and each school enforce minimum progress regulations. The College also enforces expected cumulative progress regulations. Students may be subject to disqualification for failing to meet minimum progress and expected cumulative progress requirements. See [College and Schools](#) for specific minimum progress, expected cumulative progress, and study list regulations.

## Petitions

A petition is a form submitted to explain an exception from any UCLA or UC standard rule or regulation. It is the only way to obtain formal approval from the department, College or school, Registrar, or office with authority over a particular request. Some petitions require a fee.

Some uses of petitions are to change the College, school, or major; take more or fewer units than regulations permit; make changes to the study list after MyUCLA processing ends; or obtain credit by examination. Students may petition for concurrent enrollment, double major, or waiver of scholarship requirements.

## Transfer Credit

Every California community college has transfer course agreements that specify which courses will receive transfer credit. These courses are displayed on [ASSIST](#), the state-wide transfer information website. Students can get some knowledge of transfer credit from accredited institutions other than the University of California, or California community colleges, by comparing the descriptions of courses taken with those in this catalog.

Once students complete the courses, they must have the other institution send official transcripts to UCLA Undergraduate Admission electronically through an approved vendor or by mail to Box 951436, Los Angeles, CA 90095-1436. Transfer students should discuss transfer credit with their College or school and/or department adviser.

## Community College/Lower Division Transfer Limitation

After completing 105 lower-division quarter units toward the degree at all institutions attended, students are allowed no further unit credit for courses completed at a community college or for lower-division courses completed at any

institution outside of the University of California. The University of California does not grant transfer credit for community college or lower-division courses beyond 105 quarter units, but students may still receive subject credit for this coursework to satisfy lower-division requirements. Units earned through Advanced Placement (AP), International Baccalaureate (IB), and/or A-Level examinations are not included in the limitation. Units earned at any UC campus (through extension, summer, cross-campus, UCEAP, Intercampus Visitor Program, and regular academic year enrollment) are not included in the limitation. To convert semester units into quarter units, multiply the semester units by 1.5; for example, 12 semester units  $\times 1.5 = 18$  quarter units. To convert quarter units into semester units, multiply the quarter units by .666; for example, 12 quarter units  $\times .666 = 7.99$  or 8 semester units.

## Summer Session Courses

Summer session grades at any UC campus are computed in the UCLA grade-point average.

## UCLA Extension

Students who wish to receive degree credit for work taken through UCLA Extension should take courses that correspond in number to the undergraduate courses offered in regular session. The designation XL or XLC before the number of the Extension course signifies that the course is equivalent to the regular-session course bearing the same number. Grades earned by undergraduate students in the School of the Arts and Architecture, School of Education and Information Studies, College of Letters and Science, and Herb Alpert School of Music in courses prefixed by XLC are computed in the UCLA grade-point average. No degree credit is given for courses numbered X300 through X499. Concurrent enrollment in Extension and regular session is not permitted.

## Degree Checks

Any time before graduation, a student may request an official degree check. This review of degree progress details requirements that remain to complete the bachelor's degree. The degree-check process may be different for the College and each school.

The [Degree Audit](#)—a computer-generated assessment of all degree requirements and the courses taken to fulfill them—is an essential review tool. It can be viewed and printed through [MyUCLA](#), or ordered at a counseling office. The student should review their Degree Audit with their College, school, or department counselor to ensure that all requirements will be satisfied. Engineering students are encouraged to also consult the [school undergraduate degree audit](#) web page.

- **College of Letters and Science**  
[Academic Advancement Program](#), 1209 Campbell Hall  
[Center for Academic Advising in the College](#), A316  
 Murphy Hall  
[College Honors Programs](#), A311 Murphy Hall  
[Student Athletics](#), Morgan Center
- **School of the Arts and Architecture**  
[Office of Student Services](#), 2200 Broad Art Center
- **School of Education and Information Studies**  
[Office of Student Services](#), 1002 Moore Hall
- **Henry Samueli School of Engineering and Applied Science**  
[Office of Academic and Student Affairs](#), 6246 Boelter Hall
- **Herb Alpert School of Music**  
[Office of Student Affairs](#), 1642 Schoenberg Music Building
- **School of Nursing**  
[Student Affairs Office](#), 2-147 Factor Building
- **Meyer and Renee Luskin School of Public Affairs**  
[Student Services Office](#), 3250 Public Affairs Building
- **Jonathan and Karin Fielding School of Public Health**  
[Office of Undergraduate Student Services](#), 16-059  
 Center for Health Sciences
- **School of Theater, Film, and Television**  
[Student Services Office](#), 103 East Melnitz Building

## Graduate Degrees

For graduate degree requirements and procedures, see [program requirements for UCLA graduate degrees](#) and [Standards and Procedures for Graduate Study at UCLA](#) (PDF).

## Certificate of Resident Study

International students who must leave UCLA and the U.S. before completing a degree or certificate program may request a Certificate of Resident Study in addition to a formal transcript. The certificate cannot be awarded if the studies involved are covered by a diploma or other certificate. The chair of the major department recommends award of the certificate through a petition to the College, school, or Division of Graduate Education.

To be eligible to receive the certificate, students must have completed a program of at least nine courses with a minimum GPA of 2.0 (2.5 for Division of Graduate Education students) and have satisfactorily completed a research project over a period of nine or more months.

## Graduation

The awarding of degrees is the culmination of several steps that begin when students identify the term in which they expect to complete degree requirements.

## Undergraduate Students

Approximately nine out of every 10 UCLA undergraduates eventually receive a bachelor's degree, either from UCLA or from another campus or institution. One-third of all UCLA bachelor's degree recipients go on to graduate school.

## Declaration of Candidacy

All undergraduate students are assigned a degree-expected term when they first register at UCLA. This term is based on admission level (first-year or advanced standing), and time-to-degree based on undergraduate program. For most students, this is 12 regular terms (first-year) or six regular terms (transfer). Students must petition the College or school counseling unit to enroll in additional regular terms beyond the allowed number.

Friday of finals week is the last day to declare candidacy for the current term.

Students can verify the [degree-expected term](#) through MyUCLA. For questions about degree candidacy status, College students may contact the Registrar's Office. All other students should contact their school office. Declaring candidacy is not a guarantee of graduation.

## In Absentia Graduation

Students who intend to complete degree requirements while nonregistered (those who take a course through UCLA Extension or at another institution, remove an Incomplete grade, and so on) must notify their degree auditor of their intention to graduate as a nonregistered student by Friday of finals week. Students graduating in absentia are assessed the undergraduate in absentia degree-processing fee if they were not also registered in the term immediately prior to their degree-expected term.

## Retroactive Degree and Graduation

Students who do not declare candidacy in the term that final degree requirements are met, or who had pending degree-related issues (such as grade changes, department approval of major courses, or advanced-standing work at other institutions) in the declared term, must submit a Retroactive Degree Request form. If the request is approved, the degree is recorded on the transcript immediately, and the student record is closed to any further revision. The \$75 special order diploma fee applies.



## Final Degree Audits and Graduation

Degree auditors are responsible for verifying each candidate's eligibility for a bachelor's degree. Degree auditors have information pertaining to a student's graduation only if that student declared candidacy and completed 160 quarter units (172 units for engineering students). Degree auditors are available in the following offices:

- **College of Letters and Science**  
[Registrar's Office](#), 1113 Murphy Hall
- **School of the Arts and Architecture**  
[Office of Student Services](#), 2200 Broad Art Center
- **School of Education and Information Studies**  
[Office of Student Services](#), 1002 Moore Hall
- **Henry Samueli School of Engineering and Applied Science**  
[Office of Academic and Student Affairs](#), 6246 Boelter Hall
- **Herb Alpert School of Music**  
[Office of Student Affairs](#), 1642 Schoenberg Music Building
- **School of Nursing**  
[Student Affairs Office](#), 2-147 Factor Building
- **Meyer and Renee Luskin School of Public Affairs**  
[Student Services Office](#), 3250 Public Affairs Building
- **Jonathan and Karin Fielding School of Public Health**  
[Office of Undergraduate Student Services](#), 16-059 Center for Health Sciences
- **School of Theater, Film, and Television**  
[Student Services Office](#), 103 East Melnitz Building

During their graduating term, students should inform a degree auditor of grade changes, petitions for substitutions or exemptions, transfer credits, or similar changes that may affect their degree. If graduation eligibility cannot be verified, a degree auditor notifies the student of any outstanding requirements or other degree completion problems.

Student records are closed to revisions in enrollment, grading, and academic actions on award of a degree. Students are responsible for requesting review of their record prior to award of their degree.

A summary of shortages for the bachelor's degree statement is sent to each current-term candidate who does not satisfy degree requirements that term. Students who receive such notices should contact a degree auditor immediately. If students expect to satisfy degree requirements in a later term, they must change their degree-expected term through MyUCLA. They may be assessed applicable fees.

Contact degree auditors only for questions about degree audits. Contact information is published on the Registrar's [service directory](#). Do not contact auditors regarding commencement procedures; see [Commencement](#).

## Graduate Students

Candidates for both master's and doctorate degrees must be advanced to candidacy and complete all degree requirements—including the master's thesis or capstone, or doctoral dissertation—before the degree is conferred. See the [filing deadlines calendar](#) for thesis/dissertation filing deadlines. For graduate degree requirements and procedures, see [program requirements for UCLA graduate degrees and Standards and Procedures for Graduate Study at UCLA](#) (PDF).

## Degree Date

Degrees are awarded at the end of fall, winter, and spring quarters and at the end of summer session C. School of Law and School of Medicine degrees are normally awarded at the end of fall and spring semesters. See the UCLA [term calendar](#) for the degree-award date, which is the final day of the term.

## Commencement

The College, each school, and the Division of Graduate Education conduct commencement ceremonies for their graduates. Ceremonies feature addresses from distinguished speakers, and recognize candidates who have achieved high academic distinction and honors.

Check with the College, school, or department for eligibility requirements, programs, and time schedules. [Commencement](#) information—including the schedule of ceremonies, maps and parking, and updates—is published online. [Doctoral hooding ceremony](#) information is also published online.

## Privacy

Names of students who request that no public information be released do not appear in commencement ceremony programs. Students may change their [privacy status](#) on MyUCLA.

## Diplomas

Diplomas for both undergraduate and graduate students are available approximately three months after the degree-award date. After week three of their expected term of graduation, students should provide instructions for obtaining the diploma in person or by mail using the [diploma request](#) feature on MyUCLA. To expedite receipt of diplomas, instructions should be given no later than one month after the last day of the degree term. Students may

also request diplomas in person at 1113 Murphy Hall or by returning a [Diploma Mail Request](#) form.

## Name Change

To appear on the diploma, a name change must be submitted using a [Legal Name Change or Correction](#) by the last day of the degree-expected term. Supporting documentation is required. Once the degree is awarded, only a court order will be accepted to make a name change; a replacement diploma fee applies.

## Replacement Diploma

If an original diploma is destroyed, a replacement may be ordered by using the [diploma request](#) feature on MyUCLA. Students may also order a replacement diploma in person at 1113 Murphy Hall, or by returning a [Replacement Diploma Request](#) form. A replacement diploma fee applies. The new diploma bears a reissue date and signatures of current California, UC, and UCLA officials.

# Administrative Policies

## Alcohol and Substance Policies

UCLA is designated as a drug-free environment, and only under certain conditions is alcohol consumption permitted. In keeping with its educational mission, the University assumes the responsibility to better inform the UCLA community about alcohol and substance abuse.

The sale, manufacture, distribution, or possession of designated controlled substances without a prescription is illegal under both state and federal laws. Such laws are strictly enforced by UCPD police officers. Student violators are subject to University disciplinary action, criminal prosecution, fine, and imprisonment. Refer to the UCLA policies on substance abuse for further information.

The sale, consumption, and distribution of alcohol on the UCLA campus is restricted by the UCLA alcohol policy and California state law. Organizations or groups violating alcohol or substance policies or laws may be subject to sanctions by the University.

## Financial Aid Standards for Satisfactory Academic Progress

UCLA Financial Aid and Scholarships establishes standards for satisfactory academic progress to measure students' progress toward degree completion using both qualitative and quantitative methods in accordance with federal regulations. To be eligible for financial aid, students must meet or exceed these standards. Failure to maintain these standards may result in suspension of financial aid eligibility. The

standards are as strict as, or more strict than, the UCLA standards for a student enrolled in the same educational program who is not receiving Title IV assistance. See the [Standards for Satisfactory Academic Progress Guide](#) (PDF).

## Professional Schools

Students attending the schools of Dentistry, Law, Management, Medicine, and UCLA Extension are covered by criteria established by the respective school.

## Qualitative Standard

Undergraduate students must maintain a cumulative 2.0 grade-point average (GPA); graduate students must maintain a cumulative 3.0 GPA.

## Quantitative Standard

Students must complete a minimum of 67 percent of cumulative coursework attempted.

## Maximum Time Frame

Units attempted or total enrolled terms may not exceed 150 percent of the published length of the student's program.

## Academic Major Change/Pursuit of Double Major or Minor

Students who change their academic major, or pursue a double major or minor, do not have additional financial aid eligibility beyond the maximum time frame established in this policy.

## Successful Completion of Units

To successfully complete units, students must receive a grade of A, B, C, D, or P (S for graduate students) in each course. Grades of F, I, NP (U for graduate students), NR (No Report), and DR (Deferred Report) do not count as successful completion of coursework attempted.

The standards for satisfactory academic progress apply to all coursework attempted, including coursework for which students did not receive financial aid.

## Cancellation of Registration

Cancellation of registration on or before the first day of classes does not count as units attempted.

## English as a Second Language and Summer Sessions Coursework

English as a Second Language (ESL) and Summer Sessions coursework counts as units attempted, and toward the cumulative grade-point average.

## Remedial Coursework

Remedial coursework counts as units attempted, but does not count toward the cumulative grade-point average.

## Repeat Coursework

Repeated courses and grade-point average are treated in accordance with the academic policy as outlined in this *Catalog*. If the Registrar's Office counts repeat coursework as attempted/completed, it counts equally for academic progress standards. Financial Aid and Scholarships determines if students are eligible for aid for repeat coursework.

## Transfer Coursework

Coursework accepted for transfer credit counts as both units attempted and completed, and has no effect on grade-point average unless the coursework is transferred from another UC campus.

## Withdrawal

Withdrawal after the first day of classes during a term counts as units attempted, unless students do not attend any classes for the given term and receive a 100 percent refund of all fees.

## Evaluation

Academic progress is evaluated annually after winter quarter grades are available. For students on probation and students who are required to follow an academic plan, academic progress is evaluated each term.

## Suspension

Students who fail to meet the standards for satisfactory academic progress are placed on suspension and are no longer eligible to receive financial aid. Suspended students are notified through their MyUCLA account.

## Appeal Process

Students who have their financial aid suspended may submit a written appeal using the Satisfactory Academic Progress Appeal form. When filing an appeal, they must provide a full explanation along with documentation, verifying the circumstances that led to their inability to meet the standards for satisfactory academic progress. Before filing an appeal, students should seek assistance from an academic adviser

to explore ways to eliminate deficiencies and to establish a realistic plan toward graduation. Refer to the appeal instruction packet for specific examples of valid reasons for an appeal.

## Appeal Deadline

Appeals must be submitted to Financial Aid and Scholarships prior to the last day of the term for which students are appealing to have aid reinstated. Retroactive appeals are not considered. Refer to the appeal instruction packet for priority deadlines.

## Denied Appeals

If the appeal is denied, students may file a secondary appeal and submit additional information that may help explain the circumstances by which they were not able to maintain the standards for satisfactory academic progress. They are notified of the decision of the secondary appeal in writing; the decision is final.

## Probation

Students who have an appeal approved are placed on probation and their academic progress monitored on a quarterly basis to ensure that they meet the conditions of their academic plan.

## Reinstatement

Students whose aid eligibility has been suspended for failing to maintain the standards for satisfactory academic progress, or whose satisfactory academic progress appeal has been denied, may regain financial aid eligibility by becoming compliant with the qualitative and quantitative components of the academic progress standards. Students who exceed the maximum time frame cannot regain eligibility through the reinstatement process.

## Academic Plans

If students are required to submit an academic plan as a condition of their approved appeal, their financial aid cannot be disbursed until Financial Aid and Scholarships confirms that they are adhering to their academic plan. Students on an academic plan are evaluated each term. Their ability to adhere to the units and courses specified in their academic plan is closely monitored. Failure to adhere to their academic plan causes delays in students' aid being disbursed, and may result in suspension of their financial aid eligibility.

## Residence for Tuition Purposes

Students who have not been living in California with intent to make it their permanent home for more than one year immediately before the residence determination date for

each term in which they propose to attend UCLA must pay nonresident supplemental tuition in addition to all other fees. The residence determination date is the day instruction begins at the last of the University of California campuses to open for the quarter; for schools on the semester system, it is the day instruction begins for the semester.

## Who Is a Resident

Persons who are adult students (at least 18 years of age) may establish residence for tuition purposes in California if they are

1. a U.S. citizen
2. a permanent resident or other immigrant, or
3. a nonimmigrant who is not precluded from establishing a domicile in the U.S. Nonimmigrants who are not precluded from establishing a domicile in the U.S. include those who hold valid visas of the following types: A, E, G, H-1, H-4, Humanitarian Parole, I, K, L, N-8, N-9, NATO 1-7, O-1, P-1, P-2, P-3, R, T, U, or V

To establish residence in California, students and/or parents must be physically present in California for more than one year, and they must have come here with the intent to make California their home as opposed to coming to this state to go to school.

Graduate students can establish eligibility independently from their parents.

Undergraduate students under 24 years of age must prove their eligibility as well as their parents' unless if the student proves financial independence. Physical presence within the state solely for educational purposes does not constitute the establishment of California residence, regardless of the length of stay.

Students and/or parents must demonstrate their intention to make California their home by severing any and all residential ties with their former state of residence and establishing those ties with California. If these steps are delayed, the one-year durational period is extended until students and/or parents have demonstrated both presence and intent for one full year.

If their parents are not California residents (over one year of physical presence with intent to remain in the state), students are required to be financially independent in order to be a resident for tuition purposes. Their residence cannot be derived from their spouse, registered domestic partner, or their parents.

## Requirements for Financial Independence

A student is considered financially independent if one or more of the following apply: the student

1. is at least 24 years of age by December 31 of the academic year for which they are requesting residence classification
2. is a veteran of the U.S. Armed Forces
3. is serving in the U.S. Armed Forces, including reserve components of these forces
4. is a ward of the court or a foster youth or both parents are deceased
5. has legal dependents other than a spouse
6. is married or has a registered domestic partner as of the residence determination date
7. has been determined to be an unaccompanied youth who was homeless pursuant to federal financial aid rules
8. receives an independent student status determined by UC campus financial aid office
9. is declared by a court to be an emancipated minor
10. is a graduate or professional student
11. is a single undergraduate student and was not claimed as an income tax deduction by their parents or any other individual for the one tax year immediately preceding the term for which they are requesting resident classification; and can demonstrate self-sufficiency for one full year prior to the residence determination date of the term they propose to attend the University, through their own resources (such as employment, commercial loans, financial aid, and savings that can be officially documented). The one year required for self-support might not coincide with the one tax year during which the student must not have been claimed by their parents

## Establishing Intent to Become a California Resident

Indications of student intent to make California their permanent residence can include the following:

1. registering to vote and voting in California elections
2. designating California as their permanent address on all school and employment records, including military records if they are in the U.S. Armed Forces
3. obtaining a California Driver License or, if they do not drive, a California Identification Card
4. obtaining California vehicle registration

5. paying California income taxes as a resident, including taxes on income earned outside California from the date they establish residence
6. establishing a California residence in which they keep their personal belongings
7. licensing for professional practice in California

Maintaining these indicia in other states during any period for which students claim residence can also serve as an indication of their intent. Documentary evidence is required, and all relevant indications are considered in determining the classification. Intent is questioned if students return to their prior state of residence when UCLA is not in session.

## Temporary Absences

If persons are nonresident students who are in the process of establishing a residence for tuition purposes and they return to their former home during noninstructional periods, their presence in the state is presumed to be solely for educational purposes and only convincing evidence to the contrary rebuts this presumption. Students who are in the state solely for educational purposes are not classified as residents for tuition purposes regardless of the length of their stay.

If persons are students who have been classified as residents for tuition purposes and they leave the state temporarily, their absence could result in the loss of their California residence. The burden is on students (or their parents if they are minors) to verify that they did nothing inconsistent with their claim of a continuing California residence during their absence. Steps that students (or their parents) should take to retain a California residence include the following:

1. maintain a domicile in California
2. continue to use a California permanent address in all records—educational, employment, military, etc.
3. continue to satisfy California Resident tax obligations. If a student claims California residence, they are liable for payment of income taxes on their total income from the date they establish their residence in the state, including income earned in another state or country
4. retain California voter registration and vote by absentee ballot
5. maintain a California driver license and vehicle registration. If it is necessary to change the driver license or vehicle registration, the student must change them back within the time prescribed by law

## General Rules Applying to Minors

If students are unmarried minors (under age 18), the residence of the parent with whom they live is considered to be their residence. If they have a parent living, they cannot change their residence by their own act, by the appointment of a legal guardian, or by the relinquishment of their parent's right of control. If students live with neither parent, their residence is that of the parent with whom they last lived. Unless they are minor aliens present in the U.S. under the terms of a nonimmigrant visa that precludes them from establishing a domicile in the U.S., students may establish their own residence when both their parents are deceased and a legal guardian has not been appointed. If they derive California residence from a parent, that parent must satisfy the one-year durational residence requirement.

## Specific Rules Applying to Minors

### Divorced or Separated Parents

Minor U.S. citizens or eligible aliens may be able to derive California resident status from a California resident parent, if they move to California to live with that parent before their 18th birthday. If they begin residing with their California parent after their 18th birthday, they are treated like any other adult student coming to California to establish residence.

### Parent of Minor Moves from California

Students may be entitled to resident status if they are minor U.S. citizens or eligible aliens whose parent(s) was a resident of California who left the state within one year of the residence determination date if they

1. remained in California after their parent(s) departed
2. enroll in a California public postsecondary institution within one year of their parent(s) departure, and
3. once enrolled, maintain continuous attendance in that institution

Financial independence is not required in this case.

### Two-Year Care and Control

A minor or 18-year-old student may be entitled to resident classification if, immediately prior to enrolling in a postsecondary institution, they have been living with and been under the continuous direct care and control of an adult or adults other than a parent for a period of no less than two years. The adult or adults having control must have been residents of California during the one year immediately prior to the residence determination date. The classification continues until students have attained the age of 19 and have lived in the state the minimum time necessary to



become a resident, so long as continuous full-time attendance is maintained at a public postsecondary institution.

## Self Support

If students are U.S. citizens or eligible aliens and are minors who can prove that they lived in California for the entire year immediately before the residence determination date, that they have been self-supporting for that year, and that they intend to make California their permanent home, they may be eligible for resident status.

## Exemptions from Nonresident Supplemental Tuition

### Member of the U.S. Armed Forces

Some members of the U.S. Armed Forces may qualify for an exemption from nonresident supplemental tuition based on the federal Higher Education Opportunity Act of 2008. Under this Act, undergraduate and graduate students who are members of the U.S. Armed Forces on active duty for a period of more than 30 days, and whose domicile or permanent duty station is in California, are entitled to an exemption from nonresident supplemental tuition. Students must be continuously enrolled at the University, notwithstanding a subsequent change in their permanent duty station to a location outside of California.

Effective July 2015, certain members of the U.S. Armed Forces on active duty and veterans (and their dependents) who were separated from U.S. military service are eligible for G.I. Bill (Post-9/11 or Montgomery) program funds may qualify for an exemption from nonresident supplemental tuition.

### Special Circumstances

Members of the U.S. Armed Forces stationed in California are entitled to resident classification unless their assignment to California is for the purpose of attending a state-supported institution of higher education. They must provide the campus residence deputy with a statement from their commanding officer or personnel officer stating that their assignment to active duty in California is not for educational purposes. The letter must include the dates of their assignment to the state.

Students discharged from military service after having been stationed in California on active duty for at least 366 days are entitled to resident classification for the minimum time necessary to establish residence (366 days).

### Spouse or Other Dependents of Military Personnel

Some dependents of members of the U.S. Armed Forces may qualify for an exemption from nonresident supplement-

tal tuition based on the federal Higher Education Opportunity Act of 2008. Under this Act, undergraduate or graduate students who are the spouse or dependent child of a member of the U.S. Armed Forces on active duty for a period of more than 30 days and whose domicile or permanent duty station is in California, are entitled to an exemption from nonresident supplemental tuition. Students must be continuously enrolled at the University, notwithstanding a subsequent change in the U.S. Armed Forces member's permanent duty station to a location outside of California.

### Special Circumstances

Undergraduate students are entitled to resident classification if they are a spouse, natural or adopted child, or stepchild who is a dependent of a member of the U.S. Armed Forces stationed in California. If they are enrolled in an educational institution and the U.S. Armed Forces member is transferred on military orders to a place outside California where he or she continues to serve in those forces, or the U.S. Armed Forces member retires from active duty immediately after having served in California on active duty, they may retain resident status as long as they remain continuously enrolled at that institution.

### California School Attendee (AB 540)

Under California law AB 540, certain nonresident students are exempt from paying nonresident supplemental tuition. To be eligible, students must have attended three full-time years at a California high school (9th grade included), adult school, and community college, or attained credits/units earned in California from a California high school equivalent to three or more years of full-time high school coursework and attended a combination of elementary, middle, and/or high school (K-12) in California for a total of three or more years; and graduated from a California high school (or attained the equivalent, such as a High School Equivalency Certificate issued by the state of California or a Certificate of Proficiency resulting from the California High School Proficiency Examination), attained an associate's degree from a California community college, or fulfilled minimum transfer requirements from a California community college to a UC campus. See [AB 540 nonresident tuition exemption](#). Non-immigrant alien students are not eligible for the exemption.

### Child, Spouse, or Registered Domestic Partner of a UC Faculty Member

To the extent funds are available, if a student is an unmarried dependent child, spouse, or registered domestic partner of a member of the University faculty who is a member of the Academic Senate, they may be eligible for a waiver of nonresident supplemental tuition resident classification. Confirmation of the faculty member's membership in the

Academic Senate must be secured each term this waiver is granted.

### **Child, Spouse, or Registered Domestic Partner of a UC Employee**

Students may be entitled to resident classification if they are a dependent child, spouse, or registered domestic partner of a full-time University of California employee whose assignment is outside California. Their parent's, spouse's, or registered domestic partner's employment status with the University must be ascertained each term.

### **Dependent Child of a California Resident**

If students have not been an adult resident of California for more than one year and are the natural or adopted dependent child of a California resident who has been a resident for more than one year immediately prior to the residence determination date, they may be entitled to a resident classification until they have resided in California the minimum time necessary to become a resident, so long as continuous attendance is maintained at an institution.

### **Native American Graduate of a Bureau of Indian Affairs High School**

Students who are graduates of a California high school operated by the federal Bureau of Indian Affairs may be entitled to a resident classification.

### **Employee of a California Public School District**

Students holding a valid credential authorizing service in the public schools of the State of California who are employed by a school district in a full-time certificate position may be entitled to a resident classification.

### **Team USA Amateur Athlete Student**

A Team USA student athlete who trains in California in an elite-level program approved by the U.S. Olympic and Paralympic Committee is eligible for a contingent resident classification for one year, subject to continued eligibility for this provision as defined by California Education Code section 68083. Or, the student is eligible to receive a resident classification based on timely satisfaction of applicable residence requirements. The student should contact Team USA for a letter of eligibility.

### **Dependent or Ward of the State of California Child Welfare System**

Notwithstanding any other provisions, students who reside in California and who are currently dependents or wards of the state through the California child welfare system, or were served by the California child welfare system, shall be enti-

led to a resident classification as long as they remain continuously enrolled.

### **Child, Spouse, or Registered Domestic Partner of Deceased Public Law Enforcement or Fire Suppression Employee**

Students may be entitled to a waiver of nonresident supplemental tuition if they are the child, spouse, or registered domestic partner of a deceased public law enforcement or fire suppression employee who was a California resident at the time of their death, and who was killed in the course of fire suppression or law enforcement duties.

### **Congressional Medal of Honor Recipients and Their Children**

Students who are recipients of the Congressional Medal of Honor or who are the children of a recipient may be exempt from nonresident supplemental tuition.

### **Residence Classification Change**

Students may obtain a [Petition for Residence Classification](#) from the Registrar website to request a change of classification from nonresident to resident status. All changes of status must be initiated in advance of the petition filing deadline.

### **Time Limit on Submitting Documentation**

If additional documentation is required for residence classification but is not readily accessible, students have until the end of the applicable term to submit it.

### **Incorrect Classification**

Students who were incorrectly classified as residents are subject to reclassification as nonresidents and to payment of all nonresident tuition and fees not paid. If students concealed information or furnished false information and were classified incorrectly as a result, they are also subject to University discipline.

### **Student Status Change**

Resident students who become nonresidents must immediately notify the residence deputy of their change in status.

### **Inquiries and Appeals**

Inquiries regarding residence requirements, determination, and/or recognized exceptions should be directed to the [Residence Deputy](#), UCLA Registrar's Office, 1113 Murphy Hall, Box 951429, Los Angeles, CA 90095-1429, 310-825-3447.

Students are cautioned that this summary is not a complete explanation of the law regarding residence. Note that changes may be made in the residence requirements between the

publication of this statement and the relevant residence determination date.

## Grounds for Appeal

Students may appeal a campus nonresident determination to the UC Office of the General Counsel only on the grounds and within the deadline specified

1. The decision to classify a student as a nonresident for tuition purposes was based on (a) a significant error of fact; (b) a significant procedural error; or (c) an incorrect application of policy that, if corrected, would require that the student be reclassified as a resident.
2. Significant new information became available after the date of the campus decision classifying the student as a nonresident; despite the exercise of reasonable diligence (care and attention), the information was not previously known or available to the student; and based on the new information, classification as a nonresident is incorrect.

No appeals based solely on disagreement with the campus decision are acceptable.

## Appeal Deadline

The UC Office of the General Counsel must receive the appeal from the student within 30 days of the date of the campus decision notifying the student of the nonresident classification. Send the completed Application to Appeal and a copy of the nonresident decision by e-mail to the [Residency Analyst](#); fax to 510-987-9757; or mail to Residency Analyst, UC Office of the General Counsel, 1111 Franklin Street, 8th Floor, Oakland, CA 94607-5200. No other University personnel are authorized to supply information relative to residence requirements for tuition purposes.

## Privacy Notice

All information requested on the Statement of Legal Residence (SLR) form is required for determining whether or not students are legal residents of California for tuition purposes. Registration cannot be processed without this information. The Registrar's Office on campus maintains the requested information. University of California policies governing residence for tuition purposes are established by the Regents pursuant to and implemented by regulations established by the president, in consultation with the general counsel ([Regents Policy 3105](#)). Students have the right to inspect University records containing the residence information requested on the SLR form.

# Regulations

## Nondiscrimination

The University of California, in accordance with applicable federal and state laws and University policies, does not discriminate on the basis of race, color, national origin, religion, sex, gender identity, pregnancy (including pregnancy, childbirth, and medical conditions related to pregnancy and childbirth), physical or mental disability, medical condition (cancer-related or genetic characteristics), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (including membership, application for membership, performance of service, application for service, or obligation for service in the uniformed services). The University also prohibits sexual harassment and harassment on any of the above bases. This nondiscrimination policy covers admission, access, and treatment in University programs and activities.

Students may grieve any action that they believe discriminates against them on the ground of race, color, national or ethnic origin, alienage, sex, religion, age, sexual orientation, gender identity, marital status, veteran status, or perceived membership in any of these categories which results in injuries to the student by contacting the [Office of the Dean of Students](#) by e-mail, or in person at 1104 Murphy Hall. Refer to UCLA [Procedure 230.1 Student Grievances Regarding Violations of Anti-Discrimination Laws or University Policies on Discrimination](#), also available in 1104 Murphy Hall, for more information.

Inquiries regarding the University student-related nondiscrimination policies may be directed to the [Office of the Dean of Students](#) by e-mail, in person at 1104 Murphy Hall, or by phone at 310-825-3871. A staff member is available at this office to support students who need information or assistance in filing a discrimination complaint.

In accordance with applicable federal and state laws and University policy, including Title II of the Americans with Disabilities Act, Section 504 of the Rehabilitation Act of 1973, and University of California policy PACAOS-20 (Policy on Nondiscrimination), UCLA does not discriminate on the basis of physical or mental disability. Retaliation for participation in University procedures relating to complaints of discrimination is also prohibited. This nondiscrimination policy covers admission, access, and treatment in University programs and activities. UCLA is committed to prohibiting disability-based discrimination and harassment, and retaliation, performing a prompt and equitable investigation of complaints alleging discrimination, and properly remedying discrimination when it occurs. Examples of discrimination against students with disabilities include, but are not limited to: failure to engage with the student in a discussion of rea-

soning accommodations; failure to implement approved reasonable accommodations such as the provision of notes or extra time on tests; and exclusion of a qualified student from any course, course of study, or other educational program or activity because of the student's disability. Disability-based harassment is conduct which is sufficiently severe, pervasive, or persistent so as to interfere with or limit an individual's ability to participate in or benefit from the services, activities, or opportunities offered by the University.

UCLA has issued [Procedure 230.2 Student Grievances Regarding Violations of Anti-Discrimination Laws or University Policies on Discrimination on Basis of Disability](#). Students may grieve any action that they believe discriminates against them on the basis of disability by contacting the [Office of the Dean of Students](#) by e-mail, or in person at 1104 Murphy Hall. Refer to this procedure for more information.

Title IX prohibits sex discrimination, including sexual harassment and sexual violence, in any education program or activity receiving federal financial assistance. Inquiries regarding the application of Title IX may be directed to the [Title IX Office](#), 2255 Murphy Hall, 310-206-3417, or the U.S. Department of Education [Office for Civil Rights](#).

## Student Conduct Policies

Students are members of both society and the academic community with attendant rights and responsibilities. Students are expected to make themselves aware of and comply with the law, and with University and campus policies and regulations. While many UCLA policies and regulations parallel federal, state, and local laws, UCLA standards may be set higher. The [University of California Policies Applying to Campus Activities, Organizations, and Students](#) have been incorporated into the [UCLA Student Conduct Code](#) either by adapting or inserting verbatim the language of the policies. Students may contact the Office of Student Conduct for more information concerning these policies.

## Jurisdiction

The University has jurisdiction over student conduct that occurs on University property, or in connection with official University programs or functions whether on or off University property. The University may, at its sole discretion, exercise jurisdiction over student behavior that occurs off campus and would violate student conduct when the alleged misconduct indicates that the student poses a threat to the safety or security of any individual; or it involves academic work or the forgery, alteration, or misuse of any University document, record, key, electronic device, or identification.

In determining whether or not to exercise off-campus jurisdiction, the University may consider factors including but

not limited to the seriousness of the alleged misconduct; whether an alleged victim is a member of the campus community; the ability of the University to gather information, including witness statements; and whether the off-campus conduct is part of a series of actions that occurred both on and off campus.

## Types of Misconduct

Students may be held accountable for committing or attempting to commit a violation of the [UCLA Student Conduct Code](#) or for assisting, facilitating, or participating in the planning of an act that violates this Code (or an act that would be in violation of this Code if it were carried out by a student). Violations include the following types of misconduct:

**102.01: Academic Dishonesty.** All forms of academic misconduct, including but not limited to cheating, fabrication or falsification, plagiarism, multiple submissions, or facilitating academic misconduct that occurs in academic exercises or submissions.

NOTE: Allegations involving students (paid or unpaid) who were working on externally (including federally) sponsored research projects or supported by externally (including federally) funded research training grants when research misconduct involving their supported work was alleged to have occurred, may be afforded a different procedure if the external sponsor requires a process for responding to allegations of research misconduct that is similar to or based on federal research misconduct regulations. In that case, allegations are managed under [UCLA Policy 993 \(PDF\) Responding to Allegations of Research Misconduct](#) and are forwarded to the Research Integrity Officer (RIO), who then determines whether an inquiry and/or review is warranted. Should a review be conducted, a copy of the investigation committee report and the RIO's written determination of whether or not research misconduct occurred is forwarded to the dean, who may impose one or more sanctions as appropriate. Otherwise, [section III](#) of the [UCLA Student Conduct Code](#) is the applicable procedure for responding to allegations of fabrication by students. In the event that the RIO determines that the research record needs to be corrected due to a finding that research misconduct occurred, the RIO initiates a correction or retraction as appropriate.

For purposes of the [UCLA Student Conduct Code](#), the following definitions apply:

**102.01a: Cheating.** Cheating includes, but is not limited to, the use of unauthorized materials (including online sources such as Course Hero, GitHub, or Chegg), information, or study aids in any academic exercise; the alteration of any answers on a graded document before submitting it for



regrading; or the failure to observe the expressed procedures or instructions of an academic exercise (e.g., examination instructions regarding alternate seating or conversation during an examination).

**102.01b: Fabrication.** Fabrication includes, but is not limited to, falsification or invention of any information or citation in an academic exercise, including fabrication or falsification of research. Fabrication of research is making up data or results and recording or reporting them. Falsification of research is manipulating research materials, equipment, or processes; or changing or omitting data or results such that the research is not accurately represented in the research record.

**102.01c: Plagiarism.** Plagiarism includes, but is not limited to, the use of another person's work (including words, ideas, designs, or data), without giving appropriate attribution or citation. This includes, but is not limited to, representing, with or without the intent to deceive, part or all of an entire work obtained by purchase or otherwise, as the student's original work; the omission of or failure to acknowledge the true source of the work; or representing an altered but identifiable work of another person or the student's own previous work as if it were the student's original or new work.

Unless otherwise specified by the faculty member, all submissions, whether in draft or final form, to meet course requirements (including a paper, project, examination, computer program, oral presentation, or other work) must either be the student's own work, or must clearly acknowledge the source.

**102.01d: Multiple Submissions.** Multiple submissions includes, but is not limited to, the submission for credit in a UCLA course of any work that has been previously submitted in identical or similar form, at any educational institution, to fulfill the requirements of another course, without the informed permission/consent of the instructor of the UCLA course in which the multiple submission is alleged to have occurred. Multiple submissions also includes the submission of work for credit, in identical or similar form in concurrent courses without the permission/consent of the instructors of both courses.

**102.01e: Facilitating Academic Dishonesty.** Facilitating academic dishonesty includes, but is not limited to, knowingly helping another student commit an act of academic dishonesty; or publishing assignments, examinations, or solutions without permission of the instructor.

**102.01f: Coercion Regarding Grading or Evaluation of Coursework.** Threatening personal or professional repercussions or discipline against an instructor to coerce the instructor to change a grade or otherwise evaluate the student's work by criteria not directly reflective of coursework.

**102.01g: Unauthorized Collaboration.** Unauthorized collaboration includes working with others without the expressed permission of the instructor on any submission, whether in draft or final form, to meet course requirements (including a paper, project, take-home examination, computer program, oral presentation, or other work). Collaboration between students will be considered unauthorized unless expressly permitted by the instructor.

**102.02: Other Forms of Dishonesty.** Other forms of dishonesty, including but not limited to fabricating information or knowingly furnishing false information or reporting a false emergency to the University.

**102.03: Forgery.** Forgery, alteration, or misuse of any University document, record, key, electronic device, or identification, or submission of any forged document or record to the University.

**102.04: Theft, Damage, or Destruction of Property.**

**102.04a: Theft.** Theft includes taking without expressed permission or misappropriation of any property or services of the University or property of others while on University premises or at official University functions; or possession of any property that the student had knowledge or reasonably should have had knowledge was stolen.

**102.04b: Damage or Destruction of Property.** Damage or destruction of any University property or the property of others while on University premises or at official University functions.

**102.05: Computer Misuse.**

**102.05a: Theft or Abuse of Computers.** Theft or abuse of University computers or other University electronic resources such as computer and electronic communications facilities, systems, and services. Abuses include, but are not limited to, unauthorized entry; unauthorized review of personal information of others maintained on University electronic resources; use, transfer, or tampering with the communications of others; use of either software or physical devices to enroll in classes for yourself or on behalf of others using processes other than those specifically delineated by the UCLA Registrar's Office; interference with the work of others or with the operation of computer or electronic communications facilities, systems, or services; or violation of the [University of California Electronic Communications Policy](#) (PDF) or of any other University acceptable or allowable use policies.

**102.05b: Violations of Copyright.** Violations of copyright laws, whether by theft, unauthorized sharing, or other misuse of copyrighted materials such as music, movies, software, photos, or text.

**102.06: Unauthorized Use of University Resources or Name.** Unauthorized entry to, possession of, receipt of, or



use of any University services, equipment, resources, or properties, including the University's name, insignia, or seal. See UCLA [Policy 110](#) (PDF) *Use of the University's Names, Seals, and Trademarks*.

**102.07: Violations of University Policy.** Students may be subject to discipline for violation of any University policy.

**102.07a: University Housing.** Violations of policy regarding University-owned, operated, or leased housing facilities or other housing facilities on University property.

**102.07b: University Parking.** Violations of policy regarding University parking services or University-owned or operated parking facilities.

**102.07c: University Recreation.** Violations of policy regarding University recreation services, programs, or within University-owned or operated recreation facilities.

**102.07d: University Identification Card (BruinCard).** Violation of policies, regulations, or rules governing use of official University identification cards, including manufacturing or possession of false identification cards, using another person's BruinCard to obtain services or establish identity, facilitating the misuse of one's BruinCard by another person to obtain services or establish identity, or other misuse of the BruinCard.

**102.07e: Unmanned Aircraft Systems.** Operation of a drone or other unmanned aircraft system in the airspace above the campus is only permissible with the express written permission of the University of California Unmanned Aircraft Systems Safety Office.

**102.07f: Workplace Violence.** Violations of policy regarding workplace violence, including violating the terms of a restraining order or court order. See [UCLA Policy 132](#) (PDF) *Workplace Violence Prevention*.

**102.08: Conduct that Threatens Health or Safety.** Conduct that threatens the health or safety of any person, including but not limited to, physical assault, threats that cause a person reasonably to be in sustained fear for one's own safety or the safety of one's immediate family, incidents involving the use or display of a weapon likely to cause great bodily harm, and intoxication or impairment through the use of alcohol or controlled substances to the point one is unable to exercise care for one's own safety; or other conduct that threatens the health or safety of any person.

As described in [section IV](#) of the *Code*, before a final determination of alleged misconduct is made, an interim suspension or interim exclusion may be imposed by the dean when there is reasonable cause to believe that the student's participation in University activities or presence at specified areas of campus will lead to physical abuse, threats of violence, or conduct that threatens the health or safety of any person on University property or at official University func-

tions; or other disruptive activity incompatible with the orderly operation of the campus.

Incidents involving allegations of sexual violence and sexual harassment (including domestic violence, dating violence, and sexual assault), are reviewed initially by the Title IX Office pursuant to the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF) and any local procedures currently in effect. Where the Title IX Office determines that it does not have jurisdiction over an allegation, the Office of Student Conduct may review the matter to determine if the *Code* applies.

**102.09: Sexual Harassment.** Sexual Harassment is defined in the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF). Incidents involving allegations of sexual violence and sexual harassment (including domestic violence, dating violence, and sexual assault), are reviewed initially by the Title IX Office pursuant to this policy and any local procedures currently in effect. Where the Title IX Office determines that it does not have jurisdiction over an allegation, the Office of Student Conduct may review the matter to determine if the *Code* applies.

**102.10: Stalking.** Stalking is behavior in which a student repeatedly engages in a course of conduct directed at another person and makes a credible threat with the intent to place that person in reasonable fear for their safety, or the safety of their family, where the threat is reasonably determined by the University to seriously alarm, torment, or terrorize the person, and where the threat is additionally determined by the University to serve no legitimate purpose.

The *Code* prohibits retaliation against a person who reports stalking, assists someone with a report of stalking, or participates in any manner in a review or resolution of a stalking report. Retaliation includes threats, intimidation, reprisals, and/or adverse actions related to employment or education.

For stalking violations of a sexual nature, see also the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF). Incidents involving allegations of sexual violence and sexual harassment (including domestic violence, dating violence, and sexual assault), are reviewed initially by the Title IX Office pursuant to this policy and any local procedures currently in effect. Where the Title IX Office determines that it does not have jurisdiction over an allegation, the Office of Student Conduct may review the matter to determine if the *Code* applies.

**102.11: Discrimination and Harassment.**

**102.11a: Discrimination.** Discrimination means the exclusion of an individual on the basis of race, color, national origin, religion, sex, gender, gender expression, gender identity, gender transition status, pregnancy, physical or mental disability, medical condition (cancer-related or

genetic characteristics), genetic information (including family medical history), ancestry, marital status, age, sexual orientation, citizenship, or service in the uniformed services (including protected veterans) from participation in any academic, research, or other University service, program, or activity.

**102.11b: Harassment.** Harassment means conduct that is sufficiently severe, pervasive, or persistent so as to interfere with or limit an individual's ability to participate in or benefit from the services, activities, or opportunities offered by the University; or that creates a work environment that is intimidating, hostile, or abusive.

Sanctions may be enhanced where an individual was selected for harassment because of the individual's race, color, national or ethnic origin, citizenship, sex, gender, gender expression, religion, age, sexual orientation, gender identity, pregnancy, marital status, ancestry, service in the uniformed services, physical or mental disability, medical condition, or perceived membership in any of these classifications.

For violations involving sexual harassment and sexual violence (including domestic violence, dating violence, and sexual assault), see instead the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF) and any local procedures currently in effect.

**102.12: Hazing.** Participating in, engaging in, or supporting hazing or any method of initiation or preinitiation into a campus organization or team, or other activity engaged in by the organization or members of the organization at any time that causes, or is likely to cause, physical injury or personal degradation or disgrace resulting in psychological harm to any student or other person, regardless of location, intent, or consent of participants. See the UCLA [Hazing](#) web page.

**102.13: Obstruction or Disruption.** Obstruction or disruption of teaching, research, administration, disciplinary procedures, or other University activities.

**102.14: Disorderly Behavior.** Engaging in disorderly or lewd conduct.

**102.15: Disturbing the Peace.** Participation in a disturbance of the peace or unlawful assembly.

**102.16: Failure to Comply.** Failure to identify oneself to, or comply with directions of, a University official or other public official acting in the performance of their duties while on University property or at official University functions; or resisting or obstructing such University or other public officials in the performance of or the attempt to perform their duties.

**102.17: Controlled Substances.** Manufacture, distribution, dispensing, possession, use, or sale of, or the attempted

manufacture, distribution, dispensing, or sale of controlled substances (including medicinal marijuana), identified in federal or state law or regulation, which is unlawful or otherwise prohibited by, or not in compliance with, any University policy or campus regulations or being unable to exercise care for one's own safety because one is under the influence of controlled substances. NOTE: This provision shall not apply to circumstances wherein the person under the influence was given a controlled substance without their knowledge and permission.

**102.18: Alcohol.** Manufacture, distribution, dispensing, possession, use, or sale of, or the attempted manufacture, distribution, dispensing, or sale of alcohol which is unlawful or otherwise prohibited by, or not in compliance with, University policy or campus regulations; or being unable to exercise care for one's own safety because one is under the influence of alcohol. NOTE: This provision shall not apply to circumstances wherein the person under the influence was given alcohol without their knowledge and permission.

**102.19: Destructive Devices.** Possession, use, storage, or manufacture of explosives, firebombs, or other destructive devices.

**102.20: Weapons and Replica Weapons.**

**102.20a: Weapons.** Except as expressly permitted by law, possession, use, storage, or manufacture of a firearm or other weapon capable of causing bodily injury is prohibited.

**102.20b: Replica Weapons.** Except as expressly permitted by UCPD policy, possession, use, storage, or manufacture of replicas of firearms or other weapons is prohibited. See UCLA [Policy 131](#) (PDF) *Weapons on Campus*.

**102.21: Violation of Disciplinary Conditions.** Violation of the conditions contained in the terms of a disciplinary action imposed under the *UCLA Student Conduct Code*.

**102.22: Violation of Interim or Emergency Suspension Conditions.** Violation of the conditions contained in a notice of Interim Suspension, Interim Exclusion, or Emergency Suspension issued pursuant to [section IV](#) of the *UCLA Student Conduct Code*.

**102.23: Unauthorized Use or Sale of University Materials.** Except as provided herein, no student will give, sell, or otherwise distribute to others or publish any recording made during any course presentation without the written consent of the University and the instructor/presenter. This policy is applicable to any recording in any medium, including handwritten or typed notes.

Any distribution of a recording of a course presentation at UCLA that captures the actual sounds and/or images of that course presentation, in any medium, must consider not only the rights of the instructor and the University, but also those of other parties. Examples include the privacy rights

of students enrolled in the course, the rights of guest lecturers, and the copyright interests in materials authored by others that are displayed or presented during the course presentation. In addition to the consent of the University and the instructor/presenter, it may be necessary to secure permission from these other parties before any recording, distribution, publication, or communication is legally permitted.

**102.23a: Selling Academic Materials.** Selling, preparing, or distributing for any commercial purpose academic materials, including but not limited to written, video, or audio recordings of any course, or course materials, unless authorized by the University in advance and explicitly permitted by the course instructor in writing. The unauthorized sale or commercial distribution of academic materials, including but not limited to recordings, by a student is a violation of the *UCLA Student Conduct Code* whether or not it was the student or someone else who prepared the materials. This policy is applicable to any recording in any medium, including handwritten or typed notes.

**102.23b: Copying Course Notes.** Copying for any commercial purpose handouts, readers, or other course materials provided by an instructor as part of a University of California course unless authorized by the University in advance and explicitly permitted by the course instructor or the copyright holder in writing (if the instructor is not the copyright holder). Students currently enrolled in a course may provide a copy of their own notes or recordings to other currently enrolled students for noncommercial purposes reasonably arising from participation in the course, including individual or group study.

**102.23c: Commencement Tickets.** Selling commencement tickets.

**102.24: Misuse of University Property.** Organizing or carrying out unlawful activity on University property.

**102.25: Violations of Law.** Students may be subject to discipline on the basis of a conviction under any federal, California state, or local criminal law, when the conviction constitutes reasonable cause to believe that the student poses a threat to the health or safety of any person, or to the security of any property, on University premises or at official University functions, or to the orderly operation of the campus. When the conviction also represents a violation of section(s) 102.08, 102.09, and/or 102.10 involving sexual harassment and sexual violence (including domestic violence, dating violence, sexual assault and stalking), the Title IX Office will review the matter pursuant to the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF), any related appendices, and any local procedures currently in effect. Where the Title IX Office determines that it does not have jurisdic-

tion over an allegation, the Office of Student Conduct may review the incident(s) to determine if the Code applies.

**102.26: Terrorizing Conduct.** Conduct where the actor means to communicate a serious expression of intent to terrorize, or acts in reckless disregard of the risk of terrorizing, one or more University students, faculty, or staff. *Terrorize* means to cause a reasonable person to fear bodily harm or death, perpetrated by the actor or those acting under their control. *Reckless disregard* means consciously disregarding a substantial risk. This section applies without regard to whether the conduct is motivated by race, ethnicity, personal animosity, or other reasons. This section does not apply to conduct that constitutes the lawful defense of oneself, of another, or of property.

**102.27: Unwanted Personal Contact.** Contact (whether physical, verbal, written, face-to-face, telephonic, electronic, or by other means) that (1) a student knows or should know is unwanted; (2) is communicated directly to one or more specific students, student group, faculty, or staff; (3) constitutes severe and/or pervasive, and objectively offensive, conduct; and (4) does not constitute speech protected by the First Amendment to the U.S. Constitution (e.g., speech in a public forum on a matter of public concern).

**102.28: Expectation of Privacy.** The following is prohibited:

Making a video recording, audio recording, taking one or more photographs, or streaming audio/video of any person in a location where the person has a reasonable expectation of privacy, without that person's knowledge and express consent; or posting online any audio/video/photograph made by another individual of any person in a location where the person had a reasonable expectation of privacy, without that person's knowledge and express consent.

Making a video recording, audio recording, or streaming audio/video of private nonpublic conversations and/or meetings, without the knowledge and express consent of all recorded parties; or posting online any audio/video/photographs made by another individual of any private, nonpublic conversations and/or meetings, without the knowledge and express consent of all recorded parties.

Looking through a hole or opening, into, or otherwise viewing, by means of any instrumentality, the interior of a private location without the subject's knowledge and express consent.

*Express consent* is clear, unmistakable, and voluntary consent that may be in written, oral, or nonverbal form.

*Private locations* are settings where the person reasonably expected privacy. For example, in most cases the following are considered private locations: residential living quarters, bathrooms, locker rooms, and personal offices.

*Private nonpublic conversations and/or meetings* include any communication carried on in circumstances that reasonably indicate that any party wants the communication to be confined to the parties, but excludes a communication made in a public gathering, or in any other circumstance in which the parties to the communication may reasonably expect that the communication may be overheard or recorded.

These provisions do not extend to public events or discussions, nor to lawful official law or policy enforcement activities. These provisions may not be utilized to impinge on the lawful exercise of constitutionally protected rights of freedom of speech or assembly.

For incidents involving allegations of conduct prohibited by the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF) (including invasions of sexual privacy), the Title IX Office will review the matter pursuant to this policy, any related appendixes, and any local procedures currently in effect. Where the Title IX Office determines that it does not have jurisdiction over an allegation, the Office of Student Conduct may review the incident(s) to determine if the Code applies.

## Sexual Assault and Other Sexual Violence

UCLA does not tolerate sexual violence and responds to all reports of sexual violence in accordance with UCLA procedures and the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF). Sanctions for a student found responsible for committing sexual assault or other sexual violence may include dismissal from the University. See the Title IX [policies and rights](#) web page.

### If a Person Has Been Sexually Assaulted

Those who believe that they are the victims of sexual assault can

1. **immediately call the police department.** If possible, call the UCLA Police Department at 310-825-1491 or 911
2. **get medical attention.** Campus police will provide transportation to the Rape Treatment Center at Santa Monica-UCLA Medical Center for medical treatment and evidence collection. A confidential counselor from the Rape Treatment Center will be available at that time, free of charge
3. **report to Title IX.** Students have the right to report to the University, and can do that by contacting the Title IX Office by [e-mail](#) or by calling 310-206-3417. If the other person is a student or employee, the office can

take administrative action, and explain those options. The Title IX Office also offers interim measures to prevent individuals from experiencing additional harm. Those measures can include, but are not limited to, academic accommodations, no-contact directives prohibiting contact, and housing transfers

Utilize confidential campus and community support services

1. **contact a Campus Assault Resources and Education (CARE) advocate.** CARE Advocates are available to support and advocate for UCLA victims or survivors. They can discuss options and alternatives, help identify the most appropriate support services, and provide information about medical care, psychological counseling, academic assistance, legal options, how to file a police report, and how to file a complaint with the Title IX Office. CARE advocates are available to assist any member of the UCLA community regardless of where or when the assault occurred. For assistance, contact CARE at 310-206-2465 or go to 205 Covel Commons and ask to speak to a CARE advocate
2. **contact the Rape Treatment Center** at Santa Monica-UCLA Medical Center (424-259-7208) for free emergency medical treatment and counseling services

Assistance is available for persons who have been subjected to sexual violence. They are encouraged in the strongest terms to make a report to the Title IX Office.

## Harassment

### Sexual Harassment

The University of California is committed to creating and maintaining a community where all persons who participate in University programs and activities can work and learn together in an atmosphere free from all forms of harassment, exploitation, or intimidation. Every member of the University community should be aware that the University is strongly opposed to sexual harassment and that such behavior is prohibited both by law and by the [UC Policy on Sexual Violence and Sexual Harassment](#) (PDF) (hereafter referred to as the *SVSH Policy*). The University will respond promptly and effectively to reports of sexual harassment and will take appropriate action to prevent, correct and, if necessary, discipline behavior that violates the *SVSH Policy*. See the Title IX [sexual harassment prevention](#) website.

### Definitions

For detailed definitions of sexual harassment, refer to the *SVSH Policy*.



## Complaint Resolution

An individual who believes that they have been sexually harassed may contact Title IX Director **Mohammed Cato**, 2255 Murphy Hall, 310-206-3417. If a student reports sexual harassment or sexual violence to a responsible employee, as defined under the *SVSH Policy*, the responsible employee must report it to the **Title IX Office**. Responsible employees include academic personnel, faculty members, and most other employees who are not defined as a confidential resource under the *SVSH Policy*.

Title IX prohibits sex discrimination, including sexual harassment and sexual violence, in any education program or activity receiving federal financial assistance. Inquiries regarding Title IX may be directed to the **Title IX Office** by e-mail, or at 2255 Murphy Hall, 310-206-3417; or the U.S. Department of Education **Office for Civil Rights**.

## Other Forms of Harassment

The University strives to create an environment that fosters the values of mutual respect and tolerance and is free from discrimination based on race, ethnicity, sex, religion, sexual orientation, disability, age, and other personal characteristics. Certainly harassment, in its many forms, works against those values and often corrodes a person's sense of worth and interferes with one's ability to participate in University programs or activities. While the University is committed to the free exchange of ideas and the full protection of free expression, the University also recognizes that words can be used in such a way that they no longer express an idea, but rather injure and intimidate, thus undermining the ability of individuals to participate in the University community. The ***University of California Policies Applying to Campus Activities, Organizations, and Students*** (PDF) (hereafter referred to as *Policies*) presently prohibit a variety of conduct by students which, in certain contexts, may be regarded as harassment or intimidation.

For example, harassing expression which is accompanied by physical abuse, threats of violence, or conduct that threatens the health or safety of any person on University property or in connection with official University functions may subject an offending student to University discipline under the provisions of the *Policies*.

Similarly, harassing conduct, including symbolic expression, which also involves conduct resulting in damage to or destruction of any property of the University or property of others while on University premises may subject a student to University discipline under the provisions of Section 102.04 of the *Policies*.

Further, under specific circumstances described in Section 102.11 of the *Policies*, students may be subject to University discipline for misconduct which may consist solely of

expression. Copies of these *Policies* are available in the Office of Student Conduct, 1104 Murphy Hall.

## Complaint Resolution

One of the necessary measures in our efforts to assure an atmosphere of civility and mutual respect is the establishment of procedures which provide effective informal and formal mechanisms for those who believe that they have been victims of any of the above misconduct.

Many incidents of harassment and intimidation can be effectively resolved through informal means. For example, an individual may wish to confront the alleged offender immediately and firmly. An individual who chooses not to confront the alleged offender and who wishes help, advice, or information is urged to contact the Office of Student Conduct.

In addition to providing support for those who believe they have been victims of harassment, the Office of Student Conduct can help students to consider which of the available options is the most useful for the particular circumstances.

With regard to the Universitywide Student Conduct Harassment Policy, complainants should be aware that not all conduct which is offensive may be regarded as a violation of this policy and may, in fact, be protected expression. Thus, the application of formal institutional discipline to such protected expression may not be legally permissible. Nevertheless, the University is committed to reviewing any complaint of harassing or intimidating conduct by a student and intervening on behalf of the complainant to the extent possible.

## Faculty Conduct Policies

The complete *Faculty Code of Conduct (Code)*, part of the *University of California Academic Personnel Manual*, is available in **APM 015** (PDF). A portion of the *Code* outlines faculty obligations to students.

## Faculty Code of Conduct

### Ethical Principles

*As teachers, the professors encourage the free pursuit of learning of their students. They hold before them the best scholarly standards of their discipline. Professors demonstrate respect for students as individuals and adhere to their proper roles as intellectual guides and counselors. Professors make every reasonable effort to foster honest academic conduct and to assure that their evaluations of students reflect each student's true merit. They respect the confidential nature of the relationship between professor and student. They avoid any exploitation, harassment, or discriminatory*



*treatment of students. They acknowledge significant academic and scholarly assistance from them. They protect their academic freedom.*

—1966 AAUP statement, revised 1987

The integrity of the faculty-student relationship is the foundation of the University's educational mission. This relationship vests considerable trust in the faculty member, who, in turn, bears authority and accountability as mentor, educator, and evaluator. The unequal institutional power inherent in this relationship heightens the vulnerability of the student and the potential for coercion. The pedagogical relationship between faculty member and student must be protected from influences or activities that can interfere with learning consistent with the goals and ideals of the University. Whenever a faculty member is responsible for academic supervision of a student, a personal relationship between them of a romantic or sexual nature, even if consensual, is inappropriate. Any such relationship jeopardizes the integrity of the educational process.

In this section, the term *student* refers to all individuals under the academic supervision of faculty.

## Types of Unacceptable Conduct

Failure to meet the responsibilities of instruction, including

1. arbitrary denial of access to instruction
2. significant intrusion of material unrelated to the course
3. significant failure to adhere, without legitimate reason, to the rules of the faculty in the conduct of courses, to meet class, to keep office hours, or to hold examinations as scheduled
4. evaluation of student work by criteria not directly reflective of course performance
5. undue and unexcused delay in evaluating student work

Discrimination, including harassment, against a student on political grounds or for reasons of race, color, religion, sex, sexual orientation, gender, gender expression, gender identity, ethnic origin, national origin, ancestry, marital status, pregnancy, physical or mental disability, medical condition (cancer-related or genetic characteristics), genetic information (including family medical history), or service in the uniformed services as defined by the Uniformed Services Employment and Reemployment Rights Act of 1994 (USERRA), as well as state military and naval service, or within the limits imposed by law or University regulations, because of age or citizenship or for other arbitrary or personal reasons.

Sexual violence and sexual harassment, as defined by University policy, of a student.

Violation of University policy, including the pertinent guidelines, applying to nondiscrimination against students on the basis of disability.

Use of the position or powers of a faculty member to coerce the judgment or conscience of a student or to cause harm to a student for arbitrary or personal reasons.

Participating in or deliberately abetting disruption, interference, or intimidation in the classroom.

Entering into a romantic or sexual relationship with any student for whom a faculty member has, or should reasonably expect to have in the future, academic responsibility (instructional, evaluative, or supervisory). A faculty member should reasonably expect to have in the future academic responsibility (instructional, evaluative, or supervisory) for (1) students whose academic program will require them to enroll in a course taught by the faculty member; (2) students known to the faculty member to have an interest in an academic area within the faculty member's academic expertise; or (3) any student for whom a faculty member must have academic responsibility (instructional, evaluative, or supervisory) in the pursuit of a degree.

Exercising academic responsibility (instructional, evaluative, or supervisory) for any student with whom a faculty member has a romantic or sexual relationship.

## Charges of Violation

If a student has reason to believe that a faculty member has violated the *Faculty Code of Conduct*, the student has several options. The student may report the alleged violator to the chair of the department or to the dean of the division or school, seek mediation with the Office of Ombuds Services, or seek advice from the Senate's Grievance Advisory Committee. If the alleged violation involves grading or other student evaluation, the student may file a grading grievance. If the violation involves sexual harassment, sexual violence, or discrimination, the violation should be reported to the Civil Rights Office. If the student feels that formal discipline may be warranted, the student may so inform the chair of the department, or the dean of the division or school, or may file a charge themselves with the Academic Senate Charges Committee. If the student seeks remedies based on the alleged violations, the student should work with the Office of the Dean of Students.

## Disclosure of Student Records

Pursuant to the Federal Family Educational Rights and Privacy Act (FERPA), the California Information Practices Act, and the University of California Policies Applying to the Disclosure of Information from Student Records, students at UCLA have the right to

1. inspect and review records pertaining to themselves in their capacity as students, except as the right may be waived or qualified under federal and state laws and University policies
2. have withheld from disclosure, absent their prior written consent for release, personally identifiable information from their student records, except as provided by federal and state laws and University policies
3. inspect records maintained by UCLA of disclosures of personally identifiable information from their student records
4. seek correction of their student records through a request to amend the records or, if such request is denied, through a hearing
5. file complaints with the U.S. Department of Education regarding alleged violations of the rights accorded them by FERPA

UCLA, in accordance with federal and state laws and University policies, has designated the following categories of personally identifiable information as public information that UCLA may release and publish without the student's prior consent: name, e-mail address, telephone numbers, major field of study, dates of attendance, number of enrolled course units, degrees and honors received, the most recent previous educational institution attended, participation in officially recognized activities (including intercollegiate athletics), and the name, weight, and height of participants on intercollegiate athletic teams.

As a matter of practice, UCLA does not publish student telephone numbers in the campus online directory unless released by the student. The term *public information* in this policy is synonymous with the term *directory information* in FERPA.

Students who do not wish certain items (i.e., name, e-mail address, telephone numbers, major field of study, dates of attendance, number of course units in which enrolled, and degrees and honors received) of this public information released and published may so indicate through [MyUCLA](#). To restrict the release and publication of additional items in the category of public information, complete the UCLA FERPA Restriction Request form available from the Registrar's Office, 1113 Murphy Hall.

Student records that are the subject of federal and state laws and University policies may be maintained in a variety of offices, including the Registrar's Office, Office of Student Conduct, Career Center, Division of Graduate Education, External Affairs Department, and offices of a student's College or school and major department. Students are referred to the online UCLA [Campus Directory](#), which lists all the offices that may maintain student records, together with each office campus address and telephone number. Students have the right to inspect their student records in any such office, subject to the terms of federal and state laws and University policies. Inspection of student records maintained by the Registrar's Office is by appointment only and must be arranged three working days in advance. Call 310-825-1091, option 6; or inquire at the Registrar's Office, 1113 Murphy Hall.

A copy of applicable federal and state laws and University policies may be requested from the [Information Practices](#) office by e-mail, or by calling 310-794-8741. Information concerning student hearing rights may be obtained from that office, and from the Office of Student Conduct, 1206 Murphy Hall.

# College and Schools

The UCLA campus is home to one College and 12 professional schools. Each has its own degree requirements, and each division and school is headed by a dean who has final academic authority. Students enroll in UCLA and in the College or one of the schools described in this chapter.

## College of Letters and Science

Adriana Galván, PhD, *Dean of Undergraduate Education*

Miguel A. García-Garibay, PhD, *Senior Dean and Dean of Physical Sciences*

Tracy L. Johnson, PhD, *Dean of Life Sciences*

Alexandra Minna Stern, PhD, *Dean of Humanities*

Abel Valenzuela, Jr., PhD, *Dean of Social Sciences (Interim)*

### College of Letters and Science

2300 Murphy Hall  
310-825-9009

UCLA is one of the world's premier universities. At the core of UCLA research programs, graduate training, and undergraduate instruction is the College of Letters and Science. With over 28,600 students and more than 900 faculty members, the College is the largest academic unit in the UC system and the academic heart of UCLA.

The undergraduate programs in the College stress a liberal arts education that brings together perspectives from many fields in a unified approach to learning. Students learn ways that issues are analyzed, questions are posed, and knowledge is organized. After sampling many general subjects, they concentrate on one field or subject and are required to pursue it rigorously and in depth, according to the standards of scholars in the field. When they reach the graduate level, they pose their own questions, analyze academic issues of their own making and, through their research, participate in the creation of knowledge.

## Organization of the College

The College of Letters and Science is organized in five divisions, each led by a dean.

### Humanities Division

The **Humanities Division** promotes—through scholarly inquiry and the transmission of ideas—sensitive, imaginative, and rigorous reflection on the human condition. Courses in literature help students understand the enduring power of texts both great and small—from cuneiform to manuscript to hypertext. Studies of nearly 100 foreign lan-

guages create a gateway to civilizations that span the globe and five millennia of human history. Philosophers offer training in the fundamental principles of logic and moral reasoning, and linguists—both theoretical and applied—illuminate the physiological, cognitive, and social aspects of human language. Art historians explore with students the forms and media through which humans have sought to express themselves and to challenge and make sense of their worlds. Programs in the humanities teach students to interpret texts with an informed sensitivity, to evaluate ideas critically, to write clearly and effectively about them, and to be able to question and discuss them with their peers.

### Life Sciences Division

Faculty members and students in the **Life Sciences Division** play an essential role in unlocking the basic mechanisms of life at the most fundamental level. The geography of Southern California is conducive to life sciences research, since the diverse region is a natural laboratory for environmental biologists, plant and animal ecologists, and evolutionary biologists. Scientists in microbiology and molecular, cell, and developmental biology study embryo formation, cell signaling, and genetics. Neurochemists, neurophysiologists, psychobiologists, and behavior biologists study the underlying mechanisms of the neural basis of behavior. Physiological scientists examine the structure of muscle, hormonal control of behavior, and environmental conditions, such as weightlessness, that affect bone and muscle structure and function. Cognitive psychologists are concerned with the nature of knowledge—how people learn, remember, associate, and think; and how computers relate to human thought processes.

### Physical Sciences Division

Departments in the **Physical Sciences Division** present the results of human efforts to understand the natural sciences and their physical aspects, including the properties and characteristics of matter and energy; the science of numbers and order; the origin and structure of the universe, solar system, and Earth; and climatic change and its environmental impact. The bases for the physical sciences are the fundamental laws and proof of mathematics, chemistry, and physics. Studies in the physical sciences are experimental, theoretical, observational, and computational. Faculty members and students are interested in such topics as the nature and evolution of the galaxies; ozone depletion; nuclear winter; greenhouse effect; molecular recognition, interactions, design, synthesis, and structure; evolution of

life and the continents; computational mathematics and symbolic logic; superconducting materials; plasma fusion, space plasmas; and high-energy accelerator physics.

## Social Sciences Division

Majors in the **Social Sciences Division** help students make sense of the rapidly changing world around them by giving them the tools and sensibilities to appreciate the complex interplay of individuals, environment, culture, and economy that makes up their social world. They study human and animal evolution, as well as the transformation of human societies from small groups to states. They explore and debate the meaning of cultural, ethnic, and racial identities in historical and contemporary settings. Some majors challenge students to analyze the role of labor, markets, and exchange, as well as the dynamics of political choices, participation, and institutions. Communication, from interpersonal conversation to mass media, and its impact on personal and political behavior are studied in different fields, while the impact of place and the natural environment are examined through geography. Underlying all of these topics is a drive to capture the elusive nature of human behaviors and relationships through direct observation and the questioning of prevailing theories. In addition, students learn exciting and diverse methods of social and environmental analysis, such as archaeology, linguistics, statistics, game theory, remote sensing and imagery, textual analysis, ethnography, geographic information systems, fieldwork, and ecology.

## Undergraduate Education Division

The **Undergraduate Education Division** is a campuswide advocate for undergraduate education, promoting academic success for the diverse undergraduate population at UCLA and ensuring options for all students to engage in a challenging array of educational opportunities, from foundational general education courses to advanced research and capstone projects.

## Academic Advancement Program

The **Academic Advancement Program** (AAP) is a multiracial, multiethnic, and multicultural program that promotes academic excellence through academic counseling, learning sessions, and mentoring. Students are eligible for AAP if their academic profiles and personal backgrounds may impact their experience and their retention and graduation from UCLA.

## Center for Academic Advising in the College

The **Center for Academic Advising in the College** (CAAC) encompasses programs and initiatives that foster student and staff development. CAAC partners with students to

engage them in their undergraduate careers and to support their personal, professional, and academic growth; while also advising them on academic regulations and procedures, course selection, preparation for graduate and professional programs, selection of appropriate majors, and the options and alternatives available to enhance a UCLA education.

## Center for Community Engagement

The **Center for Community Engagement** serves faculty members, undergraduate students, and community partners through academic courses and programs, including credit-bearing internships, community-engaged learning courses, community-based research, AmeriCorps programs, and the Astin Community Scholars Program. It is home to the undergraduate minor in Community Engagement and Social Change.

## Center for Educational Assessment

The **Center for Educational Assessment** (CEA) supplies information and analysis to support planning, program and policy development, and other decision making about undergraduate education at UCLA.

## Center for Scholarships and Scholar Enrichment

The **Center for Scholarships and Scholar Enrichment** (CSSE) is designed to help students in the search for private scholarships, regardless of financial aid eligibility. The center also houses the Phi Beta Kappa office.

## Center for the Advancement of Teaching

The **Center for the Advancement of Teaching** (CAT) supports undergraduate education by enhancing teaching and learning opportunities. Through grants, programs, and services, CAT promotes the effective use of current and emerging instructional methodologies and technologies.

## Honors Programs

**Honors Programs** offers academic programs and services designed to promote an outstanding honors education, including College Honors, Honors Collegium, Departmental Scholar Program, Individual Majors Program, Honors Scholarships, Honors Research Stipends, and specialized counseling and support services for College honors students.

## New Student Academic Programs

**New Student Sessions** are the first introduction to UCLA for new students. During the three-day, first-year student sessions—and the one-day transfer student sessions—a unique set of comprehensive and engaging programs is offered to make student transitions to UCLA great ones.

## Transfer Alliance Program

The **Transfer Alliance Program** (TAP) seeks to strengthen academic ties between UCLA and honors programs in over 45 California community colleges, offering specialized transfer programs for participating students.

## Undergraduate Education Initiatives

**Undergraduate Education Initiatives** are innovative programs designed for undergraduate students that feature best practices in undergraduate education and attract the most distinguished faculty members from all UCLA areas. Programs include UCLA General Education, *Fiat Lux* Freshman Seminar Program, Cluster Program, Undergraduate Student Initiated Education Program, and Writing II Program.

## Undergraduate Research Centers

**Undergraduate Research Centers** (URC)—one for students in the arts, humanities, social sciences, and behavioral sciences; and one for students in science, engineering, and mathematics—exist as part of a continuing effort by the College to engage undergraduate students in research and creative activities at all levels.

## Degrees

The College offers 139 majors leading to bachelor's, master's, and doctorate degrees. In addition, the College offers 86 undergraduate minors.

For a complete list of College of Letters and Science degrees, see [Majors and Degrees](#).

## Undergraduate Degree Requirements

Degree programs in the College offer students a variety of intellectual challenges by combining a wide distribution of courses and the opportunity to specialize in one particular field. To this end, students are required to select lower-division courses that furnish general foundations of human knowledge. In upper-division courses, they concentrate on one major field of interest.

As described below, College students must satisfy UC requirements, College requirements, and department requirements for the Bachelor of Arts or Bachelor of Science degree.

### University Requirements

The University of California has two requirements that undergraduate students must satisfy to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. Students who do not satisfy

### Degree Requirements

#### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

#### College Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Quantitative Reasoning
6. Foreign Language
7. Diversity
8. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

#### Department Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, College, or department requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

the Entry-Level Writing requirement prior to enrollment must pass an approved course or other program prescribed by their UC campus of residence. Only after satisfying the Entry-Level Writing requirement can they take an English composition course for transfer credit after enrolling at UCLA. See [Degree Requirements](#) in Undergraduate Study for details.

## College Requirements

There are eight requirements that must be satisfied for award of a degree.

### Unit Requirement

Students must satisfactorily complete for credit a minimum of 180 units for the bachelor's degree. At least 60 of the 180 units must be upper-division courses numbered 100 through 199. A maximum of 216 units may be permitted. Advanced Placement Examination and International Baccalaureate Examination (transfer) credits are not counted toward the unit maximum.

### Scholarship Requirement

Students must earn at least a 2.0 (C) grade-point average (GPA) in all courses undertaken at UCLA to receive a bachelor's degree. Students must also earn a 2.0 GPA in a major



and satisfy both the course and scholarship requirements for that major, including preparation for the major. Some majors have additional requirements.

## Academic Residence Requirement

Thirty-five of the final 45 units completed for the bachelor's degree must be earned while in residence at the College. A minimum of 24 upper-division units must be completed in the major while in residence at the College. The academic residence requirements apply to both continuing and transfer students.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the College writing requirement.

Students admitted to the College are required to complete a two-term writing requirement—Writing I and Writing II. Two courses in English composition are required for graduation. Both courses must be taken for letter grades, and students must receive a C or better grade in each (a C– grade is not acceptable).

### Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

Qualifying examination scores and courses are determined by the College Faculty Executive Committee.

### Writing II

The Writing II requirement must be satisfied within seven terms of enrollment by completing one course from a list of [Writing II courses](#) approved by the College Faculty Executive Committee; see the Registrar's [Writing II requirement](#) web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course

must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses may also fulfill preparation for the major requirements and, if approved for general education (GE) or diversity credit, may also fulfill a GE or diversity requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I, Writing II, and reciprocity requirements. No transfer student is admitted to the College without completing, with a C or better grade (a C– grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

## Quantitative Reasoning Requirement

The quantitative reasoning requirement may be satisfied by completing one approved UCLA course (see list below) or an equivalent course within the first seven terms of enrollment. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable).

The requirement may also be satisfied by achieving an SAT Reasoning Test Mathematics Section score of 600 or better for exams taken January 2016 or earlier, or achieving an SAT Mathematics section score of 620 or better for exams taken March 2016 or later, or an SAT Subject Test in Mathematics score of 550 or better, or an ACT mathematics exam score of 26 or better. Approved UCLA courses and examinations, and qualifying scores, are determined by the College Faculty Executive Committee.

Applicable courses may also fulfill preparation for the major requirements and, if approved for general education (GE) credit, may fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the quantitative reasoning and reciprocity requirements. No transfer student is admitted to the College without completing, with a C or better grade (a C– grade is not acceptable), a college-level quantitative reasoning course that Undergraduate Admission accepts as equivalent to those approved by the College Faculty Executive Committee. Approved courses include

- Biostatistics 100A, 100B
- Life Sciences 20, 30A, 30B, 40
- Mathematics 3A, 31A, 31AL
- Philosophy 3I
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C

- Public Affairs 60
- Statistics 10, 12, 13

## Foreign Language Requirement

The foreign language requirement may be satisfied by one of the following methods: completing a college-level foreign language course equivalent to level three or above at UCLA with a C or Passed or better grade; or scoring 3, 4, or 5 on the College Board Advanced Placement (AP) foreign language examination in Chinese, French, German, Italian, Japanese, or Spanish, or scoring 4 or 5 in Latin, thereby earning College credit; or presenting a UCLA foreign language departmental examination score indicating competency through level three. Consult the Schedule of Classes or the appropriate department for times and places of regularly scheduled examinations. Students who wish to demonstrate proficiency in a language taught in a UCLA department that has no scheduled examination should contact the appropriate department to arrange for one. Students who wish to take an examination in a language not taught at UCLA should contact a College counselor.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the foreign language and reciprocity requirements.

Courses that may be used to fulfill this requirement are published on the Registrar's [foreign language requirement](#) web page.

## Diversity Requirement

The [diversity requirement](#) may be satisfied by completing one course from the faculty-approved list of courses. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable). Applicable courses may also fulfill major, minor, or elective requirements; and if approved for general education (GE) credit, may fulfill a GE requirement. A list of approved courses is available in the [Schedule of Classes](#).

## General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

<b>General Education Requirements</b>	
<b>Foundations of the Arts and Humanities</b>	
Literary and Cultural Analysis . . . . .	1 course
Philosophical and Linguistic Analysis . . . . .	1 course
Visual and Performance Arts Analysis and Practice . . . . .	1 course
Total = 15 units minimum	
<b>Foundations of Society and Culture</b>	
Historical Analysis . . . . .	1 course
Social Analysis . . . . .	1 course
Third course from either subgroup . . . . .	1 course
Total = 15 units minimum	
<b>Foundations of Scientific Inquiry</b>	
Life Sciences . . . . .	2 courses
Physical Sciences . . . . .	2 courses
One of the four courses must be 5 units and carry laboratory credit. Other courses in the subgroups may be 4 units.	
Total = 17 units minimum	
<b>Total GE . . . . . 10 courses/47 units minimum</b>	

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

Applicable courses may also fulfill major, minor, or elective requirements; and if approved for diversity or writing, may fulfill the diversity requirement and/or Writing II requirement.

## Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Ten courses (47 units minimum) are required. GE-approved Writing II courses may fulfill an appropriate foundational area. See the foundational area descriptions below for a breakdown of courses required.

Students who successfully complete a year-long GE cluster series fulfill the Writing II requirement, complete 40 percent of their general education requirements, and receive laboratory/demonstration credit where appropriate.

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

### Foundations of the Arts and Humanities

Three 5-unit courses, one from each subgroup:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. Courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities, and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

### Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated.

### Foundations of Scientific Inquiry

Four courses, two from each subgroup. One 5-unit course from either subgroup must include laboratory credit. Other courses in the subgroups may be 4 units:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, contact an academic adviser or see the [master list](#).

## Advanced Placement Examination Credit

Students may not use Advanced Placement (AP) Examination credit to satisfy the College 10-course foundational area general education requirement. See the [College AP table](#). Consult with a departmental adviser for applicability of AP credit toward course equivalencies or satisfaction of preparation for the major requirements.

## Reciprocity with Other UC Campuses

Students who transfer to UCLA from other UC campuses and have met all GE requirements prior to enrolling at UCLA are not required to complete the College GE requirements. Written verification from the dean at the other UC campus is required. Consult with a College adviser regarding eligibility for this option.

## Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE or transfer core courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all GE and proficiency requirements, excluding diversity, are fulfilled when students complete the IGETC courses.

Students who are unable to complete one or two IGETC courses prior to transfer may request certification of partial completion of IGETC from their community college. On certification, each of the remaining courses must be completed with a minimum C or Passed or better grade in each. Students who fail to complete the remaining IGETC coursework or who are otherwise not eligible for IGETC or partial IGETC must complete the College GE and proficiency requirements. Consult with a college adviser regarding GE requirements prior to enrolling in any courses.

## Department Requirements

College of Letters and Science departments generally set two types of requirements that must be satisfied for award of a degree: preparation for the major (lower-division courses) and the major (upper-division courses). Departments also set requirements for minors and specializations.

## Preparation for the Major

Admission to a major may require completion of a set of courses known as preparation for the major. Some majors admit applicants to pre-major status until requisite courses are satisfactorily completed. Students in life sciences majors must complete a set of preparatory courses known as the Life Sciences core curriculum. Each department sets its own preparation for the major and eligibility requirements; see [Curricula and Courses](#).

## The Major

A major in the College consists of a group of coordinated upper-division courses and is designated as departmental, interdepartmental, or individual. Each course applied toward the major and preparation for the major must be taken for a letter grade unless otherwise stipulated by the department. Students who have been away from UCLA for several terms should consult with their major department or curriculum adviser concerning the requirements under which they are to graduate.

A departmental major consists of a minimum of 36 upper-division units and a maximum of 60 upper-division units. The majors are established and supervised by campus departments. Each department sets its own major requirements; see [Curricula and Courses](#).

## Individual Capstone Majors

If students have some unusual but definite academic interest for which no suitable major is offered at UCLA, and have completed at least three terms of work (45 units minimum) at UCLA with a grade-point average of 3.4 or better, they may petition for an individual capstone major. The consent of College Honors Programs and the assistance of a faculty adviser are required. Individual majors must be approved by the dean for undergraduate education.

The individual major must consist of at least 48 and no more than 60 upper-division units, a majority of which must be in departments offering a major in the College. A capstone senior thesis of at least 8 but no more than 12 units is required. For details about individual majors, contact [Honors Programs](#), A311 Murphy Hall.

## Double Majors

Students in good academic standing and on track to graduate on time may be permitted to have a double major, consisting of majors from two departments within the College. Both majors must be completed within the maximum limit of 216 units, and students must obtain the approval of both departments and the College.

With few exceptions, double majors in the same department are unacceptable. No more than 20 upper-division units may be shared by both majors.

## Minors and Specializations

Students may choose to pursue a minor to complement their major program of study. Minors consist of no fewer than seven courses (28 units) and no more than nine courses (36 units). Some minors also have admission requirements.

The Computing specializations are sequences of supplemental courses that enhance work in a major.

See the list of [Undergraduate Minors and Specializations](#) in Majors and Degrees; descriptions appear in [Curricula and Courses](#).

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

The study list is a record of classes that a student is taking during a particular term. The allowable study list load is up to 19 units. After the first term, students may petition to enroll in more than 19 units if they attained at least a 3.0 grade-point average the preceding term in a total program of at least 15 units and have an overall grade-point average of 3.0.

First-term transfer students from any other UC campus may carry excess units on the same basis as students who have completed one or more terms at UCLA; however, they are not encouraged to do so.

### Degree Progress

UCLA is a full-time institution, and it is expected that students complete their undergraduate degree requirements promptly. In order to encourage on-time graduation and support a quality education that is accessible, undergraduate students in the College are allowed to enroll through spring or summer of their fourth year (for students admitted as first years) or fall of their third year (for students admitted as transfers). Students may request an exception from their academic advising unit by submitting a petition

for additional time if needed based on documented extenuating circumstances.

The Degree Audit is a record of degree requirements and the courses taken to fulfill them. Students are responsible for monitoring their progress toward the degree. They must read and understand the *UCLA General Catalog*, and consult regularly with College and departmental advisers to confirm they are satisfying all program requirements. Departmental advisers advise students on progress and completion of the major requirements. Academic advisers and counselors in College Academic Counseling, Academic Advancement Program, Honors Programs, and Student Athletics Counseling assist students with College requirements, degree planning, and Degree Audits on request. Students can also view the Degree Audit through MyUCLA.

## Expected Cumulative Progress

During a regular term of enrollment, undergraduate students in the College are required to enroll in a minimum of 13 units. Students are also required to meet cumulative progress unit expectations as outlined in the [expected cumulative progress table](#).

The following courses count toward minimum progress and expected cumulative progress, as well as any other degree requirement, but are exempt from the maximum unit limit of 216:

- Any 19, 88S, 89, 89HC, M97X, 98X, 98XA, 98XB, 99, 189, 189HC, 190, 193, and 194
- Honors Collegium 101D, 101E, and 101G
- Research Practice 192B and 194A
- Science Education 1XP and 10XP
- University Studies 10A, 10B, 10C, 10D, 10E, 10F, and 30

## Reduced Fee Programs

While full-time study is expected and required of students, some students may qualify for part-time study due to compelling reasons of occupation, home and family responsibilities, or health. Under this policy, part-time status is defined as 10 or fewer units per term based on enrolled units at the end of the third week, and is presumed to be of a permanent nature. On approval of part-time status, a reduction of tuition by one half and a reduction of nonresident supplemental tuition by one half are approved.

To be eligible for part-time study, students must provide documentation of occupation, home and family responsibility, or health that prevents them from carrying a full-time study load; as well as documentation of a need for part-time study for a minimum of three consecutive terms. Once approved for part-time study, students must complete two courses totaling 10 units or fewer in each of the three con-

secutive terms. Only under documented extraordinary circumstances is a one-course study list approved. Documentation must specify that a one-course study list is warranted.

Students should submit a [request for reduced fees](#) with the Registrar's Office. The application for part-time study must be submitted with accompanying documentation by Friday of the second week of the term. Students approved for part-time study who become enrolled in or receive credit for more than 10 units during a term must pay full fees for that term.

## Declaring a Major

Students are expected to select a major by the beginning of their junior year. This may be a program of related upper-division courses within a single department (departmental major) or a group of related courses involving a number of departments (interdepartmental major) or, under certain circumstances, a group of courses selected to meet a special need (individual capstone major).

Some entering freshmen are unsure about specific academic goals and request to be admitted to the College as "undeclared." These students then explore fields of study by taking introductory courses in the physical and life sciences, social sciences, and humanities in search of an area that most excites their interest. UCLA encourages all students, even those who may have a specific major in mind, to explore the vast array of disciplines and fields that are available.

All students with 90 or more units toward a degree are expected to declare a pre-major or a major. When they are ready to do so, students obtain approval from the department or interdepartmental degree committee that governs their intended major.

## Changing a Major

Students in good academic standing who wish to change their major may petition to do so, provided they can complete the new major and are on track to graduate on time. Admission to certain majors may be closed or restricted. Changes are normally not permitted if students are not in good academic standing or have begun their last term. Students should consult the department regarding eligibility and admission procedures.

Students who fail to meet eligibility or major requirements may be denied the privilege of entering or continuing in that major. Some departments may have higher grade-point requirements for their preparation and major courses or other restrictions; consult with the appropriate department regarding minimum standards and eligibility requirements.



## Re-entering Students and Their Majors

Students returning to UCLA to resume their studies after an absence of several years may find their previous major area of study is no longer available. They must select a current major in which to complete their studies. Consult with an academic adviser for assistance.

## Credit Limitations

The following credit limitations apply to all undergraduate students enrolled in the College. In many cases, units are not deducted until the final term before graduation. Students with questions should consult with an academic adviser.

Transfer students with credit from other institutions (advanced standing credit) receive a Degree Audit from Undergraduate Admission indicating the transferable units from former institutions. However, the following credit limitations may reduce the total number of transferred units that apply toward the degree in the College. Consult with an adviser in the [College](#) about these limitations.

### Advanced Placement Examinations

Advanced Placement (AP) Examination credit may not be applied toward a degree unless students had less than 36 units of credit at the time of the examination(s). See the [College AP table](#) for UCLA course equivalents and credit allowed for GE requirements.

### College Level Examination Program

Credit earned through the College Level Examination Program (CLEP) and through the California State University English Equivalency Examination may not be applied toward the bachelor's degree.

### Community College/Lower Division Transfer Limitation

After completing 105 lower-division quarter units toward the degree in all institutions attended, students are allowed no further unit credit for courses completed at a community college or for lower-division courses completed at any institution outside of the University of California.

### Credit by Examination

Within the College, eligibility for credit by examination is usually limited to students who have been approved as Departmental Scholars or who are admitted to a departmental honors program or Honors Programs. Students who have completed a minimum of 12 units at UCLA with a minimum 3.5 overall grade-point average may petition for credit by examination. The examination for that course must be

taken successfully before students may petition for credit by examination in another course.

Students may receive credit by examination for only one course out of 10 courses completed. Credit by examination may not be used to gain credit for prior knowledge, audited courses, or courses taken elsewhere. Units for a course taken by examination are applied toward the 216-unit maximum allowable units for graduation. Petitions for credit by examination (with fee) are available only through an appointment with a counselor in Honors Programs, A311 Murphy Hall.

### Education Abroad Program

Students participating in the Education Abroad Program may receive a maximum of 56 units of credit toward the degree including units earned in an Intensive Language Program.

### Foreign Language

Credit is not allowed for completing a less advanced course in grammar and/or composition after students have received credit for a more advanced course. College credit for an international student's native language and literature is allowed for courses taken in native colleges and universities or upper-division (advanced language courses only) and graduate courses taken at the University of California or another English-speaking institution of approved standing. No credit is allowed for lower-division courses.

### Performance Courses

No more than 12 units of music and/or dance performance courses (Dance 5, 6 through 16, 56 through 65, C109A, C113A, 114, C115, 116, Ethnomusicology 68A through 68Z, 91A through 91Z, 161A through 161Z, 168A through 168Z, Music 50, 60A through 61C, 160A through 161C, C185A through C186C, and World Arts and Cultures 114) may be applied toward the bachelor's degree, whether taken at UCLA or another institution.

### Physical Education

No more than 4 units in physical education activities courses may be applied toward the bachelor's degree.

### Physics Courses

Any two or more courses from Physics 1A, 1AH, 5A, and 6A are limited to a total of 6 units of credit.

### ROTC Courses

For students contracted in the Aerospace Studies Department, 36 units of aerospace studies credit may be applied toward the requirements for the bachelor's degree; for students contracted in the Military Science Department, 26 units of military science credit may be applied; for students

contracted in the Naval Science Department, 26 units of naval science credit may be applied.

## Statistics Courses

Credit is allowed for only one of Statistics 10, 12, 13, 15 (or former 10H, 11, or 14), and a maximum of 8 units for any combination of introductory statistics courses taken at UCLA and another institution.

## Upper-Division Tutorials

No more than 8 units of credit may be taken per term in upper-division tutorials numbered 195 through 199. The total number of units allowed in such courses for a letter grade is 32; see specific restrictions under each course.

## 300- and 400-Level Courses

No more than 8 units in the 300 and 400 series of courses may be applied toward the bachelor's degree. Credit is not granted for X300 and X400 courses taken at UCLA Extension.

## Academic Advising Services

The College offers academic advising and counseling to help students develop and thrive, both personally and academically, through individual meetings with an adviser in their advising unit: Academic Advancement Program, College Academic Counseling, College Academic Counseling in Athletics, or Honors Programs. College advisers work with students to plan their programs, understand requirements and regulations, learn about available resources, navigate the university, and maximize their undergraduate careers.

## Academic Advancement Program

Academic Advancement Program (AAP) values student diversity and fosters student empowerment. **AAP counselors** assist students in planning an academic program and meeting College and UC requirements. They also monitor degree progress and connect students with campus resources and opportunities. Counselors are available for scheduled or same-day appointments. Visit 1205 Campbell Hall or call 310-825-1481.

**AAP peer counselors** offer peer support and an undergraduate-focused view of life at UCLA. They also can assist students with planning an academic program and navigating campus resources.

## College Academic Counseling

**College Academic Counseling** (CAC) is committed to making students' campus life and learning experience a positive one. Academic advising helps students develop and thrive both personally and academically in individual meetings,

workshops, and other events to plan their programs, understand requirements and regulations, learn about available resources, navigate UCLA, and maximize their undergraduate careers. From orientation to graduation, CAC offers information, assistance, and support so that students can make well-informed decisions about their course of study and degree progress. For additional information or advising, students may come to A316 Murphy Hall, Monday through Friday from 8:30 a.m. to 4:30 p.m.; or call 310-825-3382.

**College Academic Mentors** work with first- and second-year students and new transfers for academic advising, choosing a major, and preparing for graduate or professional school. Students can also visit **CAC Peer Counselors** at various locations around campus for quick questions on degree requirements, rules and regulations, deadlines, petitions, and more.

## Honors Programs

**Honors Programs** offers academic counseling and student advising services in a welcoming, safe, and supportive environment. Honors counselors are specially trained professionals with whom students collaborate for pre- and post-graduate planning; while Honors student affairs advisors assist students in navigating the various university processes, rules, and regulations.

Students are welcome to visit the Honors Programs office, A-311 Murphy Hall, or call 310-825-1553.

## Student Athletics

**College Academic Counselors in Athletics** (CACiA) are assigned to work with UCLA NCAA varsity student athletes. Each team is assigned a specific counselor. The role of each counselor is to provide academic advising in the areas of program planning, academic difficulty advising, petitioning degree requirements, and major selection. CACiA support students as they explore academic and personal goals, and aim to empower them to take ownership of their educational experience. CACiA are also trained to observe and counsel with NCAA regulations in mind.

College Academic Counselors in Athletics are located in Academic and Student Services (AS2) in Athletics in Suite 127 of the JD Morgan Center. Student athletes can contact this office at (310) 825-8699 or by **e-mail**.

## Honors

College undergraduate students who achieve scholastic distinction may qualify for the following honors and programs.

## College Honors

The highest academic recognition the College confers on its undergraduate students is [College Honors](#), which is awarded to graduating seniors who successfully complete the College Honors program and who have an overall University of California grade-point average of 3.5 or better. The program offers exceptional undergraduate students an opportunity to pursue individual excellence.

## Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.915 grade-point average (GPA) in any one term, with at least 12 letter-graded units. The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete or a Not Passed (NP). Dean's Honors are automatically recorded on the transcript for the appropriate term.

## Departmental Honors

Individual departments and programs in the College offer departmental honors. Admission and curricular requirements vary according to the department or program. See [Curricula and Courses](#) for details, and consult with a departmental adviser about procedures and arrangements. Students who successfully complete the requirements graduate with departmental honors or highest honors.

## Latin Honors

Students who have achieved scholastic distinction may be awarded the bachelor's degree with Latin honors. To be eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained an overall grade-point average (GPA) at graduation that places them in the top 20 percent of College graduates (GPA of 3.915 or better) for *cum laude*, the top 10 percent (GPA of 3.965 or better) for *magna cum laude*, or the top five percent (GPA of 3.985 or better) for *summa cum laude*. Coursework taken on the Education Abroad Program is applied toward Latin honors at graduation. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year (fall, winter, spring, summer) determine student eligibility. Students should consult their Degree Audits, or the Registrar's [honors](#) web page, for the most current Latin honors calculations.

## Departmental Scholar Program

Departments may nominate exceptionally promising undergraduate students (juniors and seniors) as UCLA

[Departmental Scholars](#) to pursue bachelor's and master's degrees simultaneously. Qualifications include completion of 24 courses (96 quarter units) at UCLA or the equivalent at a similar institution, the requirements in preparation for the major, and eligibility to participate in the College Honors program. Students must also have at least one term of coursework remaining at UCLA. To obtain both the bachelor's and master's degrees, students must be provisionally admitted to the Division of Graduate Education, fulfill requirements for each program, and maintain a minimum 3.0 (B) GPA. No course may be used to fulfill requirements for both degrees. Interested students should consult with their department well in advance of application dates for graduate admission. For more information, contact the Honors Programs Office in A311 Murphy Hall.

## Graduate Study

The College of Letters and Science offers graduate students a variety of opportunities for academic pursuit, faculty-sponsored research, and fieldwork relative to specific programs and career goals.

With Division of Graduate Education approval and subject to UCLA minimum requirements, each department sets its own standards for admission and other requirements for award of master's and doctorate degrees. For complete degree requirements, see [program requirements for UCLA graduate degrees](#).

For information on proficiency in English requirements for international graduate students, see [Graduate Admission](#) in Graduate Study.

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# David Geffen School of Medicine

Steven M. Dubinett, MD, *Dean*

[Geffen School of Medicine](#)

1400 Geffen Hall

310-825-6081

[School admissions e-mail](#)

The top-ten-ranked David Geffen School of Medicine at UCLA is internationally recognized as a leader in research, medical education, and patient care. Along with the UCLA Health hospitals and facilities, the school is affiliated with more than a dozen major Southern California health care institutions.

## Degrees

The Geffen School of Medicine offers an MD degree program and postgraduate medical training programs; its

faculty members participate in the Graduate Programs in Bioscience. Additional master's and doctorate degrees are offered through the UCLA Division of Graduate Education.

- Biomathematics MS, PhD
- Clinical Research MS
- Data Science in Biomedicine MS
- Doctor of Medicine
- Genetic Counseling MS
- Human Genetics MS, PhD
- Microbiology, Immunology, and Molecular Genetics MS, PhD
- Molecular and Medical Pharmacology MS, PhD
- Molecular, Cellular, and Integrative Physiology PhD
- Neuroscience PhD
- Physics and Biology in Medicine MS, PhD
- Psychiatry and Biobehavioral Sciences Clinical Psychology Internship Certificate

## Articulated Degree Programs

- Doctor of Medicine/Clinical Research MS
- Doctor of Medicine/Division of Graduate Education health science major PhD
- Doctor of Medicine/Education MA
- Doctor of Medicine/Master of Legal Studies
- Doctor of Medicine/Master of Public Health

## Concurrent Degree Programs

- Doctor of Medicine/Master of Business Administration
- Doctor of Medicine/Master of Public Policy

## MD Degree Program

The Doctor of Medicine (MD) degree program is a four-year medical curriculum that prepares students broadly for careers in research, practice, and teaching in the medical field of their choice. For details on the MD curriculum, see the [current curriculum](#). For information about applying to the program, see the [application](#) web page or contact the David Geffen School of Medicine Admissions Office, Suite 305 Geffen Hall, Los Angeles, CA 90095-7035.

## Articulated Degree Programs

The Geffen School of Medicine and the Division of Graduate Education offer the [Medical Scientist Training Program](#), an articulated degree program that allows students to earn both the MD and PhD in about eight years, depending on the course of study and research. The PhD may be awarded in one of several medical or social sciences fields.

An articulated program with the Fielding School of Public Health allows students to earn both the MD and MPH degrees in five years. The program includes four years of medical school and one year plus one additional quarter at the Fielding School of Public Health. Separate application must be made to the Fielding School of Public Health during the second year of medical school. For more information on applying to the MPH, see the [Fielding School admissions](#) web page.

## Concurrent Degree Programs

Concurrent programs with the Anderson Graduate School of Management and Luskin School of Public Affairs allow UCLA medical students to earn both the MD and [MBA](#) degrees, or MD and [MPP](#) degrees, over five years by following a designated course of study and some shared coursework. Separate application must be made to the Anderson Graduate School of Management or Luskin School of Public Affairs during the second year of medical school.

## Special Programs

### Partnerships

Extending medical education to a broader segment of tomorrow's physicians and researchers, the Geffen School of Medicine admits a select group of students into two innovative partnership programs. In addition to completing the requirements for the MD degree, students engage in specialized coursework and/or projects designed to fulfill the mission of each program.

### Charles Drew/UCLA Medical Education Program

The mission of the [Charles Drew University \(CDU\)/UCLA Medical Education Program](#) is to train students to practice medicine with competence and compassion in disadvantaged rural and urban communities. Each year 24 students are admitted to the program. Students complete their pre-clerkship training at the UCLA campus, and complete their clinical work in specially designated training centers in medically underserved communities and at UCLA and affiliated hospitals.

### UCLA PRIME Program

The [UCLA PRIME Program](#) is a five-year, dual-degree program to develop leaders in medicine who address policy, care, and research issues in health care for underserved populations. A commitment to serve and experience in working with diverse medically disadvantaged populations is paramount. The program leads to the MD and a master's degree in areas that complement the mission of the pro-

gram. Each year 18 students are admitted to the class. Students identify with one of two programs: PRIME UCLA-Westwood or PRIME UCLA-CDU.

## Postgraduate Medical Training

Postgraduate medical training programs, including residencies, are offered through all the clinical departments at UCLA and the affiliated training hospitals such as Harbor-UCLA, Cedars-Sinai, and Greater Los Angeles VA System. Programs at the affiliated institutions broaden the scope of the teaching programs by offering extensive clinical facilities, special population settings, and diverse practice modes. Information about these programs is available from the individual clinical departments of the Geffen School of Medicine or the affiliated hospitals.

## Semel Institute for Neuroscience and Human Behavior

The [Semel Institute](#) is one of the world's leading interdisciplinary research and education institutes devoted to the understanding of complex human behavior. Fourteen research centers ranging from genetics to human culture, together with research initiatives distributed widely across the academic departments of the Geffen School of Medicine and the College of Letters and Science, offer a comprehensive and outstanding research and training environment for the study of neuroscience and behavior.

The research portfolio of the 400 faculty members, graduate students, and fellows who work in the institute spans behavioral genetics, developmental neurobiology, cognitive neuroscience, neuropharmacology, brain imaging, clinical research, health policy, and sociocultural studies of human behavior and its disorders.

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# Henry Samueli School of Engineering and Applied Science

Ah-Hyung Alissa Park, PhD, *Dean*

[Samueli School of Engineering and Applied Science](#)

6426 Boelter Hall  
310-825-2826

Founded in 1945, the UCLA Henry Samueli School of Engineering and Applied Science is committed to providing a rigorous hands-on engineering education to undergraduate and graduate students. Recognized internationally as a top-tier school in the field, UCLA Samueli is the birthplace of the Internet and has developed breakthrough technolo-

gies in aerospace systems, wireless communication, solar energy, clean water, and much more. As part of the top-ranked public university, the school is committed to a core mission of education, research, and service.

UCLA Samueli supports dynamic programs in traditional and new disciplines, and pursues cutting-edge research in areas such as precision medicine and bioengineering, sustainable and resilient urban systems, advanced materials and manufacturing, robotics and cyberphysical systems, computer networking and cybersecurity, artificial intelligence and machine learning, and data science. Partnerships across campus reflect the school's commitment to a wide range of interdisciplinary activities in health care, business, public policy, and more.

Students receive their education through lectures, hands-on experience in makerspace and laboratories, and capstone projects that develop real-world problem-solving skills. The undergraduate degree curriculum also exposes students to the humanities, social sciences, life sciences, and the arts. It includes a technical breadth requirement, designed to provide students with working knowledge of a technical field outside their major. The school emphasizes that engineers and computer scientists must uphold high ethical standards in creating and managing technology, and is committed to mentoring students from diverse backgrounds and experiences. Opportunities exist for students to gain exposure to entrepreneurship and commercialization of technologies. Undergraduate students are encouraged to participate in industrial internships and academic research. Students are committed to a high standard of achievement and service to society, consistent with the mission of UCLA.

## Departments and Programs

The Henry Samueli School of Engineering and Applied Science has seven departments that offer study in aerospace engineering, bioengineering, chemical engineering, civil engineering, computer engineering, computer science, computer science and engineering, electrical and computer engineering, electrical engineering, manufacturing engineering, materials engineering, and mechanical engineering. Undergraduate programs in aerospace engineering, bioengineering, chemical engineering, civil engineering, computer science and engineering, electrical engineering, materials engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission of [ABET](#). The computer science and computer science and engineering programs are accredited by the Computing Accreditation Commission of [ABET](#). The undergraduate program in computer engineering, established in fall 2017, will be submitted to ABET for accreditation during the next ABET visit in 2024.



For specific programs, see department information in [Curricula and Courses](#); or refer to the school [Announcement](#) available from the [Office of Academic and Student Affairs](#), 6426 Boelter Hall.

## Degrees

The Henry Samueli School of Engineering and Applied Science offers the following degrees and undergraduate minors:

- Aerospace Engineering BS, MS, PhD
- Bioengineering BS, MS, PhD
- Chemical Engineering BS, MS, PhD
- Civil Engineering BS, MS, PhD
- Computer Engineering BS
- Computer Science BS, MS, PhD
- Computer Science and Engineering BS
- Electrical and Computer Engineering MS, PhD
- Electrical Engineering BS
- Engineer
- Engineering online MS
- Engineering – Aerospace online MS
- Engineering – Computer Networking online MS
- Engineering – Electrical online MS
- Engineering – Electronic Materials online MS
- Engineering – Integrated Circuits online MS
- Engineering – Manufacturing and Design online MS
- Engineering – Materials Science online MS
- Engineering – Mechanical online MS
- Engineering – Signal Processing and Communications online MS
- Engineering – Structural Materials online MS
- Engineering and Applied Science Graduate Certificate of Specialization
- Manufacturing Engineering MS
- Master of Engineering
- Materials Engineering BS
- Materials Science and Engineering MS, PhD
- Mechanical Engineering BS, MS, PhD

## Concurrent Degree Program

Computer Science MS/Master of Business Administration

## Undergraduate Minors

- Bioinformatics
- Data Science Engineering

Environmental Engineering

## Undergraduate Admission

Applicants for admission to the school must satisfy the UC admission requirements as outlined in the [Undergraduate Admission](#) section of Undergraduate Study. Students must apply directly to the Henry Samueli School of Engineering and Applied Science by selecting one of the majors within the school or the undeclared engineering option (only available to freshmen). In the selection process, many elements are considered including grades, academic preparation, achievement and ability in science, technology, engineering, and mathematics (STEM), ability to succeed in a rigorous program, demonstrated interest in STEM, and the potential to become a supportive member of an inclusive community that values diversity and welcomes members from all genders and all ethnic, religious, and economic backgrounds.

Applicants are accepted at either the freshman or junior level.

## Admission as a Freshman

Freshman applicants must meet the UC subject and scholarship requirements described on [undergraduate admission](#). UC requirements specify a minimum of three years of mathematics, including the topics covered in elementary and advanced algebra and two- and three-dimensional geometry. Additional study in mathematics, concluding with calculus or precalculus in the senior year, is strongly recommended and typical for applicants to UCLA Samueli.

## Credit for Advanced Placement Examinations

Students may fulfill part of the school requirements with credit allowed at the time of admission for College Board Advanced Placement (AP) Examinations with scores of 3, 4, or 5. Students with AP Examination credit may exceed the 213-unit maximum by the amount of this credit. AP Examination credit for freshmen entering in fall quarter fulfills requirements as published on the school [AP table](#).

Students who have completed 36 quarter units after high school graduation at the time of the examination receive no AP Examination credit.

## Admission as a Junior

Students who begin their college work at a California community college are expected to remain at the community college to complete the lower-division requirements in chemistry, computer programming, English composition, mathematics, physics, and the recommended engineering courses before transferring to UCLA. Transfer students who have completed the recommended lower-division program in engineering at California community colleges normally

can complete the remaining requirements for one of the BS degrees in two to three academic years of full-time study. Students who select certain majors, such as Computer Science and Engineering or Chemical Engineering, may be required to complete additional lower-division courses for the major sequence.

## Lower-Division Requirements

Applicants to the school in junior standing should have completed 90 quarter units (60 semester units) in good standing, including the following lower-division minimum subject requirements:

1. Chemistry courses equivalent to Chemistry and Biochemistry 20A, 20B, 20L at UCLA (only Chemistry and Biochemistry 20A is required for the Electrical Engineering major; the Bioengineering and Chemical Engineering curricula also require Chemistry and Biochemistry 30A, 30AL, 30B). The Computer Engineering, Computer Science, and Computer Science and Engineering majors do not require chemistry
2. Mathematics courses equivalent to Mathematics 31A, 31B, 32A, 32B, 33A, 33B at UCLA. The Aerospace Engineering and Mechanical Engineering majors do not require Mathematics 33B
3. Physics courses equivalent to Physics 1A, 1B, 1C, 4AL, 4BL at UCLA, depending on curriculum selected
4. Computer programming: applicants to the Computer Engineering, Computer Science, Computer Science and Engineering, and Electrical Engineering majors may take any C++, C, or Java course to meet the admission requirement, but to be competitive the applicant must take a C++ course equivalent to Computer Science 31 at UCLA. Applicants to Chemical Engineering may take any C++, C, Java, or MATLAB course to satisfy the admission requirement, but lack of a MATLAB course equivalent to Mechanical and Aerospace Engineering M20 or Civil and Environmental Engineering M20 at UCLA will delay time to graduation. Applicants to all other engineering majors may take any C++, C, Java, or MATLAB course to satisfy the admission requirement, but the MATLAB course equivalent to Mechanical and Aerospace Engineering M20 or Civil and Environmental Engineering M20 is preferred
5. At least one general education (GE) course in the arts, humanities, or social sciences as required to be UC eligible

Transfer students must also complete a course equivalent to English Composition 3 at UCLA and a second UC-transferable English composition course.

All lower-division requirements should be completed by the end of the spring term prior to anticipated enrollment at UCLA.

## Transfer Credit

Students transferring to the school from institutions that offer instruction in engineering subjects in the first two years, particularly California community colleges, may be given credit for certain engineering core requirements.

Many sophomore courses in circuit analysis, strength of materials, and properties of materials may satisfy Civil and Environmental Engineering 108, Electrical and Computer Engineering 100, and Materials Science and Engineering 104 requirements respectively. Students should check with the [Office of Academic and Student Affairs](#), 6426 Boelter Hall.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and department requirements for the Bachelor of Science degree.

## University Requirements

The University of California has two requirements that undergraduate students must satisfy in order to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. See [Degree Requirements](#) in Undergraduate Study for details.

### Degree Requirements

#### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

#### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Engineering Writing
5. Technical Breadth
6. Ethics Requirement
7. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

#### Department Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or department requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

## School Requirements

There are seven requirements that must be satisfied for award of a degree.

### Unit Requirement

The minimum units allowed for students is between 180 and 185, depending on the program. The maximum allowed is 213 units.

After 213 quarter units, enrollment may not normally be continued in the school without special permission from the associate dean. This regulation does not apply to Departmental Scholars.

### Scholarship Requirement

Students must earn at least a 2.0 (C) grade-point average in all courses taken at any UC campus. In addition, at least a 2.0 grade-point average must be achieved in total upper-division required courses and total upper-division engineering courses. See a counselor in 6426 Boelter Hall for details.

### Academic Residence Requirement

Of the last 48 units completed for the BS degree, 36 must be earned in residence at the Samueli School of Engineering and Applied Science on this campus. No more than 16 of the 36 units may be completed in summer sessions at UCLA.

### Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirement.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Engineering Writing. Both courses must be taken for a letter grade, and students must receive a C or better grade in each (a C– grade is not acceptable).

#### Writing I

The Writing I requirement must be satisfied by the end of the second year of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable). The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a

Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

### Engineering Writing

The Engineering Writing requirement is satisfied by selecting one approved engineering writing (EW) course from the school writing course list or by selecting one approved Writing II (W) course. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable). Writing courses are published in the [Schedule of Classes](#).

Applicable writing courses also approved for general education credit may fulfill the relevant general education foundational area.

### Technical Breadth Requirement

The technical breadth requirement consists of a set of three courses providing sufficient breadth outside the student's core program. A list of school Faculty Executive Committee-approved technical breadth requirement courses is available in the [Office of Academic and Student Affairs](#), 6426 Boelter Hall, and deviations from that list are subject to approval by the associate dean for Academic and Student Affairs. None of the technical breadth requirement courses selected by students can be used to satisfy other major course requirements.

### Ethics Requirement

The ethics and professionalism requirement is satisfied by completing one course from Engineering 181EW, 182EW, 183EW, or 185EW with a C or better grade (a C– or Passed grade is not acceptable). The course may be applied toward the Engineering Writing requirement.

### General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

Students may take one GE course per term on a Passed/Not Passed (P/NP) basis if they are in good academic standing

and are additionally enrolled in nine letter-graded units. For details on P/NP grading, see [Grades](#) in Policies and Regulations or consult with a counselor in the [Office of Academic and Student Affairs](#).

GE courses used to satisfy the engineering writing and/or ethics requirements must be taken for a letter grade.

## Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Five courses (24 units minimum) are required. Engineering writing requirement courses also approved for GE credit may be applied toward the relevant GE foundational areas.

Students must meet with a counselor in the [Office of Academic and Student Affairs](#) to determine the applicability of GE cluster courses toward the engineering writing or GE requirements.

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

### Foundations of the Arts and Humanities

Two 5-unit courses selected from two different subgroups:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. The courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

### Foundations of Society and Culture

Two 5-unit courses, one from each subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate

**General Education Requirements**

**Foundations of the Arts and Humanities**  
 Literary and Cultural Analysis  
 Philosophical and Linguistic Analysis  
 Visual and Performance Arts Analysis and Practice . . . . . 2 courses  
 Each course must be from a different subgroup.  
 Total = 10 units minimum

**Foundations of Society and Culture**  
 Historical Analysis . . . . . 1 course  
 Social Analysis . . . . . 1 course  
 Total = 10 units minimum

**Foundations of Scientific Inquiry**  
 Life Sciences . . . . . 1 course  
 Total = 4 units minimum

**Total GE . . . . . 5 courses/24 units minimum**

Engineering writing requirement courses also approved for GE credit may be applied toward the relevant GE foundational areas.

how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated.

### Foundations of Scientific Inquiry

One course (4 units minimum) from the Life Sciences subgroup or one course from Bioengineering CM145/Chemical Engineering CM145, Chemistry and Biochemistry 153A, or Civil and Environmental Engineering M166/Environmental Health Sciences M166:

- Life Sciences

This requirement is automatically satisfied for Bioengineering and Chemical Engineering majors. The requirement is satisfied for Civil Engineering majors by the natural science requirement.

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved

courses that satisfy the Foundations of Knowledge GE plan, consult with an academic counselor or see the [master list](#).

## Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE or transfer core courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all UCLA GE requirements are fulfilled when students complete the IGETC courses. Students who select the IGETC must complete it entirely before enrolling at UCLA. Otherwise, they must fulfill the Henry Samueli School of Engineering and Applied Science GE requirements. The school does not accept partial IGETC.

## Department Requirements

Departments generally set two types of requirements that must be satisfied for award of a degree: preparation for the major (lower-division courses) and the major (upper-division courses). Preparation for the major courses should be completed before beginning upper-division work.

## Preparation for the Major

A major requires completion of a set of courses known as preparation for the major. Each department sets its own preparation for the major requirements; see [Curricula and Courses](#).

## The Major

Students must complete their major with a scholarship grade-point average of at least 2.0 (C) in all courses in order to remain in the major. Each course in the major department must be taken for a letter grade. See [Curricula and Courses](#) for details on each major.

## Minors and Double Majors

Students in good academic standing may be permitted to have a minor or double major. The second major must be outside the school (e.g., Electrical Engineering major and Economics major). If approved, no more than 20 upper-division units may be shared by both majors. Students are not permitted to have a double major with two school majors (e.g., Chemical Engineering and Civil Engineering).

Students may file an Undergraduate Request to Double Major or Add Minor form at the [Office of Academic and Student Affairs](#). The school determines final approval of a minor or double major request; review is done on a case-by-case basis, and filing the request does not guarantee approval. Students interested in a minor or double major should meet with their counselor in 6426 Boelter Hall.

While minor and double major requests are considered, specializations are not considered.

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

The study list is a record of classes that a student is taking during a particular term. It is the student's responsibility to present a study list that reflects satisfactory progress toward the degree. Study lists or programs of study that do not comply with the standards set by the faculty may result in enforced withdrawal from UCLA or other academic action. Study lists require approval of the dean of the school or a designated representative.

Undergraduate students in the school are expected to enroll in at least 12 units each term. Students enrolling in fewer than 12 units must obtain approval by petition to the dean before enrolling in classes. The normal program is 16 units per term. Students may not enroll in more than 21 units per term unless an Excess Unit Petition is approved in advance by the dean.

### Minimum Progress

Full-time undergraduate students must complete a minimum of 36 units in three consecutive terms in which they are registered.

### Concurrent Enrollment

Concurrent enrollment—defined as taking courses during regular sessions (fall, winter, and spring quarters) for credit at UCLA and, at the same time, at a non-UC institution, including UCLA Extension—is not permitted except in extraordinary circumstances; and no credit is given for such



courses unless the approval of UCLA Samueli has been obtained by petition prior to enrollment.

Special concurrent enrollment programs with other UC campuses, and intersegmental enrollment programs with California State University (CSU) or California Community College (CCC) schools, are available to eligible students.

## Credit Limitations

The following credit limitations apply to all undergraduate students enrolled in the school:

### Advanced Placement Examinations

Some portions of Advanced Placement (AP) Examination credit are evaluated by corresponding UCLA course number. If students take the equivalent UCLA course, a deduction of UCLA unit credit is made prior to graduation. See the school [AP table](#).

### College Level Examination Program

Credit earned through the College Level Examination Program (CLEP) may not be applied toward the bachelor's degree.

### Community College/Lower Division Transfer Limitation

After completing 105 lower-division quarter units toward the degree in all institutions attended, students are allowed no further unit credit for courses completed at a community college or for lower-division courses completed at any institution outside of the University of California. The University of California does not grant transfer credit for community college or lower-division courses beyond 105 quarter units, but students may still receive subject credit for this coursework to satisfy lower-division requirements. Units earned through Advanced Placement (AP), International Baccalaureate (IB), and/or A-Level examinations are not included in the limitation. Units earned at any UC campus (through extension, summer, cross-campus, UCEAP, Intercampus Visitor Program, and regular academic year enrollment) are not included in the limitation. To convert semester units into quarter units, multiply the semester units by 1.5; for example, 12 semester units  $\times 1.5 = 18$  quarter units. To convert quarter units into semester units, multiply the quarter units by .666; for example, 12 quarter units  $\times .666 = 7.99$  or 8 semester units.

### Foreign Language

No credit is granted toward the bachelor's degree for college foreign language courses equivalent to quarter levels one and two if the equivalent of level two of the same language was completed with satisfactory grades in high school.

## Repetition of Courses

For undergraduate students who repeat a total of 16 or fewer units, only the most recently earned letter grades and grade points are computed in the grade-point average (GPA). After repeating 16 units, the GPA is based on all letter grades assigned and total units attempted. The grade assigned each time a course is taken is permanently recorded on the transcript.

1. To improve the grade-point average (GPA), students may repeat only those courses in which they receive a C– or lower grade; NP or U grades may be repeated to gain unit credit. Courses in which a letter grade is received may not be repeated on a P/NP or S/U basis. Courses originally taken on a P/NP or S/U basis may be repeated on the same basis or for a letter grade.
2. Repetition of a course more than once requires the approval of the College or school or the dean of the Division of Graduate Education and is granted only under extraordinary circumstances.
3. Degree credit for a course is given only once, but the grade assigned each time the course is taken is permanently recorded on the transcript.
4. There is no guarantee that in a later term a course can be repeated (such as in cases when a course is deleted or no longer offered). In these cases, students should consult with their academic counselor to determine if there is an alternate course that can be taken to satisfy a requirement. The alternate course would not count as a repeat of the original course.

## Counseling Services

Academic counselors in the [Office of Academic and Student Affairs](#) assist students with UCLA procedures and answer questions related to general requirements.

New undergraduate students must have their course of study approved by an academic counselor. After the first term, curricular and career advising is accomplished on a formal basis. First-year students are assigned a faculty adviser in their particular specialization.

In addition, undergraduate students are assigned, by major, to an academic counselor in the Office of Academic and Student Affairs who provides them with advice regarding general requirements for degrees, and UC, UCLA, and school regulations and procedures. It is the student's responsibility to periodically meet with their academic counselor, as well as with their faculty adviser, to discuss curriculum requirements, programs of study, and any other academic matters of concern.

Students normally follow the curriculum in effect when they enter the school. California community college transfer students may also select the curriculum in the catalog in effect at the time they began their community college work in an engineering program, provided attendance has been continuous since that time.

Students admitted to UCLA in fall quarter 2012 and thereafter use the [Degree Audit](#) system, which can be accessed through MyUCLA. Students should contact their academic counselor in 6426 Boelter Hall with any questions.

Undergraduate students admitted to UCLA prior to fall quarter 2012, and beginning their upper-division major field coursework, are advised to meet with their academic counselor in 6426 Boelter Hall to review their degree requirements.

## Honors

Undergraduate students who achieve scholastic distinction may qualify for the following honors and programs:

### Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.862 grade-point average (GPA) in any one term, with at least 15 units (12 units of letter grade). The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete or a Not Passed (NP) grade, or repeat a course. Only courses applicable to an undergraduate degree are considered toward eligibility for Dean's Honors. Dean's Honors are automatically recorded on the transcript for the appropriate term.

### Latin Honors

Students who have achieved scholastic distinction may be awarded the bachelor's degree with honors. To be eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained a cumulative grade-point average (GPA) at graduation that places them in the top 20 percent of the school (GPA of 3.862 or better) for *cum laude*, the top 10 percent (GPA of 3.934 or better) for *magna cum laude*, and the top five percent (GPA of 3.972 or better) for *summa cum laude*. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year determine student eligibility.

Based on grades achieved in upper-division courses applied to a specific school degree requirement, engineering students must also have a 3.862 GPA for *cum laude*, 3.934 for

*magna cum laude*, and 3.972 for *summa cum laude*. For all designations of honors, students must have a minimum 3.25 GPA in their major field upper-division courses. Upper-division courses that are not applied to a specific school BS degree requirement are excluded from these upper-division averages.

## Departmental Scholar Program

Exceptionally promising juniors or seniors may be nominated as Departmental Scholars to pursue engineering bachelor's and master's degree programs simultaneously. Minimum qualifications include the completion of 24 courses (96 quarter units) at UCLA, or the equivalent at a similar institution; a minimum 3.7 grade-point average (GPA) in the major field upper-division courses and a minimum 3.7 cumulative GPA; and the requirements in preparation for the major. To obtain both the bachelor's and master's degrees, Departmental Scholars fulfill the requirements for each program. Students may not use any one course to fulfill requirements for both degrees.

For details, contact the [Office of Academic and Student Affairs](#) in 6426 Boelter Hall well in advance of application dates for admission to graduate standing.

## Exceptional Student Admissions Program

There is an [Exceptional Student Admissions Program](#) (ESAP) for outstanding Samueli School undergraduates who wish to enter the school graduate program upon completion of the BS degree. ESAP is an alternative to the Departmental Scholar Program. In contrast to that program, an ESAP-admitted student would be an enrolled graduate student and would be eligible for consideration of graduate fellowships and teaching assistant positions if available.

## Special Programs

### Extracurricular Activities

Students are encouraged to participate in UCLA extracurricular activities, especially those relevant to engineering such as the student engineering society (Engineering Society, University of California), student publications, and programs of the technical and professional engineering societies in the Los Angeles area.

The student body takes an active part in shaping policies of the school through elected student representatives on the school Faculty Executive Committee.

## Women in Engineering

Among UCLA engineering students, women make up approximately 30 percent of the undergraduate and 25 percent of the graduate enrollment. Today's opportunities for women in engineering are excellent, as both employers and educators try to change the image of engineering as a males-only field. Women engineers are in great demand in all fields of engineering.

The [Society of Women Engineers](#) (SWE) is a not-for-profit educational and service organization that empowers under-represented groups to succeed and advance in the field of engineering. Its objective is to promote diversity in engineering and provide professional, outreach, advocacy, and technical opportunities for its members. It hosts many flagship events including the Evening with Industry networking event; WOW That's Engineering Day, at which girl scouts are taught about engineering on campus; Engineers for Professionals Inclusions Conference (EPIC), at which a panel of industry speakers discusses ways to combat prejudice in the workplace; and QWER Hacks, which is an LGBTQ+ friendly beginner hackathon. It also provides various technical workshops, mentorship programs, and socials to build a community.

## Continuing Education

Continuing education in engineering is developed and administered by the UCLA Extension (UNEX) [Engineering and Technology Department](#) in close cooperation with Henry Samueli School of Engineering and Applied Science. The department offers evening classes, short courses, certificate programs, special events, and education and training at the workplace.

## Graduate Study

### Admission

In addition to meeting the requirements of the Division of Graduate Education, applicants to graduate programs for some departments in the Samueli School of Engineering and Applied Science are required to take the General Test of the Graduate Record Examination (GRE). Specific information about the GRE may be obtained from the department of interest.

Students entering the PhD program are normally expected to have completed the requirements for the master's degree with at least a 3.25 grade-point average and to have demonstrated creative ability. Check with the department of interest for specific GPA requirements. Usually the MS degree is required for admission to the PhD program. Exceptional students, however, may be admitted directly to

the PhD program upon receiving their BS degree. In most cases, the applicant is expected to obtain their MS degree along the way.

For information on proficiency in English requirements for international graduate students, see [Graduate Admission](#) in Graduate Study.

To submit a graduate application, see [application for graduate admission](#).

## Master of Science in Engineering Online Degree

The [Master of Science in Engineering](#) online self-supporting degree program enables employed engineers and computer scientists to augment their technical education beyond the Bachelor of Science degree, and enhances their value to the technical organizations by which they are employed.

## Master of Engineering Degree

The one-year Master of Engineering (MEng) is a self-supporting, professional degree designed to develop future engineering leaders. Tailored to those who wish to pursue technical management positions, the degree addresses the needs of both students and industry with high-tech skill set and management savvy. Students in the program develop technical mastery in emerging research areas, learning business and technology management skills while creating real-world projects with industry input.

## Concurrent Degree Program

A concurrent degree program between the Henry Samueli School of Engineering and Applied Science and the Anderson Graduate School of Management allows students to earn two master's degrees simultaneously: the MBA and the MS in Computer Science. Students should contact the Office of Academic and Student Affairs for details.

## PhD Degrees

The PhD programs prepare students for advanced study and research in the major areas of engineering and computer science. All candidates must fulfill the minimum requirements of the Division of Graduate Education. Major and minor fields may have additional course and examination requirements. For more information, contact the individual department.

## Fields of Study

Established fields of study for the PhD are listed below. With the support of an adviser, students may propose any other

field of study to their department. Instructions on the definition of acceptable ad hoc fields and procedures for their approval are available in each department office.

### **Bioengineering Department**

Biomedical data sciences; biomedical devices and instrumentation; biomedical image processing (biomedical imaging hardware development and biomedical signal and image processing); molecular, cellular, and tissue engineering; neuroengineering

### **Chemical and Biomolecular Engineering Department**

Chemical engineering

### **Civil and Environmental Engineering Department**

Civil engineering materials, environmental engineering, geotechnical engineering, hydrology and water resources engineering, structures (structural mechanics and earthquake engineering), transportation engineering

### **Computer Science Department**

Artificial intelligence, computational systems biology, computer networks, computer science theory, computer system architecture, data science computing, graphics and vision, software systems

### **Electrical and Computer Engineering Department**

Circuits and embedded systems, physical and wave electronics, signals and systems

### **Materials Science and Engineering Department**

Ceramics and ceramic processing, electronic and optical materials, structural materials

### **Mechanical and Aerospace Engineering Department**

Applied plasma physics, applied mathematics, and data science and machine learning (established minors fields only); design, robotics, and manufacturing; fluid mechanics; micro-nano engineering; structural and solid mechanics; systems and control; thermal science and engineering

## **Graduate Certificate of Specialization**

The school offers a Certificate of Specialization in all areas, except computer science. Requirements for admission are the same as for the MS degree.

Each graduate certificate program consists of five 100- or 200-series courses, at least two of which must be at the graduate level. No work completed for any previously awarded degree or credential may be applied toward the certificate. Successful completion of a certificate program requires an overall minimum 3.0 (B) grade-point average in all courses applicable to the certificate. In addition, graduate certificate candidates are required to maintain a minimum 3.0 (B) grade-point average in 200-series courses used in the program. A minimum of three terms of academic residence is required. The time limitation for completing the

requirements of a certificate program is two calendar years. Details about certificate programs may be obtained from each department office.

Courses completed in the school for a Certificate of Specialization may subsequently be applied toward master's and/or doctorate degrees.

## **Graduate Degree Requirements**

Graduate degree information is updated annually in [program requirements for UCLA graduate degrees](#).

Lower-division courses may not be applied toward graduate degrees. In addition, most departments do not allow courses that are required for a BS degree in engineering to count toward a graduate degree. Consult the departmental graduate affairs office for more information.

Individual departments may impose certain restrictions on the applicability of other undergraduate courses toward graduate degrees. Consult with the graduate adviser on departmental requirements and restrictions.

### **Major Fields or Subdisciplines**

The MS program focuses on one major field. The major fields and subdisciplines offered at the MS level in most cases parallel those listed for the PhD program. There are some differences (for example, manufacturing engineering in the Department of Mechanical and Aerospace Engineering is offered only at the MS level). Students should contact the specific department regarding possible differences between the MS and PhD fields and subdisciplines. Students are free to propose to the school any other field of study, with the support of their adviser.

### **Course Requirements**

A total of nine courses is required for an MS degree, including a minimum of five graduate courses. (Some fields require more than five; obtain specific information from the department of interest.) A majority of the total formal course requirement and of the graduate course requirement must consist of school courses. In the thesis plan, seven of the nine courses must be formal courses, including at least four from the 200 series. The remaining two courses may be 598 courses involving work on the thesis. In the comprehensive examination plan, at least five of the nine courses must be in the 200 series; the remaining four courses may be either 200-series graduate or upper-division undergraduate courses. No 500-series courses may be applied toward the comprehensive examination plan requirements.

### **Thesis Plan**

The thesis must either describe some original piece of research that students have done, usually but not necessar-

ily under the supervision of the thesis committee; or supply a critical exposition of some topic in their major field of study. Students would normally start to plan the thesis at least one year before award of the MS degree is expected. There is no examination under the thesis plan.

## Comprehensive Examination Plan

For information on the comprehensive examination plan for each department, see [program requirements for UCLA graduate degrees](#).

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# Herb Alpert School of Music

Eileen L. Strempel, DM, *Dean*

## Herb Alpert School of Music

2539 Schoenberg Music Building  
310-825-4761

First of its kind in the UC system, the UCLA Herb Alpert School of Music focuses on scholarship, performance, composition, pedagogy, and understanding of music in all its contemporary and historical diversity.

With its three outstanding departments of Ethnomusicology, Music, and Musicology—and interdepartmental programs for Global Jazz Studies and Music Industry—the Herb Alpert School of Music aspires to educate the whole student through productive collaboration between performance and scholarship; a cross-cultural, global understanding of the art of music; and preparatory training for a broad range of careers in music after graduation.

Public concerts, lectures, symposia, master classes, and musical theater and opera productions are hallmarks of the school. Each department hosts a calendar of events open to the entire community, enriching the lives of both those on stage and those in the audience, and contributing to the quality of life in Los Angeles and beyond.

Schoenberg Music Building includes the Lani Hall (recital hall) and Schoenberg Hall (main concert hall), both fully equipped for audio recording. The building also houses the Music Library, Ethnomusicology Archive, Ethnomusicology Laboratory, Henry Mancini Media Laboratory, World Instrument Collection, and Herbie Hancock Institute of Jazz Performance, as well as numerous classrooms, practice rooms, orchestra room, band room, choral room, organ studio, and ethnomusicology performance rooms.

The Evelyn and Mo Ostin Music Center includes a high-technology recording studio, spaces for rehearsal and teaching, a café and social space for students, and an Internet-based music production center.

## Departments and Programs

Students in the Ethnomusicology Department study the performance and context of music-making from a global perspective. The Music Department offers majors in Music Composition, Music Education, and Music Performance. The Musicology Department offers students a broad understanding of the history and culture of music.

The school is also home to four undergraduate minors. The Musicology minor offers undergraduates an overview of music history and the study of music. Students may select from a wide variety of undergraduate courses that range through the history of European and American music. The Music Industry minor introduces students to critical perspectives on the formative effects the music industry and music technology have on musical practices around the world. The Ethnomusicology minor gives students who are interested in the culture of music a unique opportunity to participate in a hands-on educational experience. Students perform in ensembles, explore the world's instruments, and study global traditions. The Iranian Music minor introduces students to the rich variety of musical expressions in Iran and the Iranian diaspora by combining hands-on musical experiences with academic study. Students take advantage of three ensembles to study the performative, improvisatory, and experimental aspects of Iranian traditional and popular music.

Information regarding academic programs is available from the [Office of Student Affairs](#), 1642 Schoenberg Music Building.

## Teaching Credentials

Students interested in obtaining instructional credentials for California elementary and secondary schools should contact the [Teacher Education Program](#), 1009 Moore Hall.

## Degrees

The Herb Alpert School of Music offers the following degrees and undergraduate minors:

Ethnomusicology BA, MA, CPhil, PhD

Global Jazz Studies BA

Master of Music

Music BA, MA, MM, CPhil, DMA, PhD

Music Composition BA

Music Education BA

Music History and Industry BA

Music Industry BA

Music Performance BM

Musicology BA, MA, CPhil, PhD



## Undergraduate Minors

Ethnomusicology  
Iranian Music  
Music Industry  
Musicology

## Undergraduate Admission

In addition to the UC undergraduate application, some departments require auditions, interviews, portfolios, or evidence of creativity. Information regarding departmental requirements is available on each department website; see the school [undergraduate admission](#) web page. After the UC application has been submitted, applicants need to submit supplemental application material and should consult the individual department website for details.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and department requirements for the Bachelor of Arts and Bachelor of Music degrees.

### Degree Requirements

#### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

#### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Quantitative Reasoning
6. Foreign Language
7. Diversity
8. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

#### Department Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or department requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

## University Requirements

The University of California has two requirements that undergraduate students must satisfy in order to graduate:

Entry-Level Writing or English as a Second Language, and American History and Institutions. See [Degree Requirements](#) in Undergraduate Study for details.

Students enrolled in English Composition 1A, 1B, and 2I must take each course for a letter grade.

## School Requirements

There are eight requirements that must be satisfied for award of a degree.

## Unit Requirement

Students must complete for credit, with a passing grade, no fewer than 180 units and no more than 216 units, of which at least 60 units must be upper-division courses (numbered 100 through 199). Credit for upper-division tutorials numbered 195 through 199 is limited to a maximum of 24 units total for a letter grade, 8 of which may be applied toward the major.

## Scholarship Requirement

A 2.0 (C) grade-point average is required in all work attempted at the University of California, exclusive of courses in UCLA Extension and those graded Passed/Not Passed. A 2.0 (C) grade-point average is also required in all upper-division courses in the major taken at the University of California, as well as in all courses applied toward the general education and UC requirements.

## Academic Residence Requirement

Students are in residence while enrolled and attending classes at UCLA with a declared major in the Herb Alpert School of Music. Of the last 45 units completed for the bachelor's degree, 35 must be earned while in residence at the school. No more than 18 of the 35 units may be completed in UCLA summer sessions.

Courses offered by UCLA Extension may not be applied toward any part of the residence requirement.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirement.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Writing II. The courses must be taken for letter grades, and students must

receive a C or better grade in each (a C– grade is not acceptable).

## Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

## Writing II

The Writing II requirement must be satisfied within the first seven terms of enrollment by completing one course from a faculty-approved list of [Writing II courses](#) and available on the student Degree Audit; see the Registrar's [Writing II requirement](#) web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses may also fulfill preparation for the major or minor requirements and, if approved for general education (GE) credit, may also fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I, Writing II, and reciprocity requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

## Quantitative Reasoning Requirement

Students must demonstrate basic skills in quantitative reasoning. The requirement may be satisfied by completing one approved UCLA course (see list below) for a C or Passed or better grade (a C– or Not Passed grade is not acceptable).

The quantitative reasoning requirement may also be satisfied by achieving an SAT Reasoning Test Mathematics section score of 600 or better for exams taken January 2016 or

earlier, or achieving an SAT Mathematics section score of 620 or better for exams taken March 2016 or later, or an SAT Subject Test in Mathematics score of 550 or better.

If approved for general education (GE) credit, applicable courses may also fulfill a GE requirement. Approved courses include

- Biostatistics 100A, 100B
- Life Sciences 20, 30A, 30B, 40
- Mathematics 3A, 31A, 31AL
- Philosophy 31
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C
- Public Affairs 60
- Statistics 10, 12, 13

## Foreign Language Requirement

Students may meet the foreign language requirement by scoring 3, 4, or 5 on the College Board Advanced Placement (AP) foreign language examination in Chinese, French, German, Italian, Japanese, or Spanish, or scoring 4 or 5 on the AP foreign language examination in Latin; presenting a UCLA foreign language proficiency examination score indicating competency through level three; or completing one college-level foreign language course equivalent to level three or above or American Sign Language 1, 2, and 3, or 8 at UCLA with a C or Passed or better grade. The foreign language requirement must be completed within the first six terms of enrollment.

International students may petition to use an advanced course in their native language for this requirement. Students whose entire secondary education has been completed in a language other than English may petition to be exempt from the foreign language requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the foreign language and reciprocity requirements.

Courses that may be used to fulfill this requirement are published on the Registrar's [foreign language requirement](#) web page.

## Diversity Requirement

The diversity requirement is predicated on the notion that students in music must be trained to understand the local, national, and global realities in which they make, understand, interpret, and teach music. Those realities include the multicultural, transnational, and global nature of contemporary society. To satisfy the requirement, students

must complete one course from the faculty-approved list of diversity courses (available in the [Schedule of Classes](#), through degree audits, or in the [Office of Student Affairs](#)). The course must be taken for a letter grade, and students must receive a C or better grade (a C- or Passed grade is not acceptable).

Applicable courses may also fulfill major, minor, or elective requirements and, if approved for general education (GE) credit, may fulfill a GE requirement. As such, students are not required to complete an additional course to satisfy the diversity requirement.

## General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

<b>General Education Requirements</b>	
<b>Foundations of the Arts and Humanities</b>	
Literary and Cultural Analysis . . . . .	1 course
Philosophical and Linguistic Analysis . . . . .	1 course
Visual and Performance Arts Analysis and Practice	1 course
Total = 15 units minimum	
<b>Foundations of Society and Culture</b>	
Historical Analysis . . . . .	1 course
Social Analysis . . . . .	1 course
Third course from either subgroup . . . . .	1 course
Total = 15 units minimum	
<b>Foundations of Scientific Inquiry</b>	
Life Sciences/Physical Sciences . . . . .	2 courses
Two courses from either subgroup. If both courses are selected from the same subgroup, they must be from different departments.	
Total = 8 units minimum	
<b>Total GE . . . . . 8 courses/38 units minimum</b>	
A Writing II course also approved for general education may be applied toward the relevant general education foundational area.	

## Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Eight courses (38 units minimum) are required. A Writing II course also approved for general education may be applied toward the relevant general education foundational area.

Students who successfully complete a year-long GE cluster series fulfill the Writing II requirement and complete nearly 50 percent of their general education requirements. Students who do not complete the year-long GE cluster series must meet with a counselor in the Office of Student Services and Enrollment Management to determine applicable GE credit.

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

### Foundations of the Arts and Humanities

Three 5-unit courses, one from each subgroup. Courses required to satisfy the major or other courses taken in the major field may be used to satisfy this GE requirement:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. The courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

### Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected

and analyzed, and how new understandings of social phenomena are achieved and evaluated.

### Foundations of Scientific Inquiry

Two courses from either subgroup. If both courses are selected from the same subgroup, they must be from different departments:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, consult with an academic counselor or see the [master list](#).

### Reciprocity with Other UC Campuses

Students who transfer to UCLA from other UC campuses and have met all GE requirements prior to enrolling at UCLA are not required to complete the Herb Alpert School of Music GE requirements. Written verification from the dean at the other UC campus is required. Verification letters should be sent to UCLA Herb Alpert School of Music, [Office of Student Affairs](#), Box 957234, Los Angeles, CA 90095-7234.

### Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE or transfer core courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all UCLA GE requirements are fulfilled when students complete the IGETC courses. Students who select the IGETC

must complete it entirely before enrolling at UCLA. Otherwise, they must fulfill the Herb Alpert School of Music GE requirements.

## Department Requirements

Departments generally set two types of requirements that must be satisfied for award of a degree: preparation for the major (lower-division courses) and the major (upper-division courses). Preparation for the major courses should be completed before beginning upper-division work.

### Preparation for the Major

A major requires completion of a set of courses known as preparation for the major. Each department sets its own preparation for the major requirements; see [Curricula and Courses](#).

### The Major

A major is composed of at least 36 units.

Students must complete their major with a grade-point average of at least 2.0 (C) in all courses in order to remain in the major. Each course in the major department must be taken for a letter grade.

As changes in major requirements occur, students are expected to satisfy the new requirements insofar as possible. Hardship cases should be discussed with the department adviser, and petitions for adjustment should be submitted to the dean of the school when necessary.

### Minors and Double Majors

Students may petition for a minor and/or double major on an individual basis. Students should contact the [Office of Student Affairs](#) for an outline of criteria required for the petition.

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

Each term the study list must include from 12 to 20 units. The school has no provision for part-time enrollment. After

the first term, students may petition to carry more than 20 units if they have an overall grade-point average of 3.0 (B) or better and have attained at least a 3.0 (B) average in the preceding two terms with all courses passed. Students should contact the [Office of Student Affairs](#) no later than the end of the second week of instruction to petition for more than 20 units.

## Minimum Progress

Students are expected to complete satisfactorily at least 40 units during any three consecutive terms in residence; they are placed on probation if they fail to pass these units. Students are subject to disqualification if they fail to pass at least 32 units in three consecutive regular terms in residence.

## Changing a Major

Students in good academic standing who wish to change their major may petition to do so, provided they can complete the new major within the 216-unit limit and normal time to degree (12 terms for students who entered as freshmen; six terms for students who entered as transfers). Petitions must be submitted to and approved by the department or committee in charge of the new major. Admission to certain majors may be closed or restricted; changes are normally not permitted if students are on probation or have begun their last term.

## Concurrent Enrollment

Enrollment at a non-UC institution or at UCLA Extension while enrolled at UCLA is not permitted.

## Credit Limitations

The following credit limitations apply to all undergraduate students enrolled in the school:

### Advanced Placement Examinations

Credit earned through the College Board Advanced Placement (AP) Examinations may be applied toward certain UC/school requirements. Consult with a counselor in the [Office of Student Affairs](#) to determine applicable credit. Portions of AP Examination credit may be evaluated by corresponding UCLA course numbers (e.g., French 4). If students take the equivalent UCLA course, unit credit for such duplication is deducted before graduation. See the school [AP table](#) for UCLA course equivalents.

### Graduate Courses

Undergraduate students who wish to take courses numbered in the 200 series for credit toward a specific degree requirement must petition for advance approval of the

department chair and dean of the school, and must meet specific qualifications. Courses numbered in the 400 and 500 series may not be applied toward the degree.

## Counseling Services

The school offers advising, program planning in the major and general education requirements, and individual meetings with school and departmental counselors. For counseling information, contact the [Office of Student Affairs](#), 1642 Schoenberg Music Building, 310-825-4761.

## Honors

Undergraduate students who achieve scholastic distinction may qualify for the following honors and programs:

### Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.948 grade-point average (GPA), with at least 12 letter-graded units. The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete or a Not Passed (NP) grade, change a grade, or repeat a course. Dean's Honors are automatically recorded on the transcript for the appropriate term.

### Latin Honors

Latin Honors are awarded at graduation to students with superior grade-point averages. To be eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained an overall grade-point average (GPA) at graduation that places them in the top 20 percent of the school (GPA of 3.948 or better) for *cum laude*, the top 10 percent (GPA of 3.988 or better) for *magna cum laude*, or the top five percent (GPA of 3.994 or better) for *summa cum laude*. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year determine student eligibility. Students should contact the [Office of Student Affairs](#) or see the Registrar's [honors](#) web page for the most current Latin honors calculations.

## Graduate Study

The advanced degree programs offer graduate students unique research opportunities when combined with special resources, such as Young Research Library, Music Library special collections, and UCLA performance halls.



Fellowships, grants, and assistantships are available through the departments and the dean of the Division of Graduate Education.

## Admission

In addition to requiring that applicants hold a bachelor's degree from an accredited U.S. institution or an equivalent degree of professional title from an international institution, each department in the school has limitations and additional requirements. In general, samples of creative work (auditions, portfolios, computer programs, etc.) are required. Detailed information is available on individual department websites and on [program requirements for UCLA graduate degrees](#).

For information on proficiency in English requirements for international graduate students, see [Graduate Admission](#) in Graduate Study.

## Degree Requirements

Requirements to fulfill each degree objective vary according to the degree and the department. For complete degree requirements, see [program requirements for UCLA graduate degrees](#).

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# John E. Anderson Graduate School of Management

Antonio E. Bernardo, PhD, *Dean*

[Anderson Graduate School of Management](#)

G415 Marion Anderson Hall  
310-825-7982

In today's rapidly changing global marketplace, it is essential that professional managers be conversant with the latest concepts and principles of management. At the UCLA John E. Anderson Graduate School of Management, which is consistently ranked among the best such schools in the nation, students prepare to become first-rate managers with both specialized skills and broad understanding of the general economic, business, and managerial environment. This background enables them to become effective and efficient directors of organizations and people whether they are in the private, public, or not-for-profit sector.

Specifically, the Anderson Graduate School of Management offers the business community a wide range of higher education programs that furnish state-of-the-art information in a variety of fields. Through its faculty, the school advances the art and science of management by engaging in fundamental and cutting-edge research in all fields of manage-

ment, and by educating scholars who can continue to create this new knowledge.

Students come from diverse professional and educational backgrounds and seek equally diverse personal and professional goals. Whether they pursue the professional MBA or a PhD in Management, they graduate with a broad understanding of people and organizations and with a sound technical background in the economic and mathematical concepts of management planning and decision making.

The school offers a variety of programs leading to graduate degrees at the master's and doctorate levels. These include a professional Master of Business Administration (MBA), Master of Science (MS) in Business Analytics, and a Master of Financial Engineering (MFE); as well as three Master of Business Administration (MBA) programs for working professionals: the Fully Employed MBA program for mid-level and emerging senior leaders, and the 22-month Executive MBA program and the UCLA-NUS Global Executive MBA program in partnership with the National University of Singapore (NUS) Business School designed for senior-level managers and executives. A PhD in Management is also offered, as are certificate executive programs, research conferences, and seminars for experienced managers.

The school offers an undergraduate minor in Accounting. It also offers an interdisciplinary undergraduate minor in Entrepreneurship in conjunction with the College of Letters and Science, designed for students interested in new business ventures, business development, and entrepreneurial ideas; see the [Entrepreneurship minor](#) for details. Several undergraduate courses in management are also offered. Enrollment in these courses, although open to all UCLA students who have completed the requisites, is limited.

## Degrees and Programs

The Anderson Graduate School of Management offers the following degrees and undergraduate minors:

- Master of Business Administration
- Executive Master of Business Administration
- Fully Employed Master of Business Administration
- Global Executive Master of Business Administration for Asia Pacific GEMBA—dual degree program with National University of Singapore
- Business Analytics MS
- Management MS, CPhil, PhD
- Master of Financial Engineering

## Concurrent Degree Programs

- Master of Business Administration/Computer Science MS

Master of Business Administration/Doctor of Dental Surgery  
Master of Business Administration/Doctor of Medicine  
Master of Business Administration/Juris Doctor  
Master of Business Administration/Latin American Studies MA  
Master of Business Administration/Master of Library and Information Science  
Master of Business Administration/Master of Science in Nursing  
Master of Business Administration/Master of Public Health  
Master of Business Administration/Master of Public Policy  
Master of Business Administration/Master of Urban and Regional Planning

## Undergraduate Minors

Accounting  
Entrepreneurship

## Executive Education

Founded in 1954, UCLA [Anderson Executive Education](#) offers innovative learning solutions that focus on leadership, management, and strategy to meet the unique business objectives of individual executives and leading organizations worldwide. A wide array of custom and open-enrollment programs are offered annually to leaders of today across all delivery platforms including in-person, live-online, and blended formats.

## Research Centers

Eight interdisciplinary research centers supply valuable resources that support school programs: [Center for Global Management](#) (CGM); [Center for Management of Enterprise in Media, Entertainment, and Sports](#) (MEMES); [Easton Technology Management Center](#); [Harold and Pauline Price Center for Entrepreneurship and Innovation](#); [Laurence and Lori Fink Center for Finance](#); [Morrison Center for Marketing and Data Analytics](#); [UCLA Anderson Forecast](#); and [Ziman Center for Real Estate](#).

## Outreach Programs

A wide range of [outreach programs](#)—such as the Entrepreneurship Bootcamp for Veterans with Disabilities; Leaders in Sustainability Certificate Program; Management Development for Entrepreneurs (MDE); Impact@Anderson; Office of Equity, Diversity, and Inclusion; and Riordan Programs—

offer many teaching, research, and service resources to UCLA, Los Angeles, and beyond.

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# Jonathan and Karin Fielding School of Public Health

Ronald S. Brookmeyer, PhD, *Dean*

[Fielding School of Public Health](#)

16-035 Center for Health Sciences

310-825-5524

[Student Services e-mail](#)

The UCLA Jonathan and Karin Fielding School of Public Health is home to one of the brightest and most diverse public health student bodies in the U.S., with over 800 students hailing from 27 countries. The Fielding School of Public Health has five academic departments—Biostatistics, Community Health Sciences, Environmental Health Sciences, Epidemiology, and Health Policy and Management—and offers the Bachelor of Arts, Bachelor of Science, Doctor of Philosophy, Master of Data Science in Health, Master of Healthcare Administration, Master of Public Health, and Master of Science degrees. Additionally, concurrent and articulated degree programs and certificates enable students to gain specialized knowledge in areas such as global health, population and reproductive health, environmental health, and health care management and leadership. Students also have access to a wide range of local and global hands-on training opportunities that provide the skills needed to move public health evidence to action. The mission of the Fielding School of Public Health is to enhance the public's health by training future leaders and health professionals from diverse backgrounds, conducting innovative research, translating research into policy and practice, and serving local communities and those of the nation and the world.

The Fielding School of Public Health is among the top ten public health schools in the country, and offers superior public health training and real-world experience. School classrooms and laboratories are located in the Center for Health Sciences (CHS) shared with the Geffen School of Medicine, School of Dentistry, and School of Nursing, and just steps away from its science facilities and schools of engineering, law, management, and public affairs.

Los Angeles is a unique setting to address public health challenges confronting the global community. Los Angeles County has the largest population of any county in the U.S., and is one of the most populous metropolitan areas in the world. Its nearly 10 million residents represent more than 140 cultures and speak an estimated 224 languages.

Students at the Fielding School of Public Health learn from and collaborate with around 200 faculty members who are renowned leaders, experts and innovators in our community and at the state, national, and international level. The faculty not only teach tomorrow's public health practitioners and educators, but they create new knowledge in the field, contribute their expertise to legislators and public health leaders, prevent disease, and create programs that save millions of lives worldwide.

## Departments

The school offers graduate programs leading to both academic and professional degrees in five departments. The Department of Biostatistics develops statistical and analytical techniques for public health use. The Department of Community Health Sciences addresses behaviors that prevent disease and enhance health; health problems of high-risk groups (women, children, the aged, the poor, the disadvantaged, and racial and ethnic minorities); health education and promotion; public health policy; community nutrition; and international health. The Department of Environmental Health Sciences elucidates health hazards in the general environment and in the workplace. The Department of Epidemiology is concerned with the nature, extent, and distribution of disease and health in populations. The Department of Health Policy and Management deals with the organization, financing, delivery, quality, and distribution of health care services. The school also administers an interdepartmental degree program in molecular toxicology. See [Curricula and Courses](#) for more information on each department.

## Degrees and Programs

The Fielding School of Public Health offers the following degrees and undergraduate minor:

- Biostatistics MPH, MS, PhD
- Community Health Sciences MPH, MS, PhD
- Environmental Health Sciences MPH, MS, PhD
- Epidemiology MPH, MS, PhD
- Executive Master of Public Health
- Health Management MPH
- Health Policy MPH
- Health Policy and Management MS, PhD
- Master of Data Science in Health
- Master of Healthcare Administration
- Master of Public Health
- Master of Public Health for Health Professionals
- Molecular Toxicology PhD

Public Health BA, BS

## Articulated Degree Programs

- Master of Public Health/Doctor of Medicine
- Master of Public Health/Latin American Studies MA

## Concurrent Degree Programs

- Community Health Sciences MPH/Master of Urban and Regional Planning
- Environmental Health Sciences MPH/Master of Urban and Regional Planning
- Master of Public Health/African Studies MA
- Master of Public Health/Asian American Studies MA
- Master of Public Health/Juris Doctor
- Master of Public Health/Master of Business Administration
- Master of Public Health/Master of Public Policy
- Master of Public Health/Master of Social Welfare

## Undergraduate Minor

Public Health

## Undergraduate Admission

### Admission as a Freshman

Freshmen are admitted with a declared pre-major in the College of Letters and Science. See [Undergraduate Majors](#) under Public Health in Curricula and Courses for information on applying to the major.

### Admission as a Junior

Transfer students are admitted directly to the Fielding School of Public Health.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and major requirements for the Bachelor of Arts or Bachelor of Science degree.

## University Requirements

The University of California has two requirements that undergraduate students must satisfy to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. Students who do not satisfy the Entry-Level Writing requirement prior to enrollment must pass an approved course or other program prescribed

by their UC campus of residence. Only after satisfying the Entry-Level Writing requirement can they take an English composition course for transfer credit after enrolling at UCLA. See [Degree Requirements](#) in Undergraduate Study for details.

## School Requirements

There are seven requirements that must be satisfied for award of a degree.

### Unit Requirement

Students must satisfactorily complete for credit a minimum of 180 units for the bachelor's degree. At least 60 of the 180 units must be upper-division courses numbered 100 through 199. A maximum of 216 units is permitted. Advanced Placement Examination and International Baccalaureate Examination (transfer) credits are not counted toward the unit maximum.

### Scholarship Requirement

Students must earn at least a 2.0 (C) grade-point average (GPA) in all courses undertaken at UCLA to receive a bachelor's degree. Students must earn a cumulative 2.0 GPA as well as a 2.0 GPA in preparation for the major and the major.

#### Degree Requirements

##### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

##### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Quantitative Reasoning
6. Diversity
7. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

##### Major Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or major requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

## Academic Residence Requirement

Thirty-five of the final 45 units completed for the bachelor's degree must be earned while in residence at the school.

Students enrolled in the Education Abroad Program (EAP) must satisfy the residence requirement by earning 35 of their final 90 units in residence at the school.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirement.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Writing II. Two courses in English composition are required for graduation. Both courses must be taken for letter grades, and students must receive a C or better grade in each (a C– grade is not acceptable).

### Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

Qualifying examination scores and courses are determined by the school Faculty Executive Committee.

### Writing II

The Writing II requirement must be satisfied within seven terms of enrollment by completing one course from a faculty-approved list of [Writing II courses](#); see the Registrar's [Writing II requirement](#) web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses may also fulfill preparation for the major requirements and, if approved for general education (GE) credit, may also fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I, Writing II, and reciprocity requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

## Quantitative Reasoning Requirement

The quantitative reasoning requirement may be satisfied by completing one approved UCLA course (see list below) or an equivalent course within the first seven terms of enrollment. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable).

The requirement may also be satisfied by achieving an SAT Reasoning Test Mathematics Section score of 600 or better for exams taken January 2016 or earlier, or achieving an SAT Mathematics section score of 620 or better for exams taken March 2016 or later, or an SAT Subject Test in Mathematics score of 550 or better, or an ACT Mathematics Test score of 26 or better. Approved UCLA courses and examinations, and qualifying scores, are determined by the school Faculty Executive Committee.

Applicable courses may also fulfill preparation for the major requirements and, if approved for general education (GE) credit, may fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the quantitative reasoning and reciprocity requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level quantitative reasoning course that Undergraduate Admission accepts as equivalent to those approved by the school Faculty Executive Committee. Approved courses include

- Biostatistics 100A, 100B
- Life Sciences 20, 30A, 30B, 40
- Mathematics 3A, 31A, 31AL
- Philosophy 31
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C
- Public Affairs 60
- Statistics 10, 12, 13

## Diversity Requirement

The **diversity requirement** may be satisfied by completing one course from the faculty-approved list of courses. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable). Applicable courses may also fulfill major, minor, or elective requirements, and if approved for general education (GE) credit, may fulfill a GE requirement. A list of approved courses is available in the [Schedule of Classes](#).

## General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

Applicable courses may also fulfill major, minor, or elective requirements and, if approved for diversity or writing, may fulfill the diversity requirement and/or Writing II requirement.

<b>General Education Requirements</b>	
<b>Foundations of the Arts and Humanities</b>	
Literary and Cultural Analysis . . . . .	1 course
Philosophical and Linguistic Analysis . . . . .	1 course
Visual and Performance Arts Analysis and Practice . . . . .	1 course
Total = 15 units minimum	
<b>Foundations of Society and Culture</b>	
Historical Analysis . . . . .	1 course
Social Analysis . . . . .	1 course
Third course from either subgroup . . . . .	1 course
Total = 15 units minimum	
<b>Foundations of Scientific Inquiry</b>	
Life Sciences . . . . .	2 courses
Physical Sciences . . . . .	2 courses
One of the four courses must be 5 units and carry laboratory credit. Other courses in the subgroups may be 4 units.	
Total = 17 units minimum	
<b>Total GE . . . . . 10 courses/47 units minimum</b>	



## Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Ten courses (47 units minimum) are required. GE-approved Writing II courses may fulfill an appropriate foundational area. See the foundational area descriptions below for a breakdown of courses required.

Students who successfully complete a year-long GE cluster series fulfill the Writing II requirement, complete 40 percent of their general education requirements, and receive laboratory/demonstration credit where appropriate.

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

### Foundations of the Arts and Humanities

Three 5-unit courses, one from each subgroup:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. Courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities, and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

### Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated.

## Foundations of Scientific Inquiry

Four courses, two from each subgroup. One 5-unit course from either subgroup must include laboratory credit. Other courses in the subgroups may be 4 units:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, contact an academic adviser or see the [master list](#).

## Reciprocity with Other UC Campuses

Students who transfer to UCLA from other UC campuses and have met all GE requirements prior to enrolling at UCLA are not required to complete the school GE requirements. Written verification from the dean at the other UC campus is required. Consult with a school adviser regarding eligibility for this option.

## Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE or transfer core courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all GE requirements are fulfilled when students complete the IGETC courses.

## Major Requirements

Two types of requirements must be satisfied for the award of a degree: preparation for the major (lower-division courses) and the major (upper-division courses).

### Preparation for the Major

Admission to the majors requires an application with documented progress toward completing preparation for the major requirements. Students may elect to declare a Public Health pre-major in preparation for an application for admission to the program. See [Undergraduate Majors](#) under Public Health in Curricula and Courses for details.

### The Major

Major in the school consist of a group of coordinated upper-division courses of at least 40 units, but no more than 72 units.

### Double Majors

Double majors in the Fielding School and other academic units are not permitted.

### Minors

Students admitted to the Public Health majors may petition to add a minor provided they can complete the requirements within 216 units.

See [Undergraduate Minors and Specializations](#) in Majors and Degrees; descriptions are in [Curricula and Courses](#).

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

The study list is a record of classes that a student is taking for a particular term. Each term the study list must include from 15 to 20 units. The school has no provision for part-time enrollment. After the first term, students may petition to enroll in more than 20 units (up to 30 units maximum) if they have an overall grade-point average of 3.0 (B) or better and have attained at least a 3.0 (B) grade-point average in the preceding term with all courses passed. Excess units

petitions must be filed and approved by the Undergraduate Student Services Office no later than the end of the third week of instruction.

### Minimum Progress

Students are expected to complete satisfactorily at least 36 units in any three consecutive terms while in residence; they are placed on probation if they fail to pass these units. They are subject to dismissal if they fail to pass at least 32 units in three consecutive regular terms while in residence.

### Changing a Major

Admitted Public Health majors may petition to change from the BA to the BS (or BS to BA). Petitions must be submitted to the Undergraduate Student Services Office for consideration. Public Health majors in good academic standing who wish to change to a major outside the school must consult with the department or committee in charge of the desired major. Admission to certain majors may be closed or restricted. Changes are not normally permitted if students are not in good academic standing or have begun their last term.

Students who fail to attain a grade-point average of 2.0 (C) in preparation for the major or major courses may be denied the privilege of entering or continuing in that major.

### Re-entering Students and Their Majors

Students returning to UCLA to resume their studies after an absence must consult with an academic adviser for assistance.

### Concurrent Enrollment

Enrollment at a non-UC institution or UCLA Extension while enrolled at UCLA is not permitted except in extraordinary circumstances. No credit is given for courses taken concurrently elsewhere without the approval of the school.

### Credit Limitations

The following credit limitations apply to all undergraduate students. In many cases, units are not deducted until the final term before graduation. Students with questions should consult with an academic adviser.

Transfer students with credit from other institutions (advanced standing credit) receive a Degree Audit from Undergraduate Admission indicating the transferable units from former institutions; however, the following credit limitations may reduce the total number of transferred units that apply toward the degree in the school. Consult with an adviser about these limitations.

## Community College/Lower Division Transfer Limitation

After completing 105 quarter units toward the degree, students are allowed no further unit credit for courses completed at a community college.

## Physical Education

No more than 4 units in physical education activities courses may be applied toward the bachelor's degree.

## Upper-Division Tutorials

No more than 8 units of credit may be taken per term in upper-division tutorials numbered 195 through 199, and a maximum of 32 units may be applied toward the degree. All courses numbered 199 must be taken for a letter grade.

## Graduate Courses

Undergraduate students who wish to take courses numbered in the 200 series for credit toward a specific degree requirement must petition for advance approval of the program chair. Courses numbered in the 300, 400, and 500 series are not open for credit to undergraduate students.

## Academic Advising Services

The Fielding School of Public Health offers advising, program planning in the major and general education requirements, and individual meetings with school advisers. For advising information, contact the Undergraduate Student Services Office.

## Honors

School undergraduate students who achieve scholastic distinction may qualify for the following honors and programs.

### School Honors

The highest academic recognition the Fielding School confers on its undergraduate students is School Honors, which is awarded to graduating seniors who successfully complete the School Honors program. Students are awarded School Honors or School Highest Honors at graduation.

### Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.915 grade-point average (GPA), with at least 12 letter-graded units. The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete or a Not Passed (NP) grade, change a grade, or repeat a course. Dean's Honors

are automatically recorded on the transcript for the appropriate term.

## Latin Honors

Students who have achieved scholastic distinction may be awarded the bachelor's degree with Latin honors. To be eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained an overall grade-point average (GPA) at graduation that places them in the top 20 percent of school graduates (GPA of 3.915 or better) for *cum laude*, the top 10 percent (GPA of 3.965 or better) for *magna cum laude*, or the top five percent (GPA of 3.985 or better) for *summa cum laude*. Coursework taken on the Education Abroad Program is applied toward Latin honors at graduation. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year (fall, winter, spring, summer) determine student eligibility. Students should consult their Degree Audits, or the Registrar's [honors](#) web page, for the most current Latin honors calculations.

## Graduate Study

### Admission

The admissions criteria established by the university requires that an applicant hold a bachelor's degree from a regionally accredited institution, comparable in standard and content to a bachelor's degree from the University of California, with an overall scholastic average of B (3.0 on a 4.0 scale) or better—or its equivalent if the letter grade system is not used.

An international student whose post-secondary education is completed outside of the U.S. is expected to hold a degree with above-average scholarship from a university or university-level institution.

Applicants must submit their application to both the centralized [Schools of Public Health Application Service](#) (SOPHAS) and UCLA Division of Graduate Education. For additional admission requirements, see the [school application](#) web page.

### Degree Requirements

Specific degree requirements vary according to the department and program. Refer to [program requirements for UCLA graduate degrees](#).

### Research Centers

The field of public health addresses a wide range of issues, making it a natural for interdisciplinary collaboration. UCLA faculty members and students reach beyond traditional

academic boundaries to promote cooperative exchange across disciplines. The following interdisciplinary centers are sponsored by or associated with the Fielding School of Public Health.

## Biobehavioral Assessment and Research Center

The **Biobehavioral Assessment and Research Center** (BARC) promotes research on high impact science that the National Institute of Health (NIH) has identified as high-priority areas of public health research. With a team of multidisciplinary investigators, BARC utilizes and develops innovative biobehavioral and technological approaches that integrate behavioral measures/markers into intervention studies, prevention trials, and clinical science. BARC also supports incorporation of clinical and basic biomarkers into behavioral research and prevention science.

## Bixby Center on Population and Reproductive Health

The **Bixby Center on Population and Reproductive Health** was established in 2001 at the Fielding School as the result of a generous gift from the Fred H. Bixby Foundation, and has grown since then with the support from additional Bixby Foundation gifts. The center promotes and supports research, training, and applied public health in the areas of population, reproductive health, and family planning. The principal focus is on reproductive health issues in developing countries, where population growth rates remain high and reproductive health services are poor or inaccessible. The center also works in reproductive health-related issues in the U.S.

## Center for Cancer Prevention and Control Research

The **Center for Cancer Prevention and Control Research** is a joint program of the Fielding School and the Geffen School of Medicine's Jonsson Comprehensive Cancer Center. Since its inception in 1976, the center has been recognized in Los Angeles community, nationally, and internationally. It conducts rigorous peer-reviewed research in three major program areas—the Healthy and At-Risk Populations Program, the Molecular Epidemiology Program, and the Patients and Survivors Program.

The **Healthy and At-Risk Populations Program** focuses on research in primary prevention and screening/early detection among healthy populations and persons at increased risk for developing cancer. Its research portfolio includes cancer epidemiology; gene-environment interaction; tobacco control; nutrition and exercise; and breast, cervix, prostate, and colon cancer screenings; as well as risk counseling and genetic testing of high-risk populations.

The Molecular Epidemiology Program focuses on primary prevention: examining environmental exposure (smoking, diet, infection, air pollution, etc.) and genetic susceptibility and cancer risk, as well as exploring gene-environment interactions in cancer risk; secondary prevention: evaluating biological markers (somatic mutations and hypermethylations of tumor suppressor genes and oncogenes, gene copy numbers, etc.) for early detection, as well as intermediate markers as surrogate end-points for chemoprevention; and tertiary prevention: assessing blood and tissue-based biological markers (tumor markers, single nucleotide polymorphisms, etc.) for cancer prognosis and survival prediction.

The **Patients and Survivors Program** has as its major goal the reduction in avoidable morbidity and mortality among adult and pediatric patients with cancer and long-term survivors of cancer.

## Center for Global and Immigrant Health

The last several years have seen major transformations in global public health, requiring major expansion and reconstruction of the international public health work force. Many emerging health problems require timely and sustained research efforts and require application of the best scientific knowledge and focused training and continuing education for the global public health work force.

The **UCLA Center for Global and Immigrant Health** was established in 2008. The center includes faculty from all of the departments in the Fielding School of Public Health as well as the schools of medicine, dentistry, and nursing, and the California Center for Population Research, all of whom have research or teaching interests in global and/or immigrant health. Participating faculty have active research collaborations in more than 50 countries throughout the world, and several work both with immigrant communities in California and in the countries of origin of these communities. The center offers a Certificate in Global Health available to students in any UCLA degree-granting graduate and professional program.

## Center for Health Advancement

The **UCLA Center for Health Advancement** supplies enhanced analysis and evidence-based information to help policymakers decide which policies and programs can best improve health and reduce health disparities. The center analyzes a wide range of timely health improvement opportunities, identifying those supported by strong evidence. It presents and disseminates the results of these analyses in plain language to those who make and influence public- and private-sector policies and programs, and offers training and technical assistance to facilitate implementation of recommended approaches.

The center brings together faculty from multiple departments of the Fielding School and other UCLA schools with a wide range of subject matter and methodological expertise, including expertise in nonhealth sectors such as education, transportation, housing, environmental protection, community planning, agriculture, public welfare, and economics. It has strong collaborations with government public health agencies, foundations, academic institutions, and other not-for-profit organizations. Within the health sector, its work is focused on how alternative investments to wasteful expenditures in health care can yield greater returns.

### Center for Health Policy Research

The [UCLA Center for Health Policy Research](#) is one of the nation's leading health policy research centers and the premier source of health policy information for California. It was established in 1994 to apply the expertise of UCLA faculty members and researchers to meet national, state, and local community needs for health-policy-related research and information, and to accomplish three missions: conduct research on national, state, and local health policy issues; offer public service to policymakers and community leaders; and offer educational opportunities for graduate students and postdoctoral fellows.

Sponsored by the Fielding School and the Luskin School of Public Affairs, the center offers a collaborative health policy research environment for the leading professional schools and academic departments of UCLA. One major project is the California Health Interview Survey (CHIS), one of the largest health surveys in the nation. The center also sponsors major public service programs supported by extramural grants.

### Center for Healthcare Management

The [Center for Healthcare Management](#) brings together academic researchers, students, seasoned executives, practitioners, and other health experts, as well as interdisciplinary academic health care management resources to advance health care management. The center is committed to accomplish its mission to unite, inspire, and enrich interdisciplinary leadership that progresses health care management by pulling together the best minds from UCLA and from the broader community to improve the current state of applied research, knowledge, and practice; jointly exploring critical issues in the management of health care organizations; providing an academic home for leaders in the field to contribute career experience and mentorship; producing research that influences management practices and seeks on-the-ground health care management expertise to inform research questions; and creating a library of health care management cases, generated internally and fielded from outside UCLA, as a repository for internal use and external licensing.

### Center for Healthier Children, Families, and Communities

The [Center for Healthier Children, Families, and Communities](#) (CHCFC) was established in 1995 to address some of the most challenging health and social problems facing children and families. The center's mission is to improve society's ability to provide children with the best opportunities for health and well-being, and the chance to assume productive roles within families and communities.

Through a unique interdisciplinary partnership—between UCLA departments including Psychology; schools including education, law, medicine, nursing, public affairs, and public health; and providers, community agencies, and affiliated institutions—a critical mass of expertise has been assembled. This allows CHCFC to conduct activities in five major areas: child health and social services; applied research; health and social service provider training; public policy research and analysis; and technical assistance and support to community providers, agencies, and policymakers.

### Center for Healthy Climate Solutions

The [UCLA Center for Healthy Climate Solutions](#) focuses on protecting people and communities from the effects of climate change. The center equips decision makers with solutions that reduce inequities and benefit their economy, environment, and health. With their partners, the center uses evidence-based best practices that improve health and resilience, now and for generations to come. Under the leadership of Dr. Jonathan Fielding and Professor Michael Jerrett, the C-Solutions team provides public health expertise to help communities put leading research and best practices to work. The center works with communities to implement solutions that provide health, economic, and environmental benefits. The center prioritizes those with highest need to help reduce health disparities and promote climate justice. C-Solutions works with local stakeholders, conduct in-depth interviews with policy leaders, and share their findings with partner communities. Through these methods, the center is fortifying its collective ability to adapt and respond to the dangers of climate change.

### Center for LGBTQ Advocacy Research and Health

The [UCLA Center for LGBTQ Advocacy, Research and Health](#), or C-LARAH (LARAH is derived from the Latin word *hilaris*, meaning cheerful), is dedicated to improving the health and well-being of sexual and gender minorities, and is committed to sharing expertise in public health, including epidemiological methods, developing and testing biobehavioral interventions, education and research training, program design and analysis, health policy initiatives and implementation science. The center works directly with



members of the lesbian, gay, bisexual, transgender, and queer (LGBTQ) community, and is able to draw upon expansive local and national relationships with state and local public health departments, academic researchers, health-care providers, community-based organizations, consumer groups, advocacy foundations, and funding agencies. Its familiarity and experience working with the LGBTQ community and allied organizations well-equips it to inform policymakers of the most effectual ways to reach members of this historically marginalized population and how to serve them holistically through all social determinants of health and justice.

## Center for Occupational and Environmental Health

The California State Legislature mandated that the **Center for Occupational and Environmental Health** (COEH) be formed in 1978, when a group of chemical workers became sterile from exposure to the pesticide DBCP, a known carcinogen and reproductive toxin. With branches in northern and southern California, COEH trains occupational and environmental health professionals and scientists, conducts research, and offers services through consultation, education, and outreach. The centers constitute the first state-supported institutions to develop new occupational and environmental health leadership in the U.S.

The UCLA COEH branch is housed in the Center for Health Sciences and involves the schools of Public Health, Medicine, and Nursing. Specific COEH programs within the Fielding School include environmental chemistry, occupational/environmental epidemiology, occupational/environmental medicine, occupational ergonomics, occupational hygiene, toxicology, gene-environment interactions, psychosocial factors in the work environment, occupational health education, and pollution prevention.

## Center for Public Health and Disasters

The **Center for Public Health and Disasters** was established in 1997 to address critical issues faced when a disaster impacts a community. The center promotes interdisciplinary efforts to reduce the health impacts of domestic, international, natural, and human-induced disasters. It facilitates dialog between public health and medicine, engineering, physical and social sciences, and emergency management. This unique philosophy is applied to the education and training of practitioners and researchers, collaborative interdisciplinary research, and service to the community. The multidisciplinary center staff and participating faculty members have backgrounds that include emergency medicine, environmental health sciences, epidemiology, gerontology, health services, social work, sociology, urban planning, and public health.

The center is one of 15 Academic Centers for Public Health Preparedness funded by the Centers for Disease Control and Prevention. The goal of these national centers is to improve competencies of front-line workers in public health to respond to public health threats.

## Center for the Study of Racism, Social Justice, and Health

The **Center for the Study of Racism, Social Justice, and Health** is a multidisciplinary, collaborative research center housed in the **Community Health Sciences Department** leading the nation in conducting rigorous, community-engaged research to identify, investigate, and explain how racism and other social inequalities may influence the health of diverse local, national, and global populations.

The center is distinguished from other disparities-related research units at UCLA by its primary focus on the health implications of racism for diverse populations. Public health is both an academic discipline and an applied one. Therefore, the center encourages the translation of research findings for use by public health professionals, community organizations, and policy makers in their ongoing health equity efforts. Many center affiliates are working to identify, investigate, and explain the specific mechanisms by which various forms of racism may produce local, national, or global health inequities. Others are advancing critical racial theories or building community partnerships to guide their anti-racism, health-equity work. The center supports a community of scholars engaged in cutting-edge research, scholarship, public health practice, and community engagement to tackle questions such as how racism affects the physical and mental health of diverse populations, what tools are available to improve the rigor with which researchers study racism and its relationship to health inequities, which intervention strategies most effectively address contribution of racism to specific health inequities, and what are effective ways to teach public health students about racism. Affiliates represent disciplines of public health, history, medicine, urban planning, sociology, and other areas.

## Southern California NIOSH Education and Research Center

The purposes of the Region IX **Southern California NIOSH Education and Research Center** are to educate professionals in the various disciplines of occupational health and safety; offer continuing education for professionals and others in occupational safety and health fields; proliferate occupational health and safety activity through outreach to regional institutions and organizations; foster research on issues important to occupational health and safety; be an occupational health and safety resource to organizations and agencies that need its expertise; facilitate marshaling of

community resources to address and solve occupational health and safety problems; respond through educational programs and research to the changing range of occupational safety and health problems; and educate nonacademic stakeholders including business, labor, and vulnerable worker populations.

The characteristics of the center are embodied in a coordinated, interdisciplinary set of professional education, continuing education, research, and outreach activities that have a positive impact on the regional and national occupational health and safety practice.

The center has five programs at UCLA, one at UC Irvine, and two centerwide programs. The UCLA programs are **Industrial Hygiene**, **Occupational and Environmental Health Nursing**, Center Administration and Planning, **Continuing Education**, and **Outreach**. UC Irvine hosts the **Occupational Medicine Program**.

## UCLA Kaiser Permanente Center for Health Equity

Academic studies and current events have converged to highlight the magnitude of potentially preventable health disparities among various population groups, and the urgency of addressing these disparities. The **UCLA Kaiser Permanente Center for Health Equity** identifies, investigates, and addresses these differences in health status and disease burden. A key feature of the center is its heavy focus on community-based intervention research to mitigate observed disparities.

The center aims to advance understanding of health disparities across the lifespan and to foster multidisciplinary research to improve the health of underserved communities. With focus on Los Angeles county, the center facilitates community and academic partnerships in research, trains new investigators in health disparities research, and assists community partners in implementing effective programs and advocating for effective policies to reduce disparities. The center also endeavors to erode the barriers preventing more effective collaboration with local health departments and other key community partners engaged in the practice of public health. It is a collaborative center without walls that includes associates from academia, government, foundations, and private/nonprofit organizations.

## World Policy Analysis Center

The **World Policy Analysis Center** aims to improve the quantity and quality of comparative data available to policymakers, citizens, civil society, and researchers around the world on policies affecting human health, development, well-being, and equity. To date, the research team has gathered detailed information on public policies in all UN member states—including labor laws, poverty reduction policies,

education policies, and constitutional rights—with the goals of increasing access to this data and translating research findings into policies and programs at the global, national, and local levels. The center is committed to enhancing global health and public policy research—and policy capacity—across universities, governments, and international organizations.

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# Meyer and Renee Luskin School of Public Affairs

Anastasia Loukaitou-Sideris, PhD, *Interim Dean*  
**Luskin School of Public Affairs**  
 3250 Public Affairs Building  
 310-206-8858

Founded in 1994, the UCLA Meyer and Renee Luskin School of Public Affairs incorporates best practices in scholarship, research, and teaching in the fields of policymaking, social work, and urban and regional planning. The unique intersection of these disciplines within one school allows for academic cross-collaboration, and a graduate and undergraduate education that values perspectives at both the macro- and micro-organizational levels. Graduates of the master's and doctorate degree programs are well prepared to take leadership roles and effect change as practitioners, researchers, and policymakers in public, private, and non-governmental sectors. The undergraduate major offers students a rigorous conceptual and empirical foundation that prioritizes capacity for action by students exhibiting high motivations for public service and social change. Faculty members are actively engaged in research that addresses pressing national and regional issues including immigration, drug policy, prison reform, health care financing, transportation and the environment, national security, economic development, and the aging U.S. and world population.

## Departments

The school comprises three academic departments—**Public Policy**, **Social Welfare**, and **Urban Planning**—and faculty members from such diverse disciplines as economics, geography, history, law, management, and political science. The school trains policy professionals, planners, and social workers for public, private, and nongovernment service; conducts research on significant regional, national, and international issues with a strong interdisciplinary and cross-cultural focus; and acts as a convener and catalyst for public dialog that engages people locally, nationally, and internationally.

## Degrees and Programs

The Luskin School of Public Affairs offers the following degrees and undergraduate minors:

- Master of Public Policy
- Master of Social Welfare
- Master of Urban and Regional Planning
- Public Affairs BA
- Social Welfare PhD
- Urban Planning PhD

## Concurrent Degree Programs

- Master of Public Policy/Doctor of Medicine
- Master of Public Policy/Juris Doctor
- Master of Public Policy/Master of Business Administration
- Master of Public Policy/Master of Public Health
- Master of Public Policy/Master of Social Welfare
- Master of Social Welfare /Asian American Studies MA
- Master of Social Welfare /Juris Doctor
- Master of Social Welfare /Master of Public Health
- Master of Urban and Regional Planning/Juris Doctor
- Master of Urban and Regional Planning/Latin American Studies MA
- Master of Urban and Regional Planning/Master of Architecture
- Master of Urban and Regional Planning/Master of Business Administration
- Master of Urban and Regional Planning/Master of Public Health

## Undergraduate Minors

- Gerontology
- Public Affairs
- Urban and Regional Studies

Obtain brochures about the school undergraduate programs from the department office, 3343 Public Affairs Building, or see [school minors](#).

The school also offers a wide array of undergraduate courses in public affairs. Enrollment in these courses is open to all undergraduate students during the second enrollment pass. Most classes are restricted to students pursuing the BA in Public Affairs during the first pass.

## Undergraduate Admission

### Admission as a Freshman

Freshmen are admitted with a declared pre-major in the College of Letters and Science. See [Public Affairs BA](#) in Curriculum and Courses for information on applying to the major.

### Admission as a Junior

Transfer students are admitted directly to the Luskin School of Public Affairs.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and major requirements for the Bachelor of Arts degree.

## University Requirements

The University of California has two requirements that undergraduate students must satisfy to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. Students who do not satisfy the Entry-Level Writing requirement prior to enrollment must pass an approved course or other program prescribed by their UC campus of residence. Only after satisfying the Entry-Level Writing requirement can they take an English composition course for transfer credit after enrolling at UCLA. See [Degree Requirements](#) in Undergraduate Study for details.

## School Requirements

There are eight requirements that must be satisfied for the award of the degree.

## Unit Requirement

Students must satisfactorily complete for credit a minimum of 180 units for the bachelor's degree. At least 60 of the 180 units must be upper-division courses numbered 100 through 199. A maximum of 216 units is permitted. Students with Advanced Placement Examination or International Baccalaureate Examination (transfer) credit may exceed the unit maximum by the amount of that credit.

After 216 quarter units, enrollment may not normally be continued in the school without special permission from the dean.

## Degree Requirements

### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Quantitative Reasoning
6. Foreign Language
7. Diversity
8. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

### Major Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or major requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

## Scholarship Requirement

Students must earn at least a 2.0 (C) grade-point average (GPA) in all courses undertaken at UCLA to receive a bachelor's degree.

Students must also earn a 2.0 GPA in the major and satisfy both the course and scholarship requirements for the major, including preparation for the major.

## Academic Residence Requirement

Students are in residence while enrolled and attending classes at UCLA with a declared major in the Luskin School of Public Affairs. Of the last 45 units completed for the bachelor's degree, 35 units must be earned while in residence at the school. A minimum of 24 upper-division units must be completed in the major while in residence at the school.

Students enrolled in the Education Abroad Program (EAP) must satisfy the residence requirement by earning 35 of their final 90 units, including the final 12 units, in residence at the school.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirement.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Writing II. Two courses in English composition are required for graduation. Both courses must be taken for letter grades, and students must receive a C or better grade in each (a C– grade is not acceptable).

## Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

Qualifying examination scores and courses are determined by the school Faculty Executive Committee.

## Writing II

The Writing II requirement must be satisfied within seven terms of enrollment by completing one course from a faculty-approved list of **Writing II courses**; see the Registrar's **Writing II requirement** web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses may also fulfill preparation for the major requirements and, if approved for general education (GE) credit, may also fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I, Writing II, and reciprocity requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

## Quantitative Reasoning Requirement

The quantitative reasoning requirement may be satisfied by completing one approved UCLA course (see list below) or

an equivalent course within the first seven terms of enrollment. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable).

The requirement may also be satisfied by achieving an SAT Reasoning Test Mathematics Section score of 600 or better for exams taken January 2016 or earlier, or achieving an SAT Mathematics section score of 620 or better for exams taken March 2016 or later, or an SAT Subject Test in Mathematics score of 550 or better, or an ACT Mathematics Test score of 26 or better. Approved UCLA courses and examinations, and qualifying scores, are determined by the school Faculty Executive Committee.

Applicable courses may also fulfill preparation for the major requirements and, if approved for general education (GE) credit, may fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the quantitative reasoning and reciprocity requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level quantitative reasoning course that Undergraduate Admission accepts as equivalent to those approved by the school Faculty Executive Committee. Approved courses include

- Biostatistics 100A, 100B
- Life Sciences 20, 30A, 30B, 40
- Mathematics 3A, 31A, 31AL
- Philosophy 31
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C
- Public Affairs 60
- Statistics 10, 12, 13

## Foreign Language Requirement

The foreign language requirement may be satisfied by one of the following methods: scoring 3, 4, or 5 on the College Board Advanced Placement (AP) foreign language examination in Chinese, French, German, Italian, Japanese, or Spanish, or scoring 4 or 5 in Latin; presenting a UCLA foreign language departmental examination score indicating competency through level three; or completing a college-level foreign language course equivalent to level three or above at UCLA with a C or Passed or better grade.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the foreign language and reciprocity requirements.

Courses that may be used to fulfill this requirement are published on the Registrar's [foreign language requirement](#) web page.

## Diversity Requirement

The [diversity requirement](#) may be satisfied by completing one course from the faculty-approved list of courses. Courses used to satisfy the diversity requirement are approved by the school Faculty Executive Committee. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable). Applicable courses may also fulfill major, minor, or elective requirements and, if approved for general education (GE) credit, may fulfill a GE requirement. A list of approved courses is available in the [Schedule of Classes](#).

## General Education Requirements

[General education](#) (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

Applicable courses may also fulfill major, minor, or elective requirements and, if approved for diversity or writing, may fulfill the diversity requirement and/or Writing II requirement.

## Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

/ten courses (47 units minimum) are required. GE-approved Writing II courses may fulfill an appropriate foundational area. See the foundational area descriptions below for a breakdown of courses required.

Students who successfully complete a year-long GE cluster series fulfill the Writing II requirement, complete 40 percent of their general education requirements, and receive laboratory/demonstration credit where appropriate.



### General Education Requirements

#### Foundations of the Arts and Humanities

Literary and Cultural Analysis . . . . . 1 course  
 Philosophical and Linguistic Analysis . . . . . 1 course  
 Visual and Performance Arts Analysis and  
 Practice . . . . . 1 course  
 Total = 15 units minimum

#### Foundations of Society and Culture

Historical Analysis . . . . . 1 course  
 Social Analysis . . . . . 1 course  
 Third course from either subgroup . . . . . 1 course  
 Total = 15 units minimum

#### Foundations of Scientific Inquiry

Life Sciences . . . . . 2 courses  
 Physical Sciences . . . . . 2 courses  
 One of the four courses must be 5 units and carry laboratory credit. Other courses in the subgroups may be 4 units.  
 Total = 17 units minimum

**Total GE . . . . . 10 courses/47 units minimum**

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

#### Foundations of the Arts and Humanities

Three 5-unit courses, one from each subgroup:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. Courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities, and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

#### Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of

political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated.

#### Foundations of Scientific Inquiry

Four courses, two from each subgroup. One 5-unit course from either subgroup must include laboratory credit. Other courses in the subgroups may be 4 units:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

#### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, contact an academic adviser or see the [master list](#).

#### Reciprocity with Other UC Campuses

Students who transfer to UCLA from other UC campuses and have met all GE requirements prior to enrolling at UCLA are not required to complete the school GE requirements. Written verification from the dean at the other UC campus is required. Consult with a school counselor regarding eligibility for this option.

#### Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE or transfer core courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all GE requirements are fulfilled when students complete the IGETC courses.

## Major Requirements

Two types of requirements must be satisfied for the award of a degree: preparation for the major (lower-division courses) and the major (upper-division courses). Departments set requirements for minors.

### Preparation for the Major

Admission to the major requires completion of a set of courses known as preparation for the major. Applicants are admitted to pre-major status until requisite courses are satisfactorily completed. See the [Public Affairs BA](#) in Curricula and Courses.

### The Major

A major consists of a group of coordinated upper-division courses and shall be designated as schoolwide, departmental, interdepartmental, or individual. Each course applied toward the major and preparation for the major must be taken for a letter grade unless otherwise stipulated.

A major consists of a minimum of 40 upper-division units.

Students must complete their major with a scholarship grade-point average of at least 2.0 (C) in all courses in order to remain in the major.

As changes in major requirements occur, students are expected to satisfy the new requirements insofar as possible. Petitions for adjustment should be submitted to the dean of the school in hardship cases.

See the [Public Affairs BA](#) in Curricula and Courses for more details.

### Minors

Students may petition for a minor offered by the school or one offered outside the school, provided they can complete the requirements within 216 units and are on track to graduate on time.

As changes in minor requirements occur, students are expected to satisfy the new requirements insofar as possible unless they have completed 50 percent of the required coursework for the minor at the time the new requirements go into effect. Petitions for adjustment should be submitted to the undergraduate program chair for a departmental minor and to the dean for a schoolwide minor.

For a list of minors and specializations, see [Undergraduate Minors and Specializations](#); descriptions are in [Curricula and Courses](#).

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

The study list is a record of classes that a student is taking during a particular term. Each term, the study list must include from 12 to 19 units. After the first term, students may petition to enroll in more than 19 units if they have an overall grade-point average of 3.0 (B) and attained at least a 3.0 (B) grade-point average the preceding term with all courses passed.

First-term transfer students from any other UC campus may carry excess units on the same basis as students who have completed one or more terms at UCLA; however, they are not encouraged to do so.

### Minimum Progress

Students are expected to complete satisfactorily at least 36 units in any three consecutive terms while in residence; they are placed on probation if they fail to pass these units. They are subject to dismissal if they fail to pass at least 32 units in three consecutive regular terms while in residence.

### Changing a Major

Students in good academic standing who wish to change their major may petition to do so provided they can complete the new major within the 216-unit limit and are on track to graduate on time. Petitions must be submitted to and approved by the department or committee in charge of the new major. Admission to certain majors may be closed or restricted; changes are normally not permitted if students are on probation or have begun their last term.

Students who fail to attain a grade-point average of 2.0 (C) in preparation for the major or major courses may be denied the privilege of entering or continuing in that major.

### Re-entering Students and Their Majors

Students returning to UCLA to resume their studies after an absence of several years may find their previous major area of study is no longer available. They must select a current

major in which to complete their studies. Consult with an academic adviser for assistance.

## Concurrent Enrollment

Enrollment at a non-UC institution or UCLA Extension while enrolled at UCLA is not permitted except in extraordinary circumstances. No credit is given for courses taken concurrently elsewhere without the approval of the school.

## Credit Limitations

The following credit limitations apply to all undergraduate students. In many cases, units are not deducted until the final term before graduation. Students with questions should consult with an academic adviser.

Transfer students with credit from other institutions (advanced standing credit) receive a Degree Audit from Undergraduate Admission indicating the transferable units from former institutions; however, the following credit limitations may reduce the total number of transferred units that apply toward the degree in the school. Consult with an adviser about these limitations.

## Upper-Division Tutorials

No more than 8 units of credit may be taken per term in upper-division tutorials numbered 195 through 199. The total number of units allowed in such courses for a letter grade is 32; see the specific restrictions of each department.

## Graduate Courses

Undergraduate students who wish to take courses numbered in the 200 series for credit toward a specific degree requirement must petition for advance approval of the department chair and the dean of the school. Courses numbered in the 300, 400, and 500 series may not be applied toward the degree.

## Academic Counseling Services

The Luskin School of Public Affairs offers advising, program planning in the major and general education requirements, and individual meetings with school and departmental counselors. For counseling information, contact the Undergraduate Program Student Services Office, 3343 Public Affairs Building.

## Honors

Undergraduate students who achieve scholastic distinction may qualify for the following honors and programs:

## Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.938 grade-point average (GPA), with at least 12 letter-graded units. The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete or a Not Passed (NP). Dean's Honors are automatically recorded on the transcript for the appropriate term.

## Latin Honors

Students who have achieved scholastic distinction may be awarded the bachelor's degree with Latin honors. To be eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained an overall grade-point average at graduation that places them in the top 20 percent of the school graduates (GPA of 3.938 or better) for *cum laude*, the top 10 percent (GPA of 3.974 or better) for *magna cum laude*, or the top five percent (GPA of 3.993 or better) for *summa cum laude*. Coursework taken on the Education Abroad Program is applied toward Latin honors at graduation. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year (fall, winter, spring, summer) determine student eligibility. Students should consult their Degree Audits, or the Registrar's [Latin honors](#) web page for the most current Latin honors calculations.

## Graduate Study

### Admission

In addition to requiring that applicants hold a bachelor's degree from an accredited U.S. institution or an equivalent degree or professional title from an international institution, each department in the school has limitations and additional requirements. Individuals interested in concurrent degrees must be admitted to both programs. Detailed information can be found in [program requirements for UCLA graduate degrees](#).

For information on proficiency in English requirements for international graduate students, see [Graduate Admission](#) in Graduate Study.

### Degree Requirements

Requirements to fulfill each degree objective vary according to the degree and the department. For complete degree requirements, see [program requirements for UCLA graduate degrees](#).

## Research Centers

The school houses a number of research centers where faculty members from across campus pursue issues of mutual interest. In addition to their focus on practical policy problems, the research centers also offer opportunities for student financial aid in the form of research assistant positions, grants, and fellowships.

### Center for Neighborhood Knowledge

The [Center for Neighborhood Knowledge](#) is dedicated to translating its research to inform actionable neighborhood-related policies and programs that contribute to positive social change. It specializes in empirical spatial analysis and emphasizes the study of diversity, differences, and disparities among neighborhoods; and explicitly covers immigrant enclaves, low-income neighborhoods, and minority communities. In response to the current public health crisis and racial climate, the center launched the COVID-19 Equity Research Initiative in March 2020 to analyze systemic inequality and the pandemic's impact on the way we live, work, learn, shop, and socialize. One of the Initiative's objectives is to produce timely research briefs, publicly accessible data, and mapping tools, all to inform public discussion on critical policy issues. The goal is to provide timely insights to policymakers, community stakeholders, and others who are addressing economic, social, and political disruptions, with the ultimate goal of ensuring a fair and just recovery for the most impacted communities.

### Center for Policy Research on Aging

The [Center for Policy Research on Aging](#) (CPRA) was formed to address the significant issues of an aging society through policy analysis, dissemination of information, and technical assistance to the public and private sectors. The demographic challenges of a nation growing older and living longer force society to confront the roles of government and the private sector in serving the increasing number of elderly and their families. The center's mission is to conduct research; inform policymakers; link communities to local, state, and federal governments; and foster collaboration among UCLA faculty members.

### Institute of Transportation Studies

The [UCLA Institute of Transportation Studies](#) (ITS), one of the leading transportation policy research centers in the U.S., was created in 1992 to conduct research and furnish professional education on the social, economic, environmental, and cultural aspects of transportation policy. Each year ITS faculty members, students, and research staff collaborate on a wide array of transportation policy and planning studies, ranging from an analysis of the travel trends and trans-

portation needs of immigrants and low-income workers to the testing and evaluation of innovative fare programs to increase public transit use.

### Institute on Inequality and Democracy

The [Institute on Inequality and Democracy](#), organized in 2016, advances radical democracy in an unequal world through research, critical thought, and alliances with social movements and racial justice activism. Institute programs and projects convene multiple disciplines, narrative forms, and styles of scholarship and practice, while focusing on four research priorities: housing justice, predatory financialization, policing and incarceration, and decolonizing the university. The Institute aims to analyze and transform the divides and dispossessions of our times, in the university and in our cities, across the global south and global north.

### Latino Policy and Politics Institute

The [Latino Policy and Politics Institute](#) (LPPI) is a comprehensive think tank that addresses the most critical domestic policy challenges facing Latinos and other communities of color in states and localities across the U.S. The initiative leverages UCLA's cross-disciplinary strengths to create an enterprise-wide home for Latino social policy with expertise in over a dozen issue areas including civil rights, criminal justice, educational equity, health access, and voting and civic participation. The initiative fosters innovative research, leverages policy-relevant expertise, drives civic engagement, and nurtures a leadership pipeline to propel viable policy reforms that expand opportunity for all Americans.

### Luskin Center for Innovation

The [Luskin Center for Innovation](#) (LCI) conducts rigorous research and timely outreach that informs environmental policies for the health of people and the planet. Center faculty, staff, and graduate student researchers evaluate existing and proposed environmental policies to assess their effectiveness, equity impacts, and potential to spur innovation. The center then shares research findings with community leaders and policymakers, who use LCI research to design evidence-based environmental policies. The center often focuses on California, the world's fifth-largest economy, to support a model of environmental leadership that is relevant globally. Research programs include climate, energy, environmental equity, transportation, urban greening, and water—all linked by the theme of informing effective and equitable solutions to the environmental challenges of our time.

## Ralph and Goldy Lewis Center for Regional Policy Studies

The [Lewis Center for Regional Policy Studies](#) was founded in 1989, with a \$5 million endowment from Ralph and Goldy Lewis, to promote the multidisciplinary study, understanding, and solution of regional policy issues in California. Research projects cover welfare reform, housing, immigration, environment, health insurance, labor and employment, and transportation—with a specific interest on the policy impact on vulnerable populations as a through line.

## UCLA Hub for Health Intervention, Policy and Practice

The [UCLA Hub for Health Intervention, Policy and Practice](#) (HHIPP) connects the academy, community, and policy-makers to address health disparities among diverse communities in Los Angeles and beyond. UCLA HHIPP engages community members in impactful, theory-driven and sustainable research that informs high-level policy and street-level social justice health outcomes. UCLA HHIPP's work situates health policy within a social welfare and social justice framework. It espouses a broad definition of health and wellness with special consideration given to adverse social conditions, stigma, discrimination, poverty, racism, and homophobia.

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# School of the Arts and Architecture

Brett B. Steele, AA Dipl, *Dean*

## School of the Arts and Architecture

8260 Broad Art Center  
310-206-6465

The UCLA School of the Arts and Architecture plays a vital role in the cultural and artistic life of the campus and community. Courses and degree programs in four departments—[Architecture and Urban Design](#), [Art](#), [Design|Media Arts](#), and [World Arts and Cultures/Dance](#)—offer students unparalleled opportunities to learn from faculty members who rank among the most innovative artists, designers, ethnographers, choreographers, architects, and arts culture and performance scholars of today.

Combining opportunities for hands-on study of creative practice with an academic foundation of the liberal arts, the school offers students the chance to develop an integrated and encompassing understanding of human creativity, the arts, and architecture. Its mission is to educate, empower,

and inspire the next generation of citizens to serve as cultural and artistic leaders of the twenty-first century.

The School of the Arts and Architecture includes three public arts units, including the [Center for the Art of Performance](#) at UCLA, one of the largest and most diverse performing arts presenters in the nation; and two world-class museums: the UCLA [Hammer Museum](#), which focuses on contemporary and emerging artists; and the [Fowler Museum](#) at UCLA, which focuses on tradition-based and contemporary arts of Africa, the Americas, Asia, and the Pacific. School teaching, learning, and public activities are organized across nine buildings and sites at the UCLA campus and beyond.

## Departments and Programs

The four departments of the school are integral to the rich and varied cultural life of the UCLA campus. The Architecture and Urban Design Department offers students the opportunity to interrogate contemporary architectural and urban issues in one of the most culturally diverse cities in the world, and to propose possible futures with equal measures of expertise, optimism, and vision. The Art Department offers courses in the history, theory, and practice of visual art across a wide range of media, preparing students for a life of creative making and critical thinking in contemporary art and related fields. The Design|Media Arts Department focuses on digital media and offers a comprehensive, multidisciplinary approach that emphasizes individual exploration. The World Arts and Cultures/Dance Department offers innovative curricula focusing on the arts as expressions of culture, on the creation of dance and performance, and on fostering relationships between critical theory, activism, and artistic practice.

The school is also home to one undergraduate minor. Through its innovative interdisciplinary coursework and community arts programs, the Visual and Performing Arts Education (VAPAE) minor provides students with experiential opportunities to develop into teaching artists, introducing them to a range of possible careers in the arts while also bringing much needed arts education curricula to students throughout Los Angeles.

Information about academic programs is available from the [Office of Student Services](#).

## Teaching Credentials

Students interested in obtaining instructional credentials for California elementary and secondary schools should contact the [Teacher Education Program](#), 1009 Moore Hall.



## Degrees

The School of the Arts and Architecture offers the following degrees and undergraduate minor:

Architectural Studies BA  
 Architecture MA, PhD  
 Architecture and Urban Design MS  
 Art BA, MFA  
 Choreographic Inquiry MFA  
 Culture and Performance MA, PhD  
 Dance BA  
 Design|Media Arts BA, MFA  
 Individual Field BA  
 Master of Architecture  
 World Arts and Cultures BA

## Undergraduate Minor

Visual and Performing Arts Education

## Undergraduate Admission

In addition to the UC undergraduate application, departments require a supplemental application that involves auditions, portfolios, or evidence of creativity. Information about departmental requirements is available on the school [prospective students](#) web page.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and department requirements for the Bachelor of Arts degree.

## University Requirements

The University of California has two requirements that undergraduate students must satisfy in order to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. See [Degree Requirements](#) in Undergraduate Study for details.

Students enrolled in English Composition 1A, 1B, and 2I must take each course for a letter grade.

## School Requirements

There are nine requirements that must be satisfied for award of a degree.

### Degree Requirements

#### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

#### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Quantitative Reasoning
6. Foreign Language
7. Upper-Division Nonmajor Courses
8. Diversity
9. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

#### Department Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or department requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

## Unit Requirement

Students must complete for credit, with a passing grade, no fewer than 180 units and no more than 216 units, of which at least 64 units must be upper-division courses (numbered 100 through 199). Credit for upper-division tutorials numbered 195 through 199 is limited to a maximum of 8 units in a single term, and a maximum of 32 units total for a letter grade. Each major may have limitations on the number of upper-division tutorials and/or units that may be applied toward degree requirements.

## Scholarship Requirement

A 2.0 (C) average is required in all work attempted at the University of California, exclusive of courses in UCLA Extension and those graded Passed/Not Passed. A 2.0 (C) grade-point average is also required in all upper-division courses in the major taken at the University of California, as well as in all courses applied toward the general education and UC requirements.

## Academic Residence Requirement

Students are in residence while enrolled and attending classes at UCLA with a declared major in the School of the Arts and Architecture. Of the last 45 units completed for the

bachelor's degree, 35 must be earned while in residence at the school. No more than 18 of the 35 units may be completed in UCLA Summer Sessions.

Courses offered by UCLA Extension may not be applied toward any part of the residence requirements.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirements.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Writing II. The courses must be taken for a letter grade, and students must receive a C or better grade in each (a C– grade is not acceptable).

### Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

### Writing II

The Writing II requirement must be satisfied within the first six terms of enrollment by completing one course from a faculty-approved list of [Writing II courses](#) and available on the student Degree Audit; see the Registrar's [Writing II requirement](#) web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses also approved for general education may fulfill the relevant general education foundational area.

## Quantitative Reasoning Requirement

Students must demonstrate basic skills in quantitative reasoning. The requirement may be satisfied by completing

one approved UCLA course (see list below) for a C or Passed or better grade (a C– or Not Passed grade is not acceptable), or an equivalent transfer course.

The quantitative reasoning requirement may also be satisfied by achieving an SAT Reasoning Test Mathematics section score of 600 or better for exams taken January 2016 or earlier, or achieving an SAT Mathematics section score of 620 or better for exams taken March 2016 or later, or an SAT Subject Test in Mathematics score of 550 or better, or an ACT mathematics exam score of 26 or better. Approved courses include

- Biostatistics 100A, 100B
- Life Sciences 20, 30A, 30B, 40
- Mathematics 3A, 31A, 31AL
- Philosophy 31
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C
- Public Affairs 60
- Statistics 10, 12, 13

## Foreign Language Requirement

Students may meet the foreign language requirement by scoring 3, 4, or 5 on the College Board Advanced Placement (AP) foreign language examination in Chinese, French, German, Italian, Japanese, or Spanish, or scoring 4 or 5 on the AP foreign language examination in Latin; for languages other than Spanish and Portuguese, presenting a UCLA foreign language proficiency examination score indicating competency through level two; or completing one college-level foreign language course equivalent to level two or above at UCLA with a grade of Passed or C or better. Students who want to meet the foreign language requirement with Spanish, and do not have a qualifying AP score, must enroll in Spanish 2. Students who want to meet the foreign language requirement with Portuguese, and do not have a qualifying AP score, must enroll in Portuguese 2. The foreign language requirement must be completed within the first six terms of enrollment.

International students may petition to use an advanced course in their native language for this requirement. Students whose entire secondary education has been completed in a language other than English may petition to be exempt from the foreign language requirement.

Courses that may be used to fulfill this requirement are published on the Registrar's [foreign language requirement](#) web page and are available on the student Degree Audit.

## Upper-Division Nonmajor Requirement

Students are required to complete a minimum of 12 units of upper-division (100-level) nonmajor courses. Graduate (200-, 400-, and 500-level) courses may not be applied toward this requirement.

## Diversity Requirement

The **diversity requirement** is predicated on the notion that students in the arts must be trained to understand the local, national, and global realities in which they make, understand, interpret, and teach the arts. Those realities include the multicultural, transnational, and global nature of contemporary society. The requirement may be satisfied by taking courses in any of three parts of the student's overall program: general education courses, courses in the major, or upper-division nonmajor elective courses. As such, students are not required to complete an additional course to satisfy the diversity requirement. Courses satisfying this requirement consider intergroup dynamics along with such social dimensions as race, ethnicity, gender, socioeconomic background, religion, sexual orientation, age, and disability; and are relevant to the understanding of these dynamics in contemporary society and culture in the U.S. and around the world.

## General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

### Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Eight courses (38 units minimum) are required. A Writing II or diversity course also approved for general education may

<b>General Education Requirements</b>	
<b>Foundations of the Arts and Humanities</b>	
Literary and Cultural Analysis . . . . .	1 course
Philosophical and Linguistic Analysis . . . . .	1 course
Visual and Performance Arts Analysis and Practice <sup>1</sup>	course
Total = 15 units minimum	
<b>Foundations of Society and Culture</b>	
Historical Analysis . . . . .	1 course
Social Analysis . . . . .	1 course
Third course from either subgroup . . . . .	1 course
Total = 15 units minimum	
<b>Foundations of Scientific Inquiry</b>	
Life Sciences/Physical Sciences . . . . .	2 courses
Two courses from either subgroup. If both courses are selected from the same subgroup, they must be from different departments.	
Total = 8 units minimum	
<b>Total GE . . . . . 8 courses/38 units minimum</b>	
A Writing II course also approved for general education may be applied toward the relevant general education foundational area.	

be applied toward the relevant general education foundational area.

Students who successfully complete a year-long GE cluster series fulfill the Writing II requirement and complete nearly 50 percent of their general education requirements. Students who do not complete the year-long GE cluster series must meet with an adviser in the Student Services Office to determine applicable GE credit.

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

### Foundations of the Arts and Humanities

Three 5-unit courses, one from each subgroup:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. The courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities and may also investigate the complex relations

between artistic and humanistic expression and other facets of society and culture.

### Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated.

### Foundations of Scientific Inquiry

Two courses from either subgroup. If both courses are selected from the same subgroup, they must be from different departments:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, consult with an academic adviser in the [Office of Student Services](#), 2200 Broad Art Center, or see the [master list](#).

### Reciprocity with Other UC Campuses

Students who transfer to UCLA from other UC campuses and have met all GE requirements prior to enrolling at UCLA are not required to complete the School of the Arts and Architecture GE requirements. Written verification from the dean at the other UC campus is required. Verification letters should be sent to the UCLA School of the Arts and Architecture, Office of Student Services, Box 951620, Los Angeles, CA 90095-1620.

## Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE or transfer core courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all UCLA GE requirements are fulfilled when students complete the IGETC courses. Students who select the IGETC must complete it entirely before enrolling at UCLA. Otherwise, they must fulfill the School of the Arts and Architecture GE requirements.

## Department Requirements

Departments generally set two types of requirements that must be satisfied for award of a degree: preparation for the major (lower-division courses) and the major (upper-division courses). Preparation for the major courses should be completed before beginning upper-division work.

## Preparation for the Major

A major requires completion of a set of courses known as preparation for the major. Each department sets its own preparation for the major requirements; see [Curricula and Courses](#).

## The Major

A major is composed of no fewer than 56 units, including at least 36 units of upper-division courses.

Students must complete their major with a scholarship grade-point average of at least 2.0 (C) in all courses in order to remain in the major. Each course in the major department must be taken for a letter grade.

As changes in major requirements occur, students are expected to satisfy the new requirements insofar as possible. Hardship cases should be discussed with the department adviser, and petitions for adjustment should be submitted to the dean of the school when necessary.

Any department offering a major may require a general final examination.

## Individual Majors

Highly motivated students who believe that no single major accommodates their specific interests and goals may pro-

pose designing their own major. Proposals are prepared with faculty guidance and sponsorship, and must explain the intent concerning the anticipated program of study and reasons why the academic goals cannot be achieved within an existing major. Proposals must be submitted no later than the end of the sophomore year. Transfer students must complete at least one term of residency at UCLA before proposing an individual major. Students interested in designing an individual major should consult with the school director of student services, 2200 Broad Art Center.

## Minors and Double Majors

Students may petition for a minor and/or double major on an individual basis. It is strongly recommended that students pursuing a minor or double major enroll in 15 to 20 units per term. Students should contact the Student Services Office for an outline of criteria required for the petition.

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

Each term the study list must include from 12 to 20 units. The school has no provision for part-time enrollment. After the first term, students may petition to carry more than 20 units if they have an overall grade-point average of 3.0 (B) or better and have attained at least a 3.0 (B) grade-point average in the preceding term with all courses completed and passed. Students should contact the Student Services Office no later than the end of the second week of instruction to request additional units.

### Minimum Progress

Students are expected to complete satisfactorily at least 36 units during any three consecutive terms in residence; they are placed on probation if they fail to pass these units. Students are subject to dismissal if they fail to pass at least 32 units in three consecutive regular terms in residence. In addition, students are held to the minimum **grade-point average** and **progress toward degree** policies described in Policies and Regulations.

## Changing a Major

Students in good academic standing who wish to change their major may petition to do so, provided they can complete the new major within the 216-unit limit and normal time to degree (12 terms for students who entered as freshmen; six terms for students who entered as transfers). Petitions must be submitted to and approved by the department or committee in charge of the new major. Admission to certain majors may be closed or restricted. Changes are normally not permitted if students are on probation or have begun their last term.

## Concurrent Enrollment

Enrollment at a non-UC institution or at UCLA Extension while enrolled at UCLA is not permitted.

## Credit Limitations

The following credit limitations apply to all undergraduate students enrolled in the school:

### Advanced Placement Examinations

Credit earned through the College Board Advanced Placement (AP) Examinations may be applied toward certain UC/school requirements. Consult with an adviser in the Student Services Office to determine applicable credit. Portions of AP Examination credit may be evaluated by corresponding UCLA course numbers. If students take the equivalent UCLA course, unit credit for such duplication is deducted before graduation. See the school **AP table** for UCLA course equivalents.

### Graduate Courses

Undergraduate students who wish to take courses numbered in the 200 series for credit toward a specific degree requirement must petition for advance approval of the department chair and the dean of the school and must meet specific qualifications. Courses numbered in the 400 and 500 series may not be applied toward the degree.

## Academic Counseling Services

The school offers advising, program planning in the major and general education requirements, and individual meetings with school and departmental advisers from matriculation through graduation. For academic counseling information, contact the Student Services Office, 2200 Broad Art Center.

## Honors

Undergraduate students who achieve scholastic distinction may qualify for the following honors and programs:



## Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.913 grade-point average (GPA), with at least 12 letter-graded units. The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete or a Not Passed (NP) grade, change a grade, or repeat a course. Dean's Honors are automatically recorded on the transcript for the appropriate term.

## Latin Honors

Latin honors are awarded at graduation to students with superior grade-point averages. To be eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained an overall grade-point average at graduation that places them in the top 20 percent of the school (GPA of 3.913 or better) for *cum laude*, the top 10 percent (GPA of 3.955 or better) for *magna cum laude*, or the top five percent (GPA of 3.973 or better) for *summa cum laude*. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year determine student eligibility. Students should contact the Student Services Office or see the Registrar's [honors](#) web page for the most current calculations of Latin honors.

## Departmental Scholar Program

Exceptionally promising juniors or seniors may be nominated as Departmental Scholars to pursue bachelor's and master's degree programs simultaneously. Qualifications include completion of 24 courses (96 quarter units) at UCLA or the equivalent at a similar institution and the requirements in preparation for the major. Students must also have at least one term of coursework remaining at UCLA. To obtain both the bachelor's and master's degrees students must be provisionally admitted to the Division of Graduate Education, fulfill requirements for each program, and maintain a minimum 3.0 (B) average. No course may be used to fulfill requirements for both degrees. Interested students should consult their department well in advance of application dates for graduate admission. Students should contact the Student Services Office in 2200 Broad Art Center for details.

## Graduate Study

The advanced degree programs offer graduate students unique research opportunities when combined with special resources, such as the Young Research Library, Arts Library special collections, and UCLA exhibit venues.

Fellowships, grants, and assistantships are available through the departments and the dean of the Division of Graduate Education.

## Admission

In addition to requiring that applicants hold a bachelor's degree from an accredited U.S. institution or an equivalent degree of professional title from an international institution, each department in the school has limitations and additional requirements. In general, samples of creative work (auditions, portfolios, computer programs, etc.) are required. Detailed information is available on individual department websites and in [program requirements for UCLA graduate degrees](#).

For information on proficiency in English requirements for international graduate students, see [Graduate Admission](#) in Graduate Study.

## Degree Requirements

Requirements to fulfill each degree objective vary according to the degree and the department. For complete degree requirements, see [program requirements for UCLA graduate degrees](#).

## Research Centers

Ten interdisciplinary research centers—the [Art and Global Health Center](#), [Art|Sci Center](#), [cityLAB](#), Conditional Space Studio, [Counterforce Lab](#), [Experiential Technologies Center](#), [Game Lab](#), [Grunwald Center for the Graphic Arts](#), and [xLAB](#)—as well as the renowned [Murphy Sculpture Garden](#)—are part of the school. They offer students the opportunity to broaden and deepen their experience of the arts and architecture while at UCLA.

In addition to offering a rich and diverse environment on campus, the school encourages students to participate in community outreach programs designed around concerts, exhibitions, symposia, and dance productions presented in cooperation with groups throughout the greater Los Angeles area.

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## School of Dentistry

Paul H. Krebsbach, DDS, PhD, *Dean*

[School of Dentistry](#)

53-038 Dentistry  
310-206-6063

The UCLA School of Dentistry has a national and international reputation for its teaching, research activities, and public service that prepare dental students for professional

careers dedicated to patient care, leadership, and service. The curriculum prepares students for changes in treatment modalities and health care delivery systems. From the moment training begins, students actively participate in preventive and clinical dental care and soon make valuable contributions to the clinical health team. Clinical instruction emphasizes the comprehensive care of patients. Students interact with their colleagues, faculty members, and dental auxiliary personnel in much the same way as they later will interact in a private or group practice.

Students may undertake programs designed to meet their special interests; mandatory selectives encourage advanced training in an area of particular interest and service learning. In addition to basic and applied research programs within the school, students participate in community service programs such as the Wilson-Jennings-Bloomfield UCLA Venice Dental Center. Graduate programs and resident specialty programs foster new lines of research that lead to better treatment options. An active continuing education program, directed by UCLA faculty members, offers a variety of hands-on courses for members of the dental profession and their auxiliaries.

## Degrees and Programs

The School of Dentistry offers the following degrees:

- Doctor of Dental Surgery
- Oral Biology MS, PhD

## Articulated Degree Programs

- Oral Biology MS/Dentistry Certificate
- Oral Biology MS/Doctor of Dental Surgery
- Oral Biology PhD/Dentistry Certificate
- Oral Biology PhD/Doctor of Dental Surgery

## Concurrent Degree Programs

- Doctor of Dental Surgery/Master of Business Administration

In addition, the school has a Professional Program for International Dentists (PPID) and a number of dental specialty residency programs. For information on the MS and PhD programs in Oral Biology, for which admission to the School of Dentistry is not required, see [program requirements for UCLA graduate degrees](#).

## Pre-Dental Programs

For details on [pre-dental programs](#), see the school website.

## DDS Degree

The UCLA dental curriculum leading to the degree of **Doctor of Dental Surgery** (DDS) is based on the quarter system. The course of study usually takes four academic years of approximately nine months each, with three required summer quarters between the first/second, second/third, and third/fourth years. The curriculum is designed to give students experience in all phases of clinical dentistry.

The dental curriculum consists of three principal areas: basic health sciences courses, didactic dental courses, and clinical experience. The first two years of the curriculum are chiefly devoted to didactic, laboratory, and general clinical coursework. The final two years emphasize training and instruction in clinical fields, including endodontics, fixed prosthodontics, operative dentistry, oral diagnosis and treatment planning, oral radiology, oral and maxillofacial surgery, anesthesiology, orthodontics, pediatric dentistry, periodontics, and removable prosthodontics.

## Postgraduate Programs

Opportunities for postgraduate study include a one-year general practice residency program; a one-year advanced education in general dentistry program; a one-year residency in maxillofacial prosthodontics; a six-year oral and maxillofacial surgery residency training program; three-year prosthodontics, periodontics, orthodontics, and dental anesthesiology programs; two-year programs in the specialties of endodontics, oral radiology, and orofacial pain and dysfunction; and a 26-month program in pediatric dentistry.

Information on postgraduate programs can be obtained by visiting the school [post-DDS programs](#) web page.

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# School of Education and Information Studies

Christina A. Christie, PhD, *Dean*

[School of Education and Information Studies](#)

1009 Moore Hall

310-825-8326

[School e-mail](#)

The School of Education and Information Studies (SE&IS) at UCLA is dedicated to inquiry, advancement of knowledge, improvement of professional practice, and service to the education and information professions. SE&IS develops future generations of scholars, teachers, information professionals, and institutional leaders. Its work is guided by the principles of individual responsibility and social justice, an ethic of caring, and commitment to the communities it serves.

Faculty members and students of SE&IS combine a passion and skill for cutting-edge research with an appreciation for its application in the widely diverse cultures and communities in which it exists. These communities serve as fertile training ground for students in all programs, through internships, research projects, summer placements, and teaching opportunities.

SE&IS is committed to the highest-quality professional education, and to the application of research and scholarship to the challenges facing a diverse and increasingly urbanized world.

## Departments and Programs

The school consists of two departments—the Department of **Education** and the Department of **Information Studies**. Both have a clear and strong commitment to the pursuit of excellence in their research-oriented and professional degree programs.

Research-oriented master's and doctoral programs prepare top scholars in their respective fields; while future librarians, archivists, information professionals, teachers, student affairs practitioners, school administrators, transformative coaches, and superintendents are prepared in the various professional master's and doctorate degree programs. The UCLA Lab School (Corinne A. Seeds campus) and the UCLA Community School offer innovative educational programs for pre-K-6 and K-12 students, respectively. The Horace Mann UCLA Community School brings together resources to help young people thrive in the South Los Angeles area.

## Degrees

The School of Education and Information Studies offers the following degrees and undergraduate minors:

- Doctor of Education
- Education MA, PhD
- Educational Administration Joint EdD with UC Irvine
- Education and Social Transformation BA
- Information Studies PhD
- Master of Education
- Master of Library and Information Science, accredited by American Library Association
- Special Education Joint PhD with California State University, Los Angeles

## Articulated Degree Programs

- Master of Education/Latin American Studies MA
- Master of Library and Information Science/Latin American Studies MA

## Concurrent Degree Programs

- Doctor of Education/Juris Doctor
- Education MA/Juris Doctor
- Education MA/Doctor of Medicine
- Education PhD/Juris Doctor
- Master of Education/Juris Doctor
- Master of Library and Information Science/Master of Business Administration

## Credential Programs

The school offers two credential programs accredited by the California Commission on Teacher Credentialing:

- Preliminary Administrative Services Credential
- Teacher Credential

## Undergraduate Minors

- Education Studies
- Information and Media Literacy

## Undergraduate Admission

Students are admitted with a declared pre-major in the College of Letters and Science. See [Entry to the Major](#) under Education in Curricula and Courses for information on applying to the major.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and major requirements for the Bachelor of Arts degree.

## University Requirements

The University of California has two requirements that undergraduate students must satisfy to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. Students who do not satisfy the Entry-Level Writing requirement prior to enrollment must pass an approved course or other program prescribed by their UC campus of residence. Only after satisfying the Entry-Level Writing requirement can they take an English composition course for transfer credit after enrolling at UCLA. See [Degree Requirements](#) in Undergraduate Study for details.

## School Requirements

There are eight requirements that must be satisfied for the award of the degree.

### Degree Requirements

#### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

#### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Quantitative Reasoning
6. Foreign Language
7. Diversity
8. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

#### Major Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or major requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

## Unit Requirement

Students must satisfactorily complete for credit a minimum of 180 units for the bachelor's degree. At least 60 of the 180 units must be upper-division courses numbered 100 through 199. A maximum of 216 units is permitted. Students with Advanced Placement Examination or International Baccalaureate Examination (transfer) credit may exceed the unit maximum by the amount of that credit.

After 216 quarter units, enrollment may not normally be continued in the school without special permission from the dean.

Credit for upper-division tutorials numbered 195 through 199 is limited to 16 units taken for a letter grade. No more than eight units of freshman seminars may be applied toward the degree.

## Scholarship Requirement

Students must earn at least a 2.0 (C) grade-point average (GPA) in all courses undertaken at UCLA to receive a bachelor's degree.

Students must also earn a 2.0 GPA in the major and satisfy both the course and scholarship requirements for the major, including preparation for the major.

## Academic Residence Requirement

Students are in residence while enrolled and attending classes at UCLA with a declared major in the School of Education and Information Studies. Thirty-five of the final 45 units completed for the bachelor's degree must be earned in residence at the school.

For students who transfer from another institution, from UCLA Extension, or from another College or school with senior standing, of the 35 units earned while in residence, 28 must be upper-division units, including 16 upper-division units in the major department. Courses in UCLA Extension may not be offered as part of this residence requirement.

Students enrolled in the Education Abroad Program (EAP) must satisfy the residence requirement by earning 35 of their final 90 units in residence at the school.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirement.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Writing II. Two courses in English composition are required for graduation. Both courses must be taken for letter grades, and students must receive a C or better grade in each (a C– grade is not acceptable).

### Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English, or completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

Qualifying examination scores and courses are determined by the school Faculty Executive Committee.

## Writing II

The Writing II requirement must be satisfied within seven terms of enrollment by completing one course from a faculty-approved list of [Writing II courses](#); see the Registrar's [Writing II requirement](#) web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses may also fulfill preparation for the major requirements and, if approved for general education (GE) credit, may also fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I, Writing II, and reciprocity requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

## Quantitative Reasoning Requirement

The quantitative reasoning requirement may be satisfied by completing one approved UCLA course (see list below) or an equivalent course within the first seven terms of enrollment. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable).

The requirement may also be satisfied by achieving an SAT Reasoning Test Mathematics Section score of 600 or better for exams taken January 2016 or earlier, or achieving an SAT Mathematics section score of 620 or better for exams taken March 2016 or later, or an SAT Subject Test in Mathematics score of 550 or better, or an ACT Mathematics Test score of 26 or better. Approved UCLA courses and examinations, and qualifying scores, are determined by the school Faculty Executive Committee.

Applicable courses may also fulfill preparation for the major requirements and, if approved for general education (GE) credit, may fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the quantitative reasoning and reciprocity requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level quantitative reasoning course that Undergraduate Admission accepts as equivalent to those approved by the school Faculty Executive Committee. Approved courses include

- Biostatistics 100A, 100B
- Life Sciences 20, 30A, 30B, 40

- Mathematics 3A, 31A, 31AL
- Philosophy 31
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C
- Public Affairs 60
- Statistics 10, 12, 13

## Foreign Language Requirement

The foreign language requirement may be satisfied by one of the following methods: scoring 3, 4, or 5 on the College Board Advanced Placement (AP) foreign language examination in Chinese, French, German, Italian, Japanese, or Spanish, or scoring 4 or 5 in Latin; presenting a UCLA foreign language departmental examination score indicating competency through level three; or completing a college-level foreign language course equivalent to level three or above at UCLA with a C or Passed or better grade.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the foreign language and reciprocity requirements.

International students may petition to use an advanced course in their native language for this requirement. Students whose entire secondary education has been completed in a language other than English may petition to be exempt from the foreign language requirement.

Courses that may be used to fulfill this requirement are published on the Registrar's [foreign language requirement](#) web page.

## Diversity Requirement

The **diversity requirement** may be satisfied by completing one course from the faculty-approved list of courses. Courses used to satisfy the diversity requirement are approved by the school Faculty Executive Committee. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable). Applicable courses may also fulfill major, minor, or elective requirements and, if approved for general education (GE) credit, may fulfill a GE requirement. A list of approved courses is available in the [Schedule of Classes](#).

## General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the



### General Education Requirements

#### Foundations of the Arts and Humanities

Literary and Cultural Analysis . . . . . 1 course  
 Philosophical and Linguistic Analysis . . . . . 1 course  
 Visual and Performance Arts Analysis and Practice 1 course  
 Total = 15 units minimum

#### Foundations of Society and Culture

Historical Analysis . . . . . 1 course  
 Social Analysis . . . . . 1 course  
 Third course from either subgroup . . . . . 1 course  
 Total = 15 units minimum

#### Foundations of Scientific Inquiry

Life Sciences . . . . . 2 courses  
 Physical Sciences . . . . . 2 courses  
 One of the four courses must be 5 units and carry laboratory credit. Other courses in the subgroups may be 4 units.  
 Total = 17 units minimum

**Total GE . . . . . 10 courses/47 units minimum**

many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

Applicable courses may also fulfill major, minor, or elective requirements and, if approved for diversity or writing, may fulfill the diversity requirement and/or Writing II requirement.

## Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Ten courses (47 units minimum) are required. GE-approved Writing II courses may fulfill an appropriate foundational area. See the foundational area descriptions below for a breakdown of courses required.

Students who successfully complete a year-long GE cluster series fulfill the Writing II requirement, complete 40 percent of their general education requirements, and receive laboratory/demonstration credit where appropriate.

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

## Foundations of the Arts and Humanities

Three 5-unit courses, one from each subgroup:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. Courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities, and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

## Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated.

## Foundations of Scientific Inquiry

Four courses, two from each subgroup. One 5-unit course from either subgroup must include laboratory credit. Other courses in the subgroups may be 4 units:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

## Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, contact an academic adviser or see the [master list](#).

## Reciprocity with Other UC Campuses

Students who transfer to UCLA from other UC campuses and have met all GE requirements prior to enrolling at UCLA are not required to complete the school GE requirements. Written verification from the dean at the other UC campus is required. Consult with a school counselor regarding eligibility for this option.

## Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE or transfer core courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all GE requirements are fulfilled when students complete the IGETC courses. Two types of requirements must be satisfied for the award of a degree: preparation for the major (lower-division courses) and the major (upper-division courses). Departments set requirements for minors.

## Major Requirements

### Preparation for the Major

Admission to the major requires completion of a set of courses known as preparation for the major. Applicants are admitted to pre-major status until requisite courses are satisfactorily completed. See [Education and Social Transformation BA](#) in Curricula and Courses.

### The Major

A major consists of a group of coordinated upper-division courses and shall be designated as schoolwide, departmental, interdepartmental, or individual. Each course applied toward the major and preparation for the major must be taken for a letter grade unless otherwise stipulated.

A major consists of a minimum of 40 upper-division units.

Students must complete their major with a scholarship grade-point average of at least 2.0 (C) in all courses in order to remain in the major.

See [Education and Social Transformation BA](#) in Curricula and Courses for more details.

## Double Majors

Double majors between the school and other academic units are permitted. Students must be able to complete the proposed double major within the 216-unit limit.

## Minors

Students may choose to pursue a minor to complement their major program of study. Minors consist of no fewer than seven courses (28 units) and no more than nine courses (36 units). Some minors also have admission requirements.

For a list of minors and specializations, see [Undergraduate Minors and Specializations](#); descriptions are in [Curricula and Courses](#).

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

The study list is a record of classes that a student is taking during a particular term. Each term the study list must include from 12 to 20 units. After the first term, students may petition to enroll in more than 20 units if they have an overall grade-point average of 3.0 (B) and attained at least a 3.0 (B) grade-point average the preceding term with all courses passed.

First-term transfer students from any other UC campus may carry excess units on the same basis as students who have completed one or more terms at UCLA; however, they are not encouraged to do so.

### Minimum Progress

Students are expected to complete satisfactorily at least 36 units in any three consecutive terms while in residence; they are placed on probation if they fail to pass these units. They are subject to dismissal if they fail to pass at least 32 units in three consecutive regular terms while in residence.

## Changing a Major

Students in good academic standing who wish to change their major may petition to do so provided they can complete the new major within the 216-unit limit and are on track to graduate on time. Petitions must be submitted to and approved by the department or committee in charge of the new major. Admission to certain majors may be closed or restricted; changes are normally not permitted if students are on probation or have begun their last term.

Students who fail to attain a grade-point average of 2.0 (C) in preparation for the major or major courses may be denied the privilege of entering or continuing in that major.

## Re-entering Students and Their Majors

Students returning to UCLA to resume their studies after an absence of several years may find their previous major area of study is no longer available. They must select a current major in which to complete their studies. Consult with an academic adviser for assistance.

## Concurrent Enrollment

Enrollment at a non-UC institution or UCLA Extension while enrolled at UCLA is not permitted except in extraordinary circumstances. No credit is given for courses taken concurrently elsewhere without the approval of the school.

## Credit Limitations

The following credit limitations apply to all undergraduate students. In many cases, units are not deducted until the final term before graduation. Students with questions should consult with an academic adviser.

Transfer students with credit from other institutions (advanced standing credit) receive a Degree Audit from Undergraduate Admission indicating the transferable units from former institutions; however, the following credit limitations may reduce the total number of transferred units that apply toward the degree in the school. Consult with an adviser about these limitations.

## Upper-Division Tutorials

No more than 8 units of credit may be taken per term in upper-division tutorials numbered 195 through 199. The total number of units allowed in such courses for a letter grade is 16; see the specific restrictions of each department.

## Graduate Courses

Undergraduate students who wish to take courses numbered in the 200 series for credit toward a specific degree require-

ment must petition for advance approval of the department chair and the dean of the school. Courses numbered in the 300, 400, and 500 series may not be applied toward the degree.

## Academic Advising Services

The school offers advising, program planning in the major and general education requirements, and individual meetings with school and departmental counselors. For counseling information, contact the Office of Student Services, 1002 Moore Hall.

## Honors

Undergraduate students who achieve scholastic distinction may qualify for the following honors and programs:

### Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.915 grade-point average (GPA) in any one term, with at least 12 graded units. The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete. Dean's Honors are automatically recorded on the transcript for the appropriate term.

### Latin Honors

Students who have achieved scholastic distinction may be awarded the bachelor's degree with Latin honors. To be eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained an overall grade-point average at graduation that places them in the top 20 percent of the school (GPA of 3.915 or better) for *cum laude*, the top 10 percent (GPA of 3.965 or better) for *magna cum laude*, or the top five percent (GPA of 3.985 or better) for *summa cum laude*. Coursework taken on the Education Abroad Program is applied toward Latin honors at graduation. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year (fall, winter, spring, summer) determine student eligibility. Students should consult their Degree Audits, or the Registrar's [Latin honors](#) web page for the most current Latin honors calculations.

## Graduate Study

### Admission

Admission criteria established by the UCLA Division of Graduate Education require a bachelor's degree from a

regionally accredited institution comparable in standards and content to a bachelor's degree from the University of California. A cumulative scholastic grade-point average of B (3.0 on a 4.0 scale) or better—or its equivalent if the letter grade system is not used—is required for undergraduate study and in any postbaccalaureate study. Additional requirements for **international applicants** are explained in Graduate Study. See the Division of Graduate Education **admissions** website.

Departments and programs in the school set additional admission requirements. See the **school admissions** web page.

## Degree Requirements

Specific degree requirements vary according to the department and program. Refer to **program requirements for UCLA graduate degrees**.

## Research Centers and Institutes

The centers and institutes below furnish SE&IS with valuable resources that support school programs and research. See **research centers**.

### Black Male Institute

The **Black Male Institute** (BMI) is a cadre of scholars, practitioners, community members, and policymakers dedicated to improving the educational experiences and life chances of black males. Educational settings are considered to be critical spaces for developing informed action to address black male persistence in schooling, recognizing that the challenges that impact the academic success of black males are manifold, be they economic, social, legal, or health-related.

### Center for Community Schooling

The **Center for Community Schooling** is a campus-wide initiative to advance university-assisted community schools. As stable anchor institutions, universities play a unique role as K-12 community school partners. Its research, teaching, and service missions inform and are informed by the work of local schools and communities.

### Center for Critical Internet Inquiry

The work of the **Center for Critical Internet Inquiry** (C2i2) explores interdisciplinary intersections of digital technologies and society, with the goal of creating fairness, justice, equity, and sustainability in relationship to our technological engagements.

## Center for Critical Race Studies in Education

The **Center for Critical Race Studies in Education** (CCRSE) along with the staff, visiting scholars, and invited authors are dedicated to producing and publishing research with the goal of exploring questions related to theoretical frameworks, methodology, methods, conceptual tools, and practice associated with critical race studies.

## Center for Dyslexia, Diverse Learners and Social Justice

The **Center**'s aim is to provide local, state, national, and global leadership in the field, leveraging groundbreaking advances in cognitive and neurosciences, linguistics, and education to inform and transform K-12 teaching and learning.

## Center for Information as Evidence

The **Center for Information as Evidence** (CIE) is an interdisciplinary forum to address the ways in which information objects and systems are created, used, and preserved as legal, administrative, scientific, social, cultural, and historical evidence. CIE is committed to incorporating perspectives from ethnic communities around the world, to sustain the diversity within indigenous cultural heritages and broaden methods of information analysis and conservation.

## Center for Knowledge Infrastructures

The **Center for Knowledge Infrastructures** (CKI) conducts research on scientific data practices and policy, scholarly communication, and sociotechnical systems. It explores methods of data collection, innovations in scaling and workflows, and multidisciplinary approaches to complex problems.

## Center for Research and Innovation in Elementary Education

The **Center for Research and Innovation in Elementary Education**, also known as CONNECT, links nationally recognized researchers with teachers and administrators at UCLA Lab School and public schools in Southern California to investigate central issues in education. Programs examine children's learning and development from preschool to sixth grade; investigate teaching diverse student populations; encourage exchange of ideas among scholars, practitioners, and policymakers concerned with child development and school reform; and disseminate effective educational approaches and research.

## Center for Research on Evaluation, Standards, and Student Testing

The [Center for Research on Evaluation, Standards, and Student Testing](#) (CRESST) is devoted to educational research, development, training, and dissemination. CRESST supplies leadership in these areas by creating new methodologies for evaluating educational quality, creating new designs for assessing student learning, promoting the sound use of assessment data, setting the national research agenda, and influencing practice.

## Center for the Transformation of Schools

The [Center for the Transformation of Schools](#) (CTS) conducts research and develops tools to help education systems place a commitment to equity at the center of their work.

## Center X

[Center X](#) offers a unique setting where researchers and practitioners collaborate to design and conduct programs that prepare and support K-12 education professionals committed to social justice, instructional excellence, the integration of research and practice, and caring in low-income urban schools.

## Children's Understanding of Economic and Social Inequality Lab

The [Children's Understanding of Economic and Social Inequality](#) (CUESI) Lab examines children's experiences of social inequality, and its influence on their academic and social outcomes. The lab's research examines the extent to which contextual factors such as poverty, immigration, and social policies, influence family dynamics and, in turn, children's developmental outcomes.

## Civil Rights Project/Proyecto Derechos Civiles

The [Civil Rights Project/Proyecto Derechos Civiles](#) (CRP) research center is dedicated to creating a new generation of research in social sciences and law on the critical issues of civil rights and equal opportunity for racial and ethnic groups in the U.S. It has commissioned more than 400 studies, published 14 books, been cited in major Supreme Court decisions on affirmative action, and issued numerous reports from authors at universities and research centers across the country.

## Community Archives Lab

The [Community Archives Lab at UCLA](#) explores the ways that independent, identity-based memory organizations document, shape, and provide access to the histories of minoritized communities.

## Higher Education Research Institute

The [Higher Education Research Institute](#) (HERI) conducts research, evaluation, information, policy studies, and research training in postsecondary education. The HERI research program includes the outcomes of postsecondary education, leadership development, institutional transformation, faculty performance, federal and state policy, and educational equity; and houses the Cooperative Institutional Research Program (CIRP), the largest ongoing national study of college students in the U.S.

## Institute for Democracy, Education, and Access

The [Institute for Democracy, Education, and Access](#) (IDEA) seeks to understand and challenge pervasive racial and social class inequalities in education. In addition to conducting research and policy analysis, IDEA supports educators, public officials, advocates, community activists, and young people as they design, conduct, and use research to make high-quality public schools and successful college participation routine occurrences in all communities. IDEA also studies how research combines with strategic communications and public engagement to promote widespread participation in civic life.

## Institute for Immigration, Globalization, and Education

The [Institute for Immigration, Globalization, and Education](#) (IGE) conducts multidisciplinary and comparative research engaging policymakers, practitioners, and institutional leaders. The research informs efforts to expand opportunities, reduce barriers, and improve the well-being of diverse, vulnerable, and marginalized students. The work is timely in the context of globalization, which is profoundly changing the developmental contexts, educational trajectories, and life courses of children, adolescents, and young adults.

## Momentum: Accelerating Equity in Computing and Technology

[Momentum](#) employs mixed-methods approaches to conduct cutting-edge research on efforts to diversity computing and technology fields.



## Paulo Freire Institute

The **Paulo Freire Institute** (PFI) seeks to gather scholars and critics of Freire's pedagogy in permanent dialog to foster the advancement of new pedagogical theories and concrete interventions in the real world. PFI brings together research, teaching, and technology while concentrating on five major areas: studies of globalization and education, teacher education, a comparative perspective on Latin American education, the politics of education, and Paulo Freire's political philosophy and critical pedagogy.

## Pritzker Center for Strengthening Children and Families

The **UCLA Pritzker Center for Strengthening Children and Families** is focused on the needs of children and youth who are disconnected from traditional pathways to success, in particular foster youth.

## Sudikoff Family Institute for Education and New Media

The **Sudikoff Family Institute for Education and New Media** utilizes the popular press and other media to disseminate the work of SE&IS scholars to policymakers, educators, and the general public. Sudikoff Fellows are selected each year from SE&IS faculty members to enhance awareness of critical issues related to education and information studies, by contributing to a variety of media that reach a lay audience or serve the public interest in some manner.

## UC/CSU California Collaborative for Neurodiversity and Learning

The **UC/CSU California Collaborative for Neurodiversity and Learning** believes that improving literacy is one of the great civil rights issues of this generation. Californians must work together to secure equal access to quality literacy instruction for all their children. Doing so is key not only to children's literacy and well-being, but also to communities, democracy, and economy. The collaborative was established in June 2019 by Assembly Bill AB 1703. The collaborative represents a historic and critical investment in the state's children with dyslexia and other literacy challenges.

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## School of Law

Michael E. Waterstone, JD, *Dean*

**School of Law**  
1242 Law Building  
310-825-4841

By any standard, UCLA School of Law is recognized as one of the nation's great law schools. Each year a lively, talented, and diverse law student population assembles in a rigorous, innovative, and supportive environment. Faculty members frequently receive awards for teaching excellence, and are highly regarded University-wide and nationally. They also are recognized worldwide for their scholarship in a broad spectrum of fields that dramatically affect the world—constitutional law, environmental law and policy, human rights, criminal law, corporate law, corporate governance, employment law, international law, immigration law, and intellectual property, to name a few. The structure of U.S. democracy; the underpinnings of individual liberties and regulation of business; the powerless; the many permutations of a race-conscious society—all are subjects of investigation and study. Faculty members are committed to being intellectually and professionally demanding of students and supportive at the same time, encouraging and fostering a genuine spirit of collaboration and community.

Law students select courses from an intellectually rich curriculum. Courses are taught in both traditional and clinical settings, with some offered as part of coordinated concurrent degree programs or specializations in business law and policy; critical race studies; environmental law and policy; international and comparative law; law and philosophy; media, entertainment, technology, and sports law; technology, law, and policy; and public interest law and policy. Situated at a major gateway to the Pacific Rim, and part of an outstanding research university, UCLA School of Law affords law students myriad interdisciplinary opportunities in the classroom and through independent research.

The school's nationally recognized experiential education program offers sophisticated courses that help students develop core lawyering skills, implement integrated advocacy strategies to solve clients' problems, and gain from their UCLA education a deeper understanding of what it means to be a lawyer. The experiential education curriculum includes courses that help students develop expertise in client interviewing and counseling, negotiation, business transactions, trial advocacy, community lawyering, environmental law, human rights, and criminal justice. Law clinics offer students opportunities to provide direct representation and policy advocacy to clients in areas including immigration law, veterans advocacy, and prisoners' rights. Their client communities span a broad spectrum, from artists pursuing film careers to incarcerated individuals seeking pardons.

The technologically advanced, spacious, and comfortable Hugh and Hazel Darling Law Library—replete with natural lighting and views—houses an extensive collection of legal materials.

Successful professional placement of graduates is a hallmark of the law school. Approximately 400 interviewers from law firms, corporations, government agencies, and public interest organizations across the country participate in campus events annually. More than 18,000 UCLA graduates work in coveted positions in California and around the world, serving in law firms and government agencies and working as in-house counsel, business executives, law professors, judges, and lawmakers.

## Degrees

The School of Law offers the following degrees:

- Doctor of Juridical Science
- Juris Doctor
- Master of Laws
- Master of Legal Studies

## Articulated Degree Programs

- Master of Legal Studies/Doctor of Medicine

## Concurrent Degree Programs

- Juris Doctor/African American Studies MA
- Juris Doctor/American Indian Studies MA
- Juris Doctor/Doctor of Education
- Juris Doctor/Education MA
- Juris Doctor/Education PhD
- Juris Doctor/Master of Business Administration
- Juris Doctor/Master of Education
- Juris Doctor/Master of Public Health
- Juris Doctor/Master of Public Policy
- Juris Doctor/Master Social Welfare
- Juris Doctor/Master Urban and Regional Planning
- Juris Doctor/Philosophy PhD

In addition to the concurrent programs above, students may design a tailored program from other disciplines in the UCLA curriculum or from another high-quality institution; this must be arranged in consultation with the School of Law and the other selected program.

Detailed information about academic programs, course titles and descriptions, fees, and the semester-system calendar are available on [degrees and specializations](#).

## Doctor of Juridical Science Degree

The [Doctor of Juridical Science](#) (SJD) degree program is designed for those seeking to pursue careers as teachers and scholars of law. The highly selective program is open only to applicants who possess a distinguished prior academic record in law, show promise of outstanding scholarship, and demonstrate a high potential for completing a scholarly dissertation of required quality. Applicants must hold a JD degree or foreign equivalent and an LLM degree (or be enrolled in a program leading to an LLM degree).

## Juris Doctor Degree

UCLA School of Law has as one of its central purposes the training of attorneys who attain high levels of professional excellence and integrity, and who exercise civic responsibility in myriad ways over long careers.

## Admission

By the time of enrollment, UCLA Law applicants must have a bachelor's degree that has been awarded by an institution that is accredited by an accrediting agency recognized by the U.S. Department of Education. For students educated outside of the U.S., the undergraduate degree must be from an institution that is equivalent in quality to that of institutions accredited by an accrediting agency recognized by the U.S. Department of Education. UCLA requires students take a standardized test for admission—either the [Law School Admission Test](#) (LSAT) or the [Graduate Record Examinations](#) (GRE). For questions about UCLA Law's admissions requirements, see [information for first-year applicants](#) or send e-mail the [school admissions office](#).

UCLA Law seeks to admit students of outstanding intellectual ability who will bring a wide range of backgrounds, experiences, and perspectives to the classroom and the legal profession. Through long experience, the faculty has concluded that the quality of the education of each student is affected in significant ways by the presence of vital diverse viewpoints. Students of all backgrounds choose to come to UCLA in significant part because of UCLA Law's outstanding achievements in creating a highly diverse educational environment.

In evaluating each applicant, the school places substantial weight on traditional measures of academic ability, namely grades and standardized test scores—specifically LSAT and GRE scores. It also recognizes that other factors and attributes contribute greatly to a person's ability to succeed as a law student and lawyer including economic, physical, or other challenges that have been overcome; scholarly achievements such as graduate study, awards, and publications; the rigor of the undergraduate educational program undertaken; and letters of recommendation.

The school places special emphasis on socioeconomic disadvantage in the evaluation. The school also considers work experience and career achievement, community or public service, career goals, the ability to contribute to law school programs and specializations, evidence of and potential for leadership, language ability, unusual life experiences, and any other factors (except those deemed inadmissible by the Regents or by other applicable law) that indicate the applicant may make a distinctive contribution to UCLA Law or the legal profession.

## Residence and Unit Requirements

Candidates for the Juris Doctor degree must pursue resident law school study for six semesters and successfully complete 87 units, at least 64 of which must be earned in regularly scheduled law class sessions. The residence requirements may be satisfied as follows: six semesters in regular session in this school; or two semesters in regular session (or equivalent) in a school that is accredited by the American Bar Association, coupled with four semesters in regular session (or equivalent) in this school.

Every first-year student must take the full schedule of required courses; second- and third-year students are required to take a minimum of 12 units and may not take more than 16 units each semester. Students complete a mandatory course in professional responsibility, a substantial analytical writing requirement, and six units of experiential coursework. In addition to the courses in the regular law school curriculum, students may take two courses for credit in other UCLA disciplines. Graduate students may enroll in upper-division law courses on a limited basis. Law courses are not open to non-UCLA students. Auditing of law courses is not permitted.

## Attendance and Grades

The right to take examinations and the privilege of continuing as a student in the school are conditioned on regular classroom attendance. Information on the grading system, which is based on a letter-grade scale of A+ to F, and standards for satisfactory performance and for graduation may be obtained from the [assistant dean for academic affairs](#).

## Curriculum

Courses of instruction are offered within the school and supervised educational experiences outside it in an effort to enable students to think in new and clarifying ways and to prepare them for careers of practice and public service. To this end, the school employs several instructional techniques in a variety of subject areas.

In the first year of their legal education, students undertake intensive study of legal reasoning in fields that have historically dominated legal thought. Students begin with a pio-

neering week-long orientation program that immerses them in the fundamentals of the law school learning process. From there they embark on a formative first year of courses that historically have laid the foundation for law of all kinds: civil procedure, constitutional law, contracts, and torts. In addition, an opportunity to enroll in two electives in the second semester serves as a gateway to the upper-division curriculum.

In the second and third years, students have an opportunity to engage in a number of different fields of law and law-related study. All of the courses in the second- and third-year curricula are elective, with the exception of a mandatory course in criminal law, professional responsibility, and property; a substantial analytical writing requirement; and six units of experiential coursework.

## Master of Laws Degree

The School of Law offers a [Master of Laws](#) (LLM) degree program for international and domestic law school graduates who wish to pursue a year of graduate legal education. The program allows students to specialize their studies in fields such as entertainment law, international and comparative law, and four separate business law subjects; or to design their own specialization in a field of their choice.

## Master of Legal Studies Degree

The [Master of Legal Studies](#) (MLS) degree program is designed for non-lawyer professionals in business, government, and the nonprofit sector who seek to advance their careers and capabilities by obtaining an advanced degree and a deep understanding of the legal and regulatory issues that impact their industry or field of interest. Full-time students can finish the degree in one academic year, part-time students may take as many as four years. An MLS degree does not entitle the holder to sit for the bar exam or become a licensed lawyer.

## Academic Specializations for Juris Doctor Degree

### Business Law and Policy

The Business Law and Policy specializations are designed for students who wish to focus their schooling in a particular area of business law and ultimately earn a certificate of completion with their degree. Students may choose from two specializations: business law and taxation. Approximately 70 courses and seminars are offered. In addition, there are two recommended tracks: corporate law and bankruptcy and commercial law, which offer additional guidance to students in course selection for the business law specializations.

Business law materials are integrated to varying degrees in the law school's first-year curriculum, typically in property, contracts, and torts. The second- and third-year curricula in the specialization include courses covering a wide variety of legal and business issues, ranging from regulation of markets to the design of business transactions.

## Critical Race Studies

UCLA School of Law is the only American law school to offer an advanced curriculum that fosters students' systematic and rigorous study in the area of critical race studies. With many faculty members who have been instrumental in pioneering and advancing critical race theory, the Critical Race Studies specialization is essential to promoting insightful, intelligent public conversation about race relations. It is appropriate for law students who seek advanced study and/or practice in race and the law, critical race theory, civil rights, public policy, and other legal practice areas that are likely to involve working with racial minority clients and communities or working to combat racial inequality.

## Environmental Law

UCLA School of Law is home to the Emmett Institute on Climate Change and the Environment, a national leader in scholarship and advocacy and home to top professors who are on the legal front lines. These scholars teach the intricacies of environmental law, provide students with invaluable mentorship and offer them a substantial boost into impactful careers as drivers of law and policy at all levels of government. Students participate in a wide array of cutting-edge courses and experiential programs. These include the Frank G. Wells Environmental Law Clinic and the California Environmental Legislation and Policy Clinic, where students work directly with state lawmakers to address specific problems confronting the environment. Through the Emmett Institute, students travel to high-level meetings in California and a variety of overseas destinations where they confer with experts in the field. Students also write and edit the *Journal of Environmental Law and Policy*, complete externships at organizations including the Natural Resources Defense Council and collaborate on campus-wide symposia and initiatives to confront one of the biggest challenges of our time.

## International and Comparative Law

The International and Comparative Law program is one of the best in the nation. An expansive law faculty, course offerings, colloquia and symposia, student-edited journals, externships, foreign exchange offerings, and a broad community of interested students from around the world constitute a rich milieu in which to learn about the field. The

International and Comparative Law specialization builds on these strengths, and directs students to coursework that may range from international business to comparative constitutional law to international human rights.

## Law and Philosophy

The Law and Philosophy specialization is designed for students who want to supplement their legal studies by exploring more theoretical issues concerning the philosophical foundations of law. It is invaluable to those students interested in attending graduate programs or exploring a career in academia. The specialization exposes students to material on the nature of law and legal systems, legal methodologies, and the theoretical underpinnings and justifications of particular doctrinal areas such as constitutional law, criminal law, and contract. Students need not have any prior background in philosophy, but a strong interest in the subject is recommended.

## Media, Entertainment, Technology, and Sports Law and Policy

Los Angeles is the center of the entertainment industry. The Media, Entertainment, Technology, and Sports Law and Policy specialization is the most comprehensive, advanced, and innovative approach to the study of entertainment and media law in the country. Students who fulfill the requirements have a solid grounding in the law, customs, theory, and policy in the motion picture, television, music, and other industries involved in creative and artistic matters. The program also prepares students who choose to work in nonprofit institutions, government, or academia in the area of entertainment, media, and intellectual property law.

## Public Interest Law and Policy

Recognizing the considerable debate about the proper role of the law in creating and sustaining a just society, the David J. Epstein Program in Public Interest Law and Policy specialization strives to offer its students an innovative and intellectually ambitious curriculum that prepares them to engage in sophisticated representation of traditionally underserved clients and interests. The specialization, one of the nation's top such programs, has a competitive admissions process. Graduates have received prestigious public interest law fellowships, including the Skadden and Equal Justice Works postgraduate fellowships, and work in a variety of settings, including nonprofit organizations, government agencies, think tanks, and private public interest firms. Graduates work throughout the world in a broad range of social justice issues such as homelessness prevention; immigrants' rights; health-care access; poverty; workers' rights; international human rights; criminal justice;

lesbian, gay, bisexual, transgender, and queer rights; and more. Faculty members are leaders in their respective fields, and have distinguished themselves by the quality of their practical legal experience, scholarship, and teaching.

## Technology Law

Technology law is a field of growing importance across the legal profession, and an area of increasing interest to students. In practical terms, law and technology practitioners engage across a range of different doctrinal areas including patent law, trademark law, copyright law, privacy law, anti-trust, etc. These diverse fields have begun to coalesce into a distinct thematic area of scholarship and practice, as evidenced by the propagation of specialized law and technology journals (including at UCLA), and an expanding number of law firms which bill themselves as focusing on technology law. This specialization aims to support students' entry into career tracks related to technology, and provides a distinct home to students interested in this space, as well as career development, mentorship, and educational opportunities aimed at cultivating a mastery over this exciting and emerging field.

## Academic Specializations for LLM Degree

### Business Law

The Business Law specialization is designed to allow students to focus in one of four tracks: business law, bankruptcy, securities regulation, and taxation. Approximately 70 courses and seminars are offered in the specialization. The four tracks are designed to offer guidance to students in course selection, as well as highlight the specialization's curricular strengths. The advanced curricula include courses covering a wide variety of legal and business issues, ranging from regulation of markets to the design of business transactions. The Lowell Milken Institute for Business Law and Policy prepares students for outstanding careers and leadership in business law; as well as in business, the nonprofit sector, and philanthropy. The institute simultaneously serves as a dynamic hub of research and strategy for practitioners, scholars, and experts across a variety of disciplines.

### Critical Race Studies

UCLA School of Law is the only American law school to offer an advanced curriculum that fosters students' systematic and rigorous study in the area of critical race studies. With many faculty members who have been instrumental in pioneering and advancing critical race theory, the Critical Race Studies specialization is essential to promoting

insightful, intelligent public conversation about race relations. It is appropriate for law students who seek advanced study and/or practice in race and the law, critical race theory, civil rights, public policy, and other legal practice areas that are likely to involve working with racial minority clients and communities or working to combat racial inequality.

### Environmental Law

UCLA School of Law is home to the Emmett Institute on Climate Change and the Environment, a national leader in scholarship and advocacy and home to top professors who are on the legal front lines. These scholars teach the intricacies of environmental law, provide students with invaluable mentorship and offer them a substantial boost into impactful careers as drivers of law and policy at all levels of government. Students participate in a wide array of cutting-edge courses and experiential programs. These include the Frank G. Wells Environmental Law Clinic and the California Environmental Legislation and Policy Clinic, where students work directly with state lawmakers to address specific problems confronting the environment. Through the Emmett Institute, students travel to high-level meetings in California and a variety of overseas destinations where they confer with experts in the field. Students also write and edit the *Journal of Environmental Law and Policy*, complete externships at organizations including the Natural Resources Defense Council and collaborate on campus-wide symposia and initiatives to confront one of the biggest challenges of our time.

### International and Comparative Law

The International and Comparative Law program is one of the best in the nation. An expansive law faculty, course offerings, colloquia and symposia, student-edited journals, externships, foreign exchange offerings, and a broad community of interested students from around the world constitute a rich milieu in which to learn about the field. The International and Comparative Law specialization builds on these strengths, and directs students to coursework that may range from international business to comparative constitutional law to international human rights.

### Law and Sexuality

The Law and Sexuality specialization builds on the role of the school as a leader in the field of sexual orientation and gender identity law and scholarship. The goal of the specialization is to expand the quality and extent of legal knowledge and public discourse on issues related to sexuality and law. It is affiliated with the Williams Institute, a national think tank dedicated to conducting rigorous, independent research on sexual orientation and gender identity law and



public policy. Students can take classes offered by faculty members and scholars associated with the institute, and participate in a range of institute activities including the speaker series and annual conference, moot court competition, and the Dukeminier Awards journal. Staff from the institute work with LLM students to secure internships in the Los Angeles area and to establish connections between LLM students and international experts and organizations working in their geographic or topic area. The specialization involves coursework on comparative and/or international law with focus on sexuality issues.

## Media, Entertainment, and Technology Law and Policy

Los Angeles is the center of the entertainment industry. The specialization offers the most comprehensive, advanced, and innovative approach to the study of entertainment and media law in the world. Students who fulfill the requirements have a solid grounding in the law, custom, theory, and policy in the motion picture, television, music, and other industries involved in creative and artistic matters. The program also prepares students who choose to work in nonprofit institutions, government, or academia in the area of entertainment, media, and intellectual property law.

## Public Interest Law

Exploring the proper role of the law in creating and sustaining a just society, the Public Interest Law specialization strives to offer its students an innovative and intellectually ambitious curriculum that prepares them to engage in sophisticated representation of traditionally underserved clients and interests. The specialization, one of the nation's top such programs, has a competitive admissions process. Students represent a broad range of political and ideological perspectives. Graduates' impact is far reaching as they work on a broad range of social justice issues such as women's rights; immigrants' rights; poverty; health-care access; international human rights; criminal justice; lesbian, gay, bisexual, transgender, and queer rights; and more.

## Research Centers, Institutes, and Programs

### A. Barry Cappello Program in Trial Advocacy

The [A. Barry Cappello Program in Trial Advocacy](#) provides comprehensive training in the strategies and techniques required to be a successful trial lawyer. Through courses, clinical opportunities, and one of the best competition pro-

grams in the country, students learn how to prepare for and conduct jury selection, opening statements, direct and cross examinations, and closing arguments, as well as how to make and respond to evidentiary objections. Award-winning faculty, experienced trial lawyers, and nationally successful mock trial coaches lead the program.

## Animal Law and Policy Program

The [Animal Law and Policy Program](#) is an institutional umbrella for various courses in animal law, including a clinical or simulation course through which students can learn practical legal skills in the role of hearing examiners in potentially dangerous dog disputes, and also includes a small grants program designed to encourage qualitative and quantitative empirical research that advances animal law and policy reform.

## Center for Immigration Law and Policy

Founded in 2020, the [Center for Immigration Law and Policy](#) (CILP) at the UCLA School of Law expands the law school's role as a national leader in immigration law and policy. CILP generates innovative ideas at the intersection of immigration scholarship and practice; serves as a hub for transforming those ideas into meaningful changes in immigration policy at the local, state, and national level; and empowers students with unique opportunities for experiential learning through work with academics, practitioners, policymakers, and activists. CILP pursues those goals by supporting faculty performing cutting-edge work in immigration law and policy; bolstering initiatives for student engagement including the Immigrant Family Legal Clinic, the Immigrants' Rights Policy Clinic and service-learning trips for UCLA Law students to border regions; engaging in strategic litigation; publishing briefings and reports on immigration policy; and hosting conferences and symposia featuring top national scholars.

## Center for Law and Economics

The mission of the [Center for Law and Economics](#) is to foster academic scholarship exploring how economics can help us better understand and improve our laws. UCLA has one of the richest law and economics traditions in the world, and many of the founders of law and economics have made UCLA their academic home. The center, along with the Anderson Graduate School of Management and School of Law Lowell Milken Institute for Business Law and Policy, sponsors the UCLA Law, Economics, and Organization Workshop, where speakers present their latest works-in-progress in the broad area of law and economics as it relates to business organizations.

## Criminal Justice Program

The **Criminal Justice Program** (CJP) serves as a central hub for UCLA Law's work in the area of criminal and juvenile law. Through CJP, students interested in criminal law may engage directly in a wide range of specialized courses, and also have opportunities to engage in research, policy advocacy, and client representation. Research undertaken by CJP faculty and staff help to inform criminal law and policy at both the national and local levels. This research has several key areas of focus including police brutality and accountability, criminal law and immigration enforcement, pretrial detention and bail policy, collateral consequences of criminal convictions, youth justice and the family regulation system, restorative and transformative justice, and alternatives to policing and prosecution.

## Critical Race Studies Program

Throughout American history, race has profoundly affected the lives of individuals, growth of social institutions, substance of culture, and workings of our political economy. Not surprisingly, this impact has been substantially mediated through the law and legal institutions. To understand the deep interconnections between race and law and, particularly the ways in which race and law are mutually constitutive, is an extraordinary intellectual challenge with substantial practical implications. In a nation that is becoming more racially diverse and finds global issues at the forefront of political debate, these issues promise to remain central to the work of law practitioners and the research of legal scholars. The only one of its kind in the U.S., the **Critical Race Studies Program** is proud that some of the original architects of critical race theory are faculty members. Established in 2000, the program is a training ground for a new generation of practitioners, scholars, and advocates committed to racial justice theory and practice; and is a multifaceted program that augments a rigorous course of study with research colloquia, symposia, interdisciplinary collaborations, and community partnerships in order to integrate theory and practice.

## David J. Epstein Program in Public Interest Law and Policy

The school's highly selective **David J. Epstein Program in Public Interest Law and Policy** was established in 1997 in response to the need to better train public-interest lawyers. It quickly became one of the nation's most innovative and successful law school public-interest programs, engaging students in an array of social justice issues. The program strives to ensure that its students pursue an innovative and intellectually ambitious curriculum, and extracurricular involvement that best prepares them to engage in sophisti-

cated representation of traditionally underserved clients and interests. Beyond the formal coursework, the program offers an array of opportunities for students to hear from leading public-interest practitioners and scholars, work on current policy problems, and become involved in public-interest activities within and outside the School of Law. The program also sponsors a series of forums, symposia, and activities that focus on social justice issues in which all students, faculty, alumni, and the broader community participate.

## Emmett Institute on Climate Change and the Environment

The **Emmett Institute on Climate Change and the Environment** is the leading law-school center focused on climate change and other critical environmental issues. Founded in 2008, the institute works across disciplines to develop and promote research and policy tools useful to decision makers locally, statewide, nationally, and beyond. The institute houses the school's leading environmental programs, including the Frank G. Wells Environmental Law Clinic, a vital training ground for environmental lawyering. Taking advantage of its home at one of California's top law schools, the institute has particular expertise in the cutting-edge steps taken by California to lead the way toward meaningful reductions of greenhouse gas emissions. Lawmakers, the broader legal community, business leaders, academics, and the media rely on the institute as a trusted resource to analyze and answer questions about policy and law issues related to climate change and other environmental challenges.

## Empirical Research Group

UCLA School of Law is one of the few law schools in the country to offer its faculty and researchers the support of trained methodologists to support empirical research. The **Empirical Research Group** (ERG) specializes in the design and execution of quantitative research in law, the social sciences, and public policy. ERG enables faculty members to include robust empirical analysis in their legal scholarship and promotes interdisciplinary collaboration. ERG has been involved in research across a wide range of topics including bankruptcy, criminal justice, criminal and civil procedure, education, environmental policy, gender and sexual identity, housing, law and economics, tax policy, and voting rights. ERG trains and supervises law students and research assistants in research methods and works closely with law students who conduct their own empirical research.

## Experiential Education Program

The School of Law has long been recognized for its innovative approach to experiential teaching that transforms the classroom into a real-world laboratory through the integra-

tion of theory and practice. It has been a national leader in clinical teaching since the early 1970s, and continues to offer rigorous practical training across a wide range of practice areas. Students gain crucial firsthand experience that prepares them for future careers, learning from faculty members whose knowledge and expertise place them at the forefront of experiential education.

From the first year, students have opportunities to receive training and hands-on experience by participating in the **El Centro Legal Clinics**. El Centro places students with public-interest legal services organizations to provide legal assistance to underserved individuals, families, and communities. Second- and third-year students can participate in a broad array of clinical and experiential courses that encompass all areas of legal practice—litigation, transactional, and public interest. In addition, second- and third-year students can do part-time and full-time externships, working for judges, government agencies, public interest law firms, and non-profit organizations.

The experiential education program is led by exceptional faculty members—visionary scholars who have contributed the cornerstone ideas that form the basis of clinical training, as well as a new generation of leaders who are bringing experiential education into areas of the legal profession that have long remained outside the scope of hands-on training.

## Externships and Field Placements

Through the School of Law's extensive and diversified **externship program**, students can work in a supervised environment with a wide variety of employers and in a diverse range of practice areas. Students are able to extern with judges, government agencies, nonprofit organizations, or in some circumstances, entertainment and other in-house placements. They also may participate in the **UCDC Law Program**, a full-time externship program in Washington, DC. The field placement program brings together faculty members, students, and practicing lawyers to collaborate and connect classroom learning with practice opportunities.

## Institute for Technology, Law and Policy

The UCLA **Institute for Technology, Law and Policy** is a collaboration between the UCLA School of Law and the Samueli School of Engineering whose mission is to foster research and analysis to ensure that new technologies are developed, implemented, and regulated in ways that are socially beneficial, equitable, and accountable. The institute brings together faculty and students from the law and engineering schools to conduct research, convene events, and engage the wider academic community and the public about the benefits and

risks of technologies including artificial intelligence and machine learning, extended reality, cybersecurity, and digital media and communications.

## International and Comparative Law Program

The **International and Comparative Law Program** offers a wealth of courses, seminars, and clinics, prominent symposia, international moot court opportunities, and highly regarded student-edited journals that address the emerging challenges of a globalized world. Permanent faculty members offer numerous international and comparative law courses such as international business transactions, national security law, international environmental law, international criminal law, European Union law, and Islamic law. The study of international and comparative law is further strengthened by the opportunity to take courses in other UCLA departments. Some of the country's best work in international economics, politics, and business occurs at UCLA, and many law students find it valuable to complement their law school work with coursework in other departments. Students may also pursue joint degrees with other departments with the approval of the law school administration.

## Law and Philosophy Program

The School of Law and the Philosophy Department offer an exciting **program in law and philosophy** that takes advantage of the law faculty's strength and depth in the subject, and the school's close relationship to the Philosophy Department. The program has many dimensions, including a wide range of courses at the intersection of law and philosophy and a legal theory workshop, open to all members of the law school and Philosophy Department, in which leading scholars present works in progress.

## Lowell Milken Institute for Business Law and Policy

The central mission of the **Lowell Milken Institute for Business Law and Policy** is to influence national legal and policy debate over critical issues affecting the regulation and governance of business. The institute seeks to fulfill this mission by promoting innovative research at the intersection of law and business, by a highly respected and widely recognized business law faculty; by offering a unique blend of policy and practice-oriented courses designed to prepare law students to be leaders in the new economy; and by hosting timely conferences and scholarly events on matters that advance the public discussion.

## Native Nations Law and Policy Center

The **Native Nations Law and Policy Center** supports Native nations to enhance their governmental institutions and laws, strengthen their cultural resource protections, and address critical public policy issues by bringing together UCLA academic resources and the knowledge and experience of tribal leaders and knowledge-holders. The center serves as the home for the concurrent Juris Doctor/American Indian Studies MA program; the Richard M. Milanovich Fellowship in Law, the first-of-its kind fellowship supported by the Agua Caliente Band of Mission Indians devoted to the promotion of Native American legal scholarship; the Graton Scholarship, a three-year, full tuition scholarship for five UCLA Law students annually seeking legal careers in Native American law; numerous courses devoted to the study of Native American law, tribal law, and Indigenous rights; and the Tribal Legal Development Clinic, a year-round legal clinic that connects Native nations with law students in projects such as code development and serving as law clerks for tribal courts.

## Office of Public Interest Programs

UCLA School of Law has a long-standing commitment to public service, and is committed to cultivating an environment that encourages all of its students and alumni to better serve society in myriad ways. Students gain significant exposure and experience in public service through clinical courses, a pro bono program, an externship program, extensive public interest advising and informational programming, and numerous student organizations. The **Office of Public Interest Programs**, hub of the school's public interest efforts, hosts a variety of career-oriented programs and relevant public interest forums and events in which students, faculty, alumni, and the broader community participate. The office also hosts the annual Southern California Public Interest Career Day, which attracts more than 110 public service employers and some 1,000 students from around the region.

## Prison Law and Policy Program

The **Prison Law and Policy Program** serves as a hub connecting students and faculty committed to understanding and challenging the American carceral system. Through a focus on prisons and jails, it aims to shed light on the way the law structures all aspects of the contemporary experience of criminal punishment in the U.S. Its main goals are to train the next generation of prisoners' rights lawyers and to expose the broader law school community to the practices of American penalty and the issues of law, policy, justice, and morality these practices raise. Program initiatives include the Incarcerated Persons Correspondence Project,

the Incarcerated Persons Pen Pal Project, the Prison Accountability Project, and the Behind Bars Data Project.

## Program on Legal Ethics and the Profession

The **Program on Legal Ethics** and the Profession provides students with a foundation in legal ethics through classes and events focused on the ethical responsibilities of counsel and the legal profession's commitment to public service and access to justice. By fostering discussion and the practical and scholarly exchange on the central challenges of contemporary legal practice, the program trains the next generation of lawyers and professional leaders to identify solutions to resolve complex ethical problems.

## Program on Understanding Law, Science, and Evidence

Founded in 2009, the **Program on Understanding Law, Science, and Evidence** (PULSE) explores the many connections between law and science, technology, and evidence. PULSE engages in interdisciplinary research, discussion, and programming to examine how basic facts about our world, furnished through science and credited as evidence, influence various venues of law and policymaking.

## The Promise Institute for Human Rights

The **Promise Institute for Human Rights** is the innovative center for human rights education, research, and impact at UCLA School of Law. Leveraging the creativity and dynamism of Los Angeles, the institute seeks to reimagine the potential of human rights to address some of the most pressing issues of our time.

The institute brings together leading experts in international law and human rights. From its rich curriculum to our broad array of focus areas and projects, it empowers the next generation of human rights lawyers and leaders.

## Resnick Center for Food Law and Policy

The **Resnick Center for Food Law and Policy** is dedicated to studying and advancing law and policy solutions to improve the modern food system. A national think tank at the school, the program develops key legal and policy research and tools to foster a food system, from farm to fork, that is healthy both for consumers and the environment.



## Transnational Program on Criminal Justice

The **Transnational Program on Criminal Justice** seeks justice across borders through examination of the principles, practices, and social conditions of criminal justice systems across the world. The program produces timely, collaborative research to improve understanding on diverse topics at the intersection of criminal justice, comparative and international law, and human rights law.

## UCLA Institute for Technology, Law, and Policy

The **UCLA Institute for Technology, Law, and Policy** performs cross-disciplinary research on the ways that new and emerging technologies affect society, privacy, law, and public policy. The institute is a collaboration between UCLA School of Law and the UCLA Samueli School of Engineering. The institute brings together faculty and students from the law and engineering schools to conduct research, convene events, and engage the wider academic community and the public about the benefits and risks of technologies including artificial intelligence and machine learning, robotics, cybersecurity, and digital media and communications.

## UCLA-RAND Center for Law and Public Policy

The **UCLA-Rand Center for Law and Public Policy** is a unique partnership of UCLA Law and the RAND Corporation. The center promotes collaborative legal and policy research grounded in multidisciplinary empirical analysis to guide legal and public policymakers in the 21st century.

The center addresses topics as varied as medical malpractice, class actions, employment discrimination, and institutional reform. One of the center's largest ongoing projects is a large-scale data collection and analysis project on civil justice in Los Angeles Superior Courts. The center has expanded curricular offerings such as courses on policy analysis and advocacy, gerrymandering, and other law and policy topics.

## Williams Institute

The **Williams Institute** is the only think tank of its kind dedicated to the field of sexual orientation and gender identity law and public policy. The institute supports legal scholarship, legal research, policy analysis, and education regarding sexual orientation, gender identity discrimination, and other legal issues that affect lesbian, gay, bisexual, transgender, queer, and other persons. The institute began with the recognition that issues central to sexual orientation and

gender identity law have profound implications for the development of the law and public policy in general. Drawing on the intellectual and material resources of UCLA, the institute serves as a national center for the interdisciplinary exploration of these issues by scholars, judges, practitioners, advocates, and students.

## Ziffren Institute for Media, Entertainment, Technology and Sports Law

The **Ziffren Institute for Media, Entertainment, Technology and Sports Law** supports and expands the curricular offerings of the Media, Entertainment, Technology and Sports Law and Policy specialization. The program helps students interested in learning more about entertainment law to earn externships with entertainment-related businesses, brings influential speakers to campus, and sponsors the industry's top legal conference on entertainment issues, the annual UCLA Entertainment Symposium. Students run an entertainment-related journal, the *UCLA Entertainment Law Review*; and the student organization, the Entertainment Law Association.

## Ziman Center for Real Estate

Reflecting a growing interdisciplinary focus at UCLA, the School of Law formed a partnership in 2005 with the Anderson Graduate School of Management to create the **Ziman Center for Real Estate**. The center is firmly grounded in the scholarship and teaching missions of both schools, and offers practical application principles that help real estate industry professionals, public officials, and business people make critical policy and business decisions. The center truly bridges the divide between research and practice, and offers students a full range of coursework that supplies a holistic view of real estate issues.

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## School of Nursing

Lin Zhan, RN, PhD, FAAN, *Dean*

**School of Nursing**

2-147 Factor Building

310-825-7181

**Student Affairs e-mail**

The UCLA School of Nursing enjoys a national and international reputation for excellence in teaching, research, and clinical practice.

A strong scientific basis underlies the teaching of nursing practice, leadership, and research. Related clinical experiences are arranged within the Ronald Reagan UCLA Medical Center, its affiliates, and in selected community sites.



The bachelor's degree program prepares nurses as generalists with special skills in primary, secondary, and tertiary prevention and care within a population-based context; leadership; and evidence-based practice. The master's degree program prepares nurses as generalists in hospital-based care or for advanced nursing practice as nurse practitioners or clinical specialists in a variety of settings and specialized areas of health care. The PhD program prepares scholars who conduct original research, generate new theories, and build the scientific basis for professional nursing practice. Research is both basic and applied. The DNP program prepares nurses who are currently functioning at an advanced level of practice as nurse practitioners or clinical nurse specialists. The professional practice doctorate is designed to develop competencies for advanced clinical and leadership roles beyond the master's degree necessary for the higher levels of patient safety and quality of patient care. Leadership, health system knowledge, and quality—as well as health care policy and critical content—are emphasized in the curriculum.

The school has an exceptionally qualified faculty; many members have national and international reputations for excellence. The school is consistently ranked high for its teaching and research programs. The innovative curriculum is responsive to national needs in health care and the diversity of the patient population. Graduates of the program are sought by health care institutions and educational programs, and many alumni have become leaders in the field. Education in this research university, with its full range of academic disciplines, offers a rich environment for preparation in the health sciences.

## History and Accreditation

In 1949, the Regents of the University of California authorized the School of Nursing as one of the professional schools of the UCLA Center for Health Sciences. This action paved the way in 1950 for the opening of an undergraduate traditional program in nursing leading to the Bachelor of Science (BS) degree. In 1997, the original traditional BS program curriculum was revised to meet the educational needs of students who are registered nurses with Associate Degrees or diplomas in nursing. In 2006, the school reinstated a traditional/prelicensure BS program with admission at the freshman level. In 2010, the BS (Generic/Prelicensure) program was renamed to the BS (Prelicensure) program.

In 1951, a graduate program leading to the Master of Science (MS) degree in Nursing was established to prepare baccalaureate graduates for advanced practice nursing roles. In 1966, the Master of Nursing (MN) degree was established as an alternate to the MS degree, which was discontinued in 1969. In 1996, the master's degree designation was changed from MN to Master of Science in Nursing (MSN), which is

still awarded to graduates prepared as nurse practitioners and clinical nurse specialists. In 2006, the school launched the master's entry clinical nurse (MECN)/prelicensure option within the MSN degree program, which is designed for prelicensure students with bachelor's degrees or higher education in another discipline.

In 1986, the Doctor of Nursing Science (DNSc) degree program was approved, and in 1987 the first doctoral students were admitted. In 1995, the doctorate degree designation was changed from DNSc to PhD in Nursing. In 2013, an enroute MS option was established within the existing PhD program. In 2015, UCLA approved conversion of the DNSc degree to a PhD for former DNSc graduates.

In 2018, the Doctor of Nursing Practice (DNP) program was approved. Graduates of the DNP program will be the leaders for the translation of research into practice. The DNP degree is designed to meet the dynamic needs of the national health care system to improve quality of care, promote patient safety, and reduce cost.

The prelicensure (BS and MECN) and advanced practice master's programs are approved by the [California Board of Registered Nursing](#). In 2020, the [Commission on Collegiate Nursing Education](#) (CCNE) renewed that accreditation for an additional 10 years.

## Degrees

The School of Nursing offers the following degrees:

- Doctor of Nursing Practice
- Master of Science in Nursing
- Nursing BS, MS, PhD

## Concurrent Degree Program

- Master of Science in Nursing/Master of Business Administration

Admission is currently suspended to the Nursing and Management concurrent degree.

## School Philosophy

The School of Nursing is guided by a philosophy that embodies the mission and goals of the University of California. The philosophy addresses nursing, the clients of nursing, and nursing students. The school is committed to an interdisciplinary learning environment.

Nursing encompasses clinical practice, education, research, consultation, leadership, management, and service to the profession; and to the local and global community. It involves individuals, families, groups, organizations, and communities as clients. The profession must consider the human and physical environments that interact with these

clients who may have health conditions that range from wellness to illness. Nursing activities must therefore include health promotion and maintenance, intervention and treatment, rehabilitation and restoration, and palliation. At an advanced-practice level, nursing involves comprehensive health care that encompasses the responsibility and accountability for continuity of care across the health-illness spectrum.

Nursing research is both applied and basic; it has as its core actual or potential human responses to illness, and as its goal the development of nursing science. Guided by ethical standards that consider the perspectives of the client, the health care provider, and the larger society, nursing has a social mission that encompasses the right and responsibility to provide leadership in health policy and health care to all its clients regardless of disease status, gender, race, or culture.

People who receive client-centered nursing care are complex individuals who exist in relationship to others in their family and community. This complexity of person involves biological, behavioral, emotional, sociocultural, and spiritual dimensions. Each individual reflects a unique combination of these dimensions that interact dynamically with the environment. The clients of nursing are autonomous decision makers who have certain values and knowledge about themselves that are relevant and essential to successful health care outcomes. As a result, persons have a right and a responsibility to participate collaboratively in their care with the nurse and other health professionals.

Successful nursing students are active learners who bring unique gender, cultural, and ethnic life experiences to the professional practice of nursing. Students at all levels learn relevant theory, acquire practice skills, and are socialized into the profession of nursing. Increasing levels of complexity and sophistication of learning and socialization are expected of students in the different programs. Whether at the beginning practice, advanced practice, or scholar level, nursing students learn to apply knowledge, skills, and professional attitudes in their practice that may include education, administration, and research. While students have the right and responsibility to participate in their own learning, faculty members have the right and responsibility to structure the teaching/learning environment to facilitate learning. Individual academic counseling and a variety of one-on-one, small-group, and interactive learning formats assist students to meet program and individual learning goals.

## Undergraduate Admission

New undergraduate students are admitted in fall quarter only. BS (Prelicensure) freshman students are admitted at the freshman level, and transfer students are admitted at the sophomore level. See Nursing prelicensure [Entry to the](#)

### Degree Requirements

#### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

#### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Quantitative Reasoning
6. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

#### Major Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or department requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

**Major** in Curricula and Courses for additional admission requirements.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and major requirements for award of a Bachelor of Science degree.

### University Requirements

The University of California has two requirements that undergraduate students must satisfy in order to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. See [Degree Requirements](#) in Undergraduate Study for details.

Students enrolled in English Composition 1A, 1B, and 2I must take each course for a letter grade.

### School Requirements

There are six requirements that must be satisfied for award of a degree.

### Unit Requirement

Students must complete with a passing grade a minimum of 180 units. At least 83 of the 180 units must be upper-division courses numbered 100 through 199. A maximum of 216 units

is permitted. Students with advanced placement or international baccalaureate credit may exceed the unit maximum by the amount of that credit.

## Scholarship Requirement

A 2.0 (C) grade-point average is required in all work attempted at the University of California, exclusive of courses in UCLA Extension and those graded Passed/Not Passed. A 2.0 (C) grade-point average is also required in all upper-division courses in the major taken at the University of California, as well as in all courses applied toward the general education and UC requirements. Each required nursing course in the school must be completed with a C or better grade (a C– grade is not acceptable). Elective courses may be taken on a **Passed/Not Passed** basis with prior approval, according to the policy stated in Policies and Regulations.

## Academic Residence Requirement

Students are in residence while enrolled and attending classes at UCLA with a declared major in the School of Nursing, and must complete all units in the junior and senior years in residence at the school.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirement.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Writing II. Two courses in English composition are required for graduation. Both courses must be taken for letter grades, and students must receive a grade of C or better in each (a C– grade is not acceptable).

### Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be

passed with a C or better grade (a C– or Passed grade is not acceptable).

Qualifying examination scores and courses are determined by the school Faculty Executive Committee.

### Writing II

The Writing II requirement must be satisfied within seven terms of enrollment by completing one course from a faculty-approved list of **Writing II courses** and available in the Student Affairs Office; see the Registrar's **Writing II requirement** web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses also approved for general education credit may fulfill the relevant general education foundational area.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I and Writing II requirements. No transfer student is admitted to the school without completing, with a C or better grade (C– grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

## Quantitative Reasoning Requirement

Students must demonstrate basic skills in quantitative reasoning. The requirement may be satisfied by completing one approved UCLA course (see list below) or an equivalent course within the first seven terms of enrollment. The course must be taken for a letter grade, and students must receive a C or better grade (a C– grade is not acceptable).

The requirement may also be satisfied by achieving an SAT Reasoning Test Mathematics Section score of 600 or higher or an SAT Subject Test in Mathematics score of 550 or higher. Approved UCLA courses and examinations, and qualifying scores, are determined by the school Student Affairs Committee. Approved courses are listed below.

If approved for general education (GE) credit, applicable courses may also fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the quantitative reasoning requirement. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level quantitative reasoning course that Undergraduate Admission accepts as equivalent to those approved by the Faculty Executive Committee. Approved courses include

### General Education Requirements

#### Foundations of the Arts and Humanities

Literary and Cultural Analysis . . . . . 1 course  
 Philosophical and Linguistic Analysis . . . . . 1 course  
 Visual and Performance Arts Analysis and Practice  
 course  
 Total = 15 units minimum

#### Foundations of Society and Culture

Historical Analysis . . . . . 1 course  
 Social Analysis . . . . . 1 course  
 Third course from either subgroup . . . . . 1 course  
 Total = 15 units minimum

#### Foundations of Scientific Inquiry

Life Sciences . . . . . 2 courses  
 Physical Sciences . . . . . 2 courses  
 Total = 18 units minimum

#### Total GE . . . . . 10 courses/48 units minimum

One of the 10 courses may be a GE-approved Writing II course in an appropriate foundational area selected from a list published in the Schedule of Classes and available in the Student Affairs Office.

Preparation for the major courses may overlap with GE foundation courses.

- Biostatistics 100A, 100B
- Life Sciences 20, 30A, 30B, 40
- Mathematics 3A, 31A, 31AL
- Philosophy 31
- Political Science 6, 6R
- Program in Computing 10A, 10B, 10C
- Public Affairs 60
- Statistics 10, 12, 13

## General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

## Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Ten courses (48 units minimum) are required. A course taken to meet the Writing II requirement may also be applied toward a GE requirement. Preparation for the major courses may overlap with the foundation courses.

Students must meet with the student affairs officer in the Student Affairs Office to determine the applicability of GE cluster courses toward Writing II or GE requirements.

Courses listed in more than one category can fulfill GE requirements in only one of the categories.

### Foundations of the Arts and Humanities

Three 5-unit courses, one from each subgroup:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. The courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

### Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated. Because communication skills are essential in the nursing profession, Communication 10 is recommended for this foundational area.

## Foundations of Scientific Inquiry

Four courses, two from each subgroup:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science.

### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, consult with an academic counselor or see the [master list](#).

## Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges must fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Because of course sequencing and the rigor of the program, students must fulfill the general education requirements prior to transfer.

Additional requirements are listed under [Admission](#) and [Preparation for the Major](#) in Curricula and Courses.

## Major Requirements

There are two types of requirements that must be satisfied for award of a degree: preparation for the major and the major. See Nursing prelicensure major [Requirements](#) in Curricula and Courses for details.

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

## Study List

The presentation of study lists by the students and their acceptance by the school evidences an obligation on the part of the students to faithfully perform the designated work to the best of their ability. Withdrawal from, or neglect of, any course entered on the study list—or a change in program could lead to a delay in degree completion.

Students are expected to follow the course sequence specified for their program. After the first term, they may petition to carry a study list exceeding 20 units, provided they have an overall grade-point average of 3.0 (B) or better and have attained at least a 3.0 (B) grade-point average in the preceding term with all courses passed.

## Minimum Progress

Students are expected to complete satisfactorily at least 36 units during any three consecutive terms in residence; they are placed on probation if they fail to pass these units. Students are subject to dismissal if they fail to pass at least 32 units in three consecutive regular terms in residence.

## Concurrent Enrollment

Enrollment at a non-UC institution or UCLA Extension while enrolled at UCLA is not permitted except in extraordinary circumstances. No credit is given for courses taken concurrently elsewhere without the approval of the school.

## Credit Limitations

The following credit limitations apply to all undergraduate students enrolled in the school:

### Advanced Placement Examinations

Credit earned through the College Board Advanced Placement (AP) Examinations may not be applied toward the general education requirements. Portions of AP Examination credit may be evaluated by corresponding UCLA course numbers (e.g., History 1C). If students take the equivalent UCLA course, unit credit for such duplication is deducted before graduation. See the school [AP table](#) for UCLA course equivalents.

## Counseling Services

The school gives direction and furnishes information to interested potential applicants to the BS program through admissions information sessions. The schedule for these sessions, program information, and applications are available on the [school website](#).

On entry, students are assigned a faculty adviser to aid in planning their total program. Advisers and student affairs



officers continue meeting with students each term to evaluate progress, identify academic and personal needs and match them with available school and UCLA resources, confirm UC and course requirements, and maximize the students' abilities to reach educational and professional goals. Due to the heavy course load that school programs require, students are advised against working full time.

## Honors

Undergraduate students who achieve scholastic distinction may qualify for the following honors:

### Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.915 grade-point average (GPA) in any one term, with at least 12 letter-graded units. The minimum GPA required is subject to change on an annual basis. Students are not eligible for Dean's Honors in any given term if they receive an Incomplete or a Not Passed (NP) grade. Dean's Honors are automatically recorded on the transcript for the appropriate term.

### Latin Honors

Students who have achieved scholastic distinction may be awarded the bachelor's degree with Latin honors. To be eligible, students must have completed 98 or more units for a letter grade at the University of California and must have attained an overall grade-point average at graduation that places them in the top 20 percent of the school graduates (GPA of 3.915 or better) for *cum laude*, the top 10 percent (GPA of 3.965 or better) for *magna cum laude*, or the top five percent (GPA of 3.985 or better) for *summa cum laude*. Coursework taken on the Education Abroad Program is applied toward Latin honors at graduation. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year (fall, winter, spring, summer) determine student eligibility. Students should consult their Degree Audits, or the Registrar's [honors](#) web page, for the most current calculations of Latin honors.

## Graduate Study

The Master of Science in Nursing (MSN) degree program offers prelicensure and postlicensure options. The master's entry clinical nurse (MECN)/prelicensure program is designed for students with a bachelor's degree in another discipline who wish to become registered nurses. The advanced practice registered nurse (APRN)/postlicensure program is for registered nurses with a bachelor's degree in

nursing who wish to prepare for an advanced practice role, such as nurse practitioner or clinical nurse specialist.

The PhD program, which includes an en-route MS option, prepares scholars who do original research, generate new theories, and build the scientific basis for professional nursing practice. Research is both basic and applied.

The DNP program prepares nurses who are currently functioning at an advanced level of practice as nurse practitioners, clinical nurse specialists, or nurse administrators. Leadership, health system knowledge, quality, and health care policy are critical content emphasized in the curriculum. The DNP degree is designed to meet the dynamic needs of the national health care system to improve quality of care, promote patient safety, and reduce cost.

## Admission

Detailed information about the graduate academic programs is included in [program requirements for UCLA graduate degrees](#).

For information on proficiency in English requirements for international graduate students, see [Graduate Admission](#) in Graduate Study.

## Degree Requirements

For complete degree requirements, see [program requirements for UCLA graduate degrees](#).

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# School of Theater, Film, and Television

Brian E. Kite, MFA, *Interim Dean*

[School of Theater, Film, and Television](#)

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[Information e-mail](#)

The UCLA School of Theater, Film, and Television consists of the Department of [Theater](#) and the Department of [Film, Television, and Digital Media](#). Both are recognized national centers for higher education in production and performance as well as history, theory, and criticism.

Whether exploring the ancient and sacred roots of theater or the latest secular rituals enacted by popular film, creating a dramatic character for the bare stage or a dramatic narrative on screen, writing scripts or scholarly articles, or making digital movies or designing websites, all students in the school study both the aesthetics and cultural significance of theater, film, and television.

Through an intensive multidisciplinary curriculum, the school defines the inherent differences of theater, film, television, and new media; affirms their similarities; and encourages their interaction. As expressive art forms, modes of communication, and cultural interventions, theater, film and television, and digital media have in common the ability and power to reflect and shape perception of a complex, diverse, and ever-changing world. As artists and scholars, faculty believe that the school has an obligation to reflect on this power and to use it responsibly.

Situated in the diverse and culturally rich environment of Los Angeles—and drawing on the many resources of the campus at large (including the [Center for the Art of Performance](#) at UCLA, [Geffen Playhouse](#), and UCLA [Film and Television Archive](#))—the school offers the ideal setting for students to engage in the study and practice of art forms essential to a healthy and dynamic society.

## Departments and Programs

The Theater Department and the Film, Television, and Digital Media Department are essential components of the rich intellectual, cultural, and professional life of UCLA. Depending on the degree involved, school programs are either strongly professional in nature, or oriented toward advanced scholarly study and research in an atmosphere that recognizes and often draws on studio practice.

Students in undergraduate courses receive a broadly based, liberal arts education within the context of either theater or film and television.

The Master of Fine Arts (MFA) degree programs prepare talented and highly motivated students for careers in the worlds of theater, film, television, and digital production. The MA and PhD programs engage students in critical study and research of these media, including their history, aesthetics, and theory; and they prepare students for advanced research within the context of college and university teaching, as well as for writing and research in a variety of media-related professions.

In the [Theater](#) Department, approximately 300 undergraduate and 80 graduate students interact with over 18 faculty members, outstanding guests of national and international standing, and a professional staff of 35 in an exciting artistic community of theater production and study. The theater and performance studies program offers PhD degrees for advanced theater and performance. Resources include four Macgowan Hall complex theaters with the technologies needed for creation, control, and integration of scenery, lighting, and sound. Areas of emphasis in the Master of Fine Arts program include acting, design, directing, and playwriting.

The [Film, Television, and Digital Media](#) Department includes both production and critical studies programs, with approximately 275 graduate and 100 undergraduate students. Its 23 faculty members include leading scholars as well as members of the Los Angeles and international film and television professional communities. In production, graduate specializations are offered in the areas of film and television production, screenwriting, animation, and producing. The cinema and media studies program offers MA and PhD degrees for advanced scholarly study of film, television, and digital media. Department resources in Melnitz Hall include three sound stages; three television studios; extensive editing, scoring, and viewing facilities; a complete animation laboratory for traditional, stop-motion, and computer-generated animation; and a laboratory and research facility for digital media.

The MA and PhD programs are supported by UCLA library collections and the UCLA [Film and Television Archive](#), the largest in the U.S. outside the Library of Congress. This archive forms a unique and priceless resource for research and classroom instruction. MA and PhD faculty members and students also participate in various campus organized research units.

## Teaching Credentials

Students interested in obtaining instructional credentials for California elementary and secondary schools should contact the [Teacher Education Program](#), 1009 Moore Hall.

## Degrees

The School of Theater, Film, and Television offers the following degrees and undergraduate minors:

- Film and Television BA, MA, MFA, CPhil, PhD
- Individual Field BA
- Theater BA, MFA
- Theater and Performance Studies CPhil, PhD

## Undergraduate Minors

- Film, Television, and Digital Media
- Theater

## Undergraduate Admission

In addition to the UC undergraduate application, departments require applicants to submit additional supporting materials. Information on departmental requirements is available on the [school admissions](#) web page.

### Degree Requirements

#### University Requirements

1. Entry-Level Writing or English as a Second Language
2. American History and Institutions

#### School Requirements

1. Unit
2. Scholarship
3. Academic Residence
4. Writing Requirement
  - Writing I
  - Writing II
5. Foreign Language
6. Upper-Division Nonmajor Courses
7. General Education
  - Foundations of Arts and Humanities
  - Foundations of Society and Culture
  - Foundations of Scientific Inquiry

#### Department Requirements

1. Preparation for the Major
2. The Major

Courses that do not satisfy specific UC, school, or department requirements are referred to as electives and can be used to meet the minimum unit requirement for graduation.

## Undergraduate Degree Requirements

Students must satisfy UC requirements, school requirements, and department requirements for a Bachelor of Arts degree.

## University Requirements

The University of California has two requirements that undergraduate students must satisfy in order to graduate: Entry-Level Writing or English as a Second Language, and American History and Institutions. See [Degree Requirements](#) in Undergraduate Study for details.

Students enrolled in English Composition 1A, 1B, and 2I must take each course for a letter grade.

## School Requirements

There are seven requirements that must be satisfied for award of a degree.

## Unit Requirement

Students must satisfactorily complete for credit a minimum of 180 units for the bachelor's degree. At least 64 of the 180 units must be upper-division courses numbered 100 through 199. A maximum of 216 units is permitted. Students with Advanced Placement Examination or International Bac-

calaureate Examination (transfer) credit may exceed the unit maximum by the amount of that credit.

## Scholarship Requirement

Students must earn at least a 2.0 (C) grade-point average in all courses undertaken at the University of California for receipt of the bachelor's degree, and in all upper-division courses in the major, and in all courses applied toward the general education requirements.

## Academic Residence Requirement

Students are in residence while enrolled and attending classes at UCLA with a declared major in the School of Theater, Film, and Television. Of the last 45 units completed for the bachelor's degree, 35 must be earned in residence at the school. No more than 18 of the 35 units may be completed in UCLA summer sessions.

Courses offered by UCLA Extension may not be applied toward any part of the residence requirements.

## Writing Requirement

Students must complete the UC Entry-Level Writing or English as a Second Language (ESL) requirement prior to completing the school writing requirement.

Students admitted to the school are required to complete a two-term writing requirement—Writing I and Writing II. Two courses in English composition are required for graduation. Both courses must be taken for a letter grade, and students must receive a C or better grade in each (a C– grade is not acceptable).

### Writing I

The Writing I requirement must be satisfied within the first three terms of enrollment by completing English Composition 3, 3D, 3DX, 3E, or 3SL with a C or better grade (a C– or Passed grade is not acceptable).

The Writing I requirement may also be satisfied by scoring 4 or 5 on one of the College Board Advanced Placement Examinations in English; completing a course equivalent to English Composition 3 with a C or better grade (a C– or Passed grade is not acceptable) taken at another institution; or scoring 5, 6, or 7 on an International Baccalaureate Higher Level Examination.

Students whose native language is not English may need to take English Composition 1A, 1B, and 2I before enrolling in a Writing I course. All courses in the sequence must be passed with a C or better grade (a C– or Passed grade is not acceptable).

## Writing II

The Writing II requirement must be satisfied within the first six terms of enrollment by completing one course from a faculty-approved list of [Writing II courses](#); see the Registrar's [Writing II requirement](#) web page for details. Courses that satisfy the requirement are denoted by a W suffix and are **impacted**. The course must be completed with a C or better grade (a C– or Passed grade is not acceptable).

Applicable Writing II courses may also fulfill the upper-division nonmajor requirement and, if approved for general education (GE) credit, may also fulfill a GE requirement.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the Writing I and Writing II requirements. No transfer student is admitted to the school without completing, with a C or better grade (a C– grade is not acceptable), a college-level writing course that Undergraduate Admission accepts as equivalent to English Composition 3.

## Foreign Language Requirement

Students may meet the foreign language requirement by scoring 3, 4, or 5 on the College Board Advanced Placement (AP) foreign language examination in Chinese, French, German, Italian, Japanese, or Spanish, or scoring 4 or 5 on the AP foreign language examination in Latin; presenting a UCLA foreign language proficiency examination score indicating competency through level three; or completing one college-level foreign language course equivalent to level three or above at UCLA with a grade of Passed or C or better.

Transfer students with 90 or more units who have completed the Intersegmental General Education Transfer Curriculum (IGETC) will have satisfied the foreign language requirement.

International students may petition to use an advanced course in their native language for this requirement. Students whose entire secondary education has been completed in a language other than English may petition to be exempt from the foreign language requirement.

Courses that may be used to fulfill this requirement are published on the Registrar's [foreign language requirement](#) web page.

## Upper-Division Nonmajor Requirement

Students must complete at least three upper-division nonmajor courses (100-level) for a minimum of 12 units. Graduate (200-level) courses may not be applied toward this requirement.

A course used to satisfy the upper-division nonmajor requirement may also be used to satisfy the Writing II requirement.

A course used to satisfy the upper-division nonmajor requirement may not also be applied toward a foundation area in general education.

## General Education Requirements

**General education** (GE) is more than a checklist of required courses. It is a program of study that reveals to students the ways that research scholars in the arts, humanities, social sciences, and natural sciences create and evaluate new knowledge; introduces students to the important ideas and themes of human cultures; fosters appreciation for the many perspectives and diverse voices that may be heard in a democratic society; and develops the intellectual skills that give students the dexterity they need to function in a rapidly changing world.

This entails the ability to make critical and logical assessments of information, both traditional and digital; deliver reasoned and persuasive arguments; and identify, acquire, and use the knowledge necessary to solve problems.

### Foundations of Knowledge

General education courses are grouped into three foundational areas: Foundations of the Arts and Humanities, Foundations of Society and Culture, and Foundations of Scientific Inquiry.

Ten courses (48 units minimum) are required. GE-approved Writing II courses may fulfill an appropriate foundational area. See the foundational area descriptions below for a breakdown of courses required.

Courses listed in more than one category can fulfill GE requirements in only one of the categories. A course used to satisfy a major requirement may not also be applied toward a GE requirement.

Students who successfully complete a year-long GE cluster series fulfill the Writing II requirement and complete 40 percent of their general education requirements.

### Foundations of the Arts and Humanities

Five 5-unit courses, with no more than two from any one subgroup:

- Literary and Cultural Analysis
- Philosophical and Linguistic Analysis
- Visual and Performance Arts Analysis and Practice

Courses in this area supply perspectives and intellectual skills necessary to comprehend and think critically about our situation in the world as human beings. In particular, courses furnish the basic means to appreciate and evaluate

### General Education Requirements

#### Foundations of the Arts and Humanities

Literary and Cultural Analysis  
 Philosophical and Linguistic Analysis  
 Visual and Performance Arts Analysis and  
 Practice ..... 5 courses  
 No more than two courses from any one subgroup.  
 Total = 25 units minimum

#### Foundations of Society and Culture

Historical Analysis ..... 1 course  
 Social Analysis ..... 1 course  
 Third course from either subgroup ..... 1 course  
 Total = 15 units minimum

#### Foundations of Scientific Inquiry

Life Sciences ..... 1 course  
 Physical Sciences ..... 1 course  
 Total = 8 units minimum

#### Total GE ..... 10 courses/48 units minimum

A course taken to meet the Writing II requirement may not also be applied toward a GE requirement.

the ongoing efforts of humans to explain, translate, and transform their diverse experiences of the world through such media as language, literature, philosophical systems, images, sounds, and performances. The courses introduce students to the historical development and fundamental intellectual and ethical issues associated with the arts and humanities and may also investigate the complex relations between artistic and humanistic expression and other facets of society and culture.

#### Foundations of Society and Culture

Three 5-unit courses, one from each subgroup and a third course from either subgroup:

- Historical Analysis
- Social Analysis

Courses in this area introduce students to the ways in which humans organize, structure, rationalize, and govern their diverse societies and cultures over time. Courses focus on a particular historical question, societal problem, or topic of political and economic concern in an effort to demonstrate how issues are objectified for study, how data is collected and analyzed, and how new understandings of social phenomena are achieved and evaluated.

#### Foundations of Scientific Inquiry

Two courses (8 units minimum), one from each subgroup:

- Life Sciences
- Physical Sciences

Courses in this area ensure that students gain a fundamental understanding of how scientists formulate and answer questions about the operation of both the physical and biological world. Courses also deal with some of the most important issues, developments, and methodologies in contemporary science, addressing such topics as the origin of the universe, environmental degradation, and the decoding of the human genome. Through lectures, laboratory experiences, writing, and intensive discussions, students consider the important roles played by the laws of physics and chemistry in society, biology, Earth and environmental sciences, and astrophysics and cosmology.

#### Foundations Course Lists

Creating and maintaining a general education curriculum is a dynamic process; consequently, courses are frequently added to the list. For the most current list of approved courses that satisfy the Foundations of Knowledge GE plan, consult with an academic counselor or see the [master list](#).

#### Reciprocity with Other UC Campuses

Students who transfer to UCLA from other UC campuses or who change their major from the College or another UCLA school and have met all GE requirements prior to attending UCLA or changing their UCLA major are not required to complete the School of Theater, Film, and Television GE requirements. Written verification from the dean at the other UC campus or UCLA College or school is required. Verification letters should be sent to UCLA School of Theater, Film, and Television, Director of Student Services, Box 951622, Los Angeles, CA 90095-1622.

#### Intersegmental General Education Transfer Curriculum

Transfer students from California community colleges have the option to fulfill UCLA lower-division GE requirements by completing the Intersegmental General Education Transfer Curriculum (IGETC) prior to transfer. The curriculum consists of a series of subject areas and types of courses that have been agreed on by the University of California and the California community colleges. Although GE courses are degree requirements rather than admission requirements, students are advised to fulfill them prior to transfer. The IGETC significantly eases the transfer process, as all UCLA GE requirements are fulfilled when students complete the IGETC courses. Students who select the IGETC must complete it entirely before enrolling at UCLA. Otherwise, they must fulfill the School of Theater, Film, and Television GE requirements.

#### Department Requirements

Departments generally set two types of requirements that must be satisfied for award of a degree: preparation for the



major (lower-division courses) and the major (upper-division courses). Preparation for the major courses should be completed before beginning upper-division work.

## Preparation for the Major

A major requires completion of a set of courses known as preparation for the major, which should be completed before upper-division work is undertaken. Each department sets its own preparation for the major requirements; see [Film, Television, and Digital Media](#) or [Theater](#) in Curricula and Courses.

## The Major

A major is composed of no fewer than 56 units, including at least 36 units of upper-division courses.

Students must complete their major with a scholarship grade-point average of at least 2.0 (C) in all courses in order to remain in the major. Each course in the school must be taken for a letter grade.

As changes in major requirements occur, students are expected to satisfy the new requirements insofar as possible. Hardship cases should be discussed with the department adviser, and petitions for adjustments should be submitted to the dean of the school when necessary.

Any department offering a major may require a general final examination.

## Double Majors

Double majors in the School of Theater, Film, and Television and other academic units are not permitted.

## Policies and Regulations

Degree requirements are subject to policies and regulations, including the following:

### Student Responsibility

Students should take advantage of academic support resources, but they are ultimately responsible for keeping informed of and complying with the rules, regulations, and policies affecting their academic standing.

### Study List

The study list is a record of classes that a student is taking for a particular term. Each term the study list must include from 12 to 19 units. The school has no provision for part-time enrollment. After the first term, students may petition to enroll in more than 19 units (up to 22 units maximum) if they have an overall grade-point average of 3.0 (B) or better and have attained at least a 3.0 (B) grade-point average in the

preceding term with all courses passed. Excess units petitions must be filed and approved by the Student Services Office no later than the end of the third week of instruction.

First-term transfer students from any other UC campus may carry excess units on the same basis as students who have completed one or more terms at UCLA; however, they are not encouraged to do so.

## Minimum Progress

During a regular term of enrollment, undergraduate students are required to enroll in a minimum of 12 units.

Students are expected to complete satisfactorily at least 36 units during any three consecutive terms in residence; they are placed on probation if they fail to pass these units. Students are subject to dismissal if they fail to pass at least 32 units in three consecutive regular terms in residence.

## Changing a Major

Students in good academic standing who wish to change their major may petition to do so, provided they can complete the new major within the 216-unit limit. Petitions must be submitted to and approved by the department or committee in charge of the new major. Admission to certain majors may be closed or restricted; changes are normally not permitted if students are on probation or have begun their last term.

Students in the Theater major are not allowed to change their major to Film and Television at the end of their sophomore year.

## Concurrent Enrollment

Enrollment at a non-UC institution or UCLA Extension while enrolled at UCLA is not permitted except in extraordinary circumstances. No credit is given for courses taken concurrently elsewhere without the approval of the school.

## Credit Limitations

The following credit limitations apply to all undergraduate students enrolled in the school:

### Advanced Placement Examinations

Credit earned through the College Board Advanced Placement (AP) Examinations may be applied toward certain UC/school requirements. Consult with a counselor in the Student Services Office to determine applicable credit. Portions of AP Examination credit may be evaluated by corresponding UCLA course numbers. If students take the equivalent UCLA course, unit credit for such duplication is

deducted before graduation. See the school [AP table](#) for UCLA course equivalents.

## Graduate Courses

Undergraduate students who wish to take graduate courses (200 level) for credit toward the bachelor's degree must petition for advance approval of the department chair and the dean of the school, and must meet specific qualifications. Courses numbered in the 300, 400, and 500 series are not open for credit to undergraduate students.

## UCLA Extension

Extension courses with the prefix X on those numbered in the 1 through 199, 200, 300, 400, or 800 series may not be applied toward the degree.

## Upper-Division Tutorials

Credit for upper-division tutorials numbered 195 through 199 is limited to a maximum of 8 units in a single term, and a maximum of 32 units total for a letter grade.

## Academic Advising Services

The school offers advising, program planning in the major and general education requirements, and individual meetings with departmental counselors, including a yearly degree check. Prior to enrollment in classes, each new student is assigned to a counselor in the major department. For additional counseling information, contact the [Student Services Office](#), 103 East Melnitz Building.

## Honors

Undergraduate students who achieve scholastic distinction may qualify for the following honors and programs:

### Dean's Honors

The Dean's Honors list recognizes high scholastic achievement in any one term. The following criteria are used to note Dean's Honors on student records: a 3.937 grade-point average (GPA) in any one term, with at least 12 letter-graded units. The minimum GPA required is subject to change on an annual basis. Dean's Honors are automatically recorded on the transcript for the appropriate term.

### Latin Honors

Students who have achieved scholastic distinction may be awarded the bachelor's degree with Latin honors. To be

eligible, students must have completed 90 or more units for a letter grade at the University of California and must have attained an overall grade-point average (GPA) at graduation that places them in the top 20 percent of the school graduates (GPA of 3.937 or better) for *cum laude*, the top 10 percent (GPA of 3.972 or better) for *magna cum laude*, or the top five percent (GPA of 3.987 or better) for *summa cum laude*. Coursework taken on the Education Abroad Program is applied toward Latin honors at graduation. The minimum GPAs required are subject to change on an annual basis. Required GPAs in effect in the graduating year (fall, winter, spring, summer) determine student eligibility. Students should consult their Degree Audits, or the Registrar's [honors](#) web page, for the most current calculations of Latin honors.

## Graduate Study

The advanced degree programs offer graduate students with unique research opportunities when combined with special resources such as the Young Research Library, UCLA Film and Television Archive, Geffen Playhouse, Arts Library special collections, and UCLA exhibit and performance venues.

Fellowships, grants, and assistantships are available through the dean of the Division of Graduate Education. Student scholarship awards are available through the School of Theater, Film, and Television.

## Admission

In addition to requiring that applicants hold a bachelor's degree from an accredited U.S. institution or an equivalent degree of professional title from an international institution, each department in the school has limitations and additional requirements. Detailed information can be found in [program requirements for UCLA graduate degrees](#).

For information on proficiency in English requirements for international graduate students, see [Graduate Admission](#) in Graduate Study.

## Degree Requirements

Requirements to fulfill each degree objective vary according to the degree and the department. For complete degree requirements, see [program requirements for UCLA graduate degrees](#).

# Curricula and Courses

## COURSE INFORMATION

Departments and programs are listed alphabetically, with the College or school administering the program identified in the program heading. Curricula and courses are listed under each program. Every effort has been made to ensure the accuracy of the information presented. However, all courses, course descriptions, instructor designations, and curricular degree requirements described herein are subject to change or deletion without notice. Changes to course descriptions are available at the Registrar's [course descriptions](#) web page. For current class offerings by term, see the [Schedule of Classes](#).

For complete graduate degree requirements, see [program requirements for UCLA graduate degrees](#).

## Undergraduate Course Numbering

Undergraduate courses are classified as lower division and upper division. **Lower-division courses numbered 1–99** are often surveys offering preliminary introduction to the subject field. They are designed primarily for freshmen and sophomores, though upper-division students may enroll for unit and grade credit. Lower-division courses may not be applied toward graduate degrees.

**Upper-division courses numbered 100–199** are open to all students who have met the requisites stated in department requirements or the course description. Preparation generally includes at least one lower-division course in the subject or two years of college work. With approval of the major department, graduate students may take 100-series courses toward satisfaction of master's degree requirements.

## Undergraduate Seminars and Tutorials

**Fiat Lux freshman seminars (numbered 19)** are taught by faculty in areas of their expertise. They introduce first-years to topics of intellectual importance and enable them to participate in critical discussion of these topics with a small group of peers. The seminar series takes its name from the motto of the University of California: *Fiat Lux—Let There be Light!*

**Sophomore seminars (numbered 88)** are department-sponsored courses designed to provide sophomores with the opportunity to participate in small seminars to enhance writing, verbal, and analytical skills.

**Honors seminars and tutorials (numbered 89/189 and 89HC/189HC)** are primarily designed for students in the College Honors Program. They are adjunct to lecture courses and explore lecture topics in more depth through supplemental readings, papers, or other activities.

**Student Research Program tutorials (numbered 99)** offer students entry-level research experiences. Students serve as apprentices working with an individual faculty member or in a research group. Students are graded on a Passed/Not Passed (P/NP) basis.

**Upper-division seminars (numbered 190–194)** are small seminars with between 15 and 20 students that focus on research practice or issues. Many are designed to be taken along with a tutorial course in the 195–199 series.

**Upper-division tutorials (numbered 195–199)** offer advanced opportunities for research through faculty-supervised internships and apprenticeships as well as honors research, directed research, and senior projects. Courses are structured by the instructor and student at the time they are initiated and are open to juniors (with a minimum 3.0 grade-point average in the major field), seniors, and graduate students. To enroll, students submit a contract (through MyUCLA) and have it approved by both the instructor and department chair.

**Note:** For current course descriptions, see the Registrar's [course descriptions](#) web page.

## Graduate Course Numbering

**Graduate courses numbered 200–299** are generally open only to graduate students who have completed basic undergraduate courses in the subject. Courses and seminars in the 200 series can fulfill the minimum graduate course requirement for any advanced degree.

With departmental and instructor consent, and subject to requirements in the appropriate College or school, undergraduate students may enroll in 200-series courses for unit credit toward the bachelor's degree. If students take a graduate course as an undergraduate, they may not apply that same course later toward a higher degree.

**Graduate courses numbered 300–399** are highly specialized teacher-training courses that are not applicable toward UC minimum requirements for graduate degrees. They are acceptable toward the bachelor's degree only at the discretion of the individual College or school.

**Graduate courses numbered 400–499** are designed for professional programs leading to graduate degrees other than the MA, MS, and PhD. These courses may not be used to satisfy minimum graduate course requirements for the MA or MS degree but may apply as electives.

**Individual study and research courses numbered 500–599** are reserved for advanced study and are not open to undergraduate students. Courses are numbered as follows: 595/596, directed individual study or research; 597, preparation for master's comprehensive or doctoral qualifying examination; 598, master's thesis research and preparation; and 599, doctoral dissertation research and preparation.

Courses numbered 501 are not individual study and research but are cooperative programs held in conjunction with USC. See individual department sections for specific limitations on 500-series courses.

**Note:** These definitions do not apply to courses in the School of Law, which maintains its own course numbering system.

## Temporary Course Offerings

Courses that are temporary in nature, such as one-term-only or one-year-only, are not in the catalog. Their descriptions can be found in the [Schedule of Classes](#).

## Concurrent and Multiple-Listed Courses

**Concurrently-scheduled courses** (identified by a capital C before the course number) are pairs of courses, usually within a single department or program, for which credit is given at two levels—undergraduate and graduate. Concurrently-scheduled courses are offered at the same time and place with the same instructor, but work levels and performance standards are evaluated differently for students at each level. (Concurrently-scheduled courses as described here should not be confused with concurrent courses offered through UCLA Extension.)

**Multiple-listed courses** (identified by a capital M before the course number) are courses offered jointly by more than one department and/or subject area. They need not have identical course numbers, but all other aspects of the course—such as title, units, requisites, format, and level—must be the same. For example, Language in Culture is offered by the Anthropology Department (Anthropology M150) and the Linguistics Department (Linguistics M146). The course is listed under both departments.

## Foreign Literature in English Translation

A [list of courses](#) offered by language and literature departments, that do not require reading knowledge of any foreign language, is available on the Registrar's website.

## UCLA Extension Courses

In general, students may not attend UCLA Extension for degree credit if they are enrolled in UCLA regular session at the same time. However, certain Extension courses (numbered 1–199), prefixed by XL or XLC in the Extension catalog, yield credit toward the bachelor's degree. For details, see [UCLA Extension](#) in Policies and Regulations. Graduate students may petition to apply up to two XLC courses toward the master's degree.

# AEROSPACE STUDIES – AIR FORCE ROTC

College of Letters and Science

218 Student Activities Center  
Box 951611  
Los Angeles, CA 90095-1611

**Aerospace Studies—Air Force ROTC**

310-825-1742

**AFROTC e-mail**

Mae-Li A. Allison, MA, *Lieutenant Colonel, Chair*

## Faculty Roster

### Professor

Mae-Li A. Allison, MA, *Lieutenant Colonel*

### Adjunct Assistant Professors

Robert V. Everhart, MA, *Major*  
Morgan B. Malone, MBV, *Captain*  
Kekaikuimauloa Nuuhiwa, BS, *Captain*

## Overview

In accordance with the National Defense Act of 1920 and with the concurrence of the Regents of the University of California, a unit of the Army Senior Division Reserve Officers' Training Corps (ROTC) was established on the Los Angeles campus of the University of California in July 1920. Navy and Air Force units were established in 1938 and 1949 respectively.

This voluntary training in the Air Force ROTC program allows students to qualify for an officer's commission in the Air Force or Space Force while completing their college education. The ROTC curricula are not considered academic majors, but ROTC courses may be taken as free electives and applied toward the total course requirements of a major. For students contracted in the Aerospace Studies Department, 36 units of aerospace studies credit may be applied toward the requirements for the bachelor's degree. The ROTC program is also available through UCLA Extension.

All three ROTC departments offer voluntary four- and three-year programs for first-years and sophomores. All have leadership laboratories that teach leadership and management skills.

All commissions are reserve commissions. Active duty obligation following commissioning varies depending on branch of service and designated career field or occupational specialty.

## Scholarships

ROTC scholarships are awarded on a competitive basis to U.S. citizens regardless of parents' income. Scholarships cover tuition, a book allowance, fees, and a tax-free monetary allowance during the academic year. **Applications for scholarships** may be obtained online or by calling 310-825-1742. Completed applications should be submitted prior to August 15 for early consideration and no later than December 1 of the year preceding college matriculation.

## Air Force ROTC Program

Air Force ROTC offers selected students the opportunity to develop those attributes essential to positions of high responsibility as commissioned officers in the U.S. Air Force or Space Force. This includes understanding Air Force history, doctrine, operating principles, and national security policies; demonstrating the ability to apply modern principles of management and human relations in the Air Force environment; and mastering of leadership theory and techniques. Students must demonstrate dedication to their assignments, willingness to accept responsibility, and the ability to think critically and communicate with clarity and precision.

## Undergraduate Study

The Air Force ROTC program is available to full-time students with at least three years of undergraduate and/or graduate study remaining and consists of one to two years of the General Military Course, or GMC (Aerospace Studies 1A, 1B, 1C, 20A, 20B, and 20C); followed by a two-year Professional Officer Course, or POC (Aerospace Studies 130A, 130B, 130C, 140A, 140B, and 140C). For students completing the program in four years, GMC participation requires one hour of academic class and two hours of leadership laboratory each week during the academic year. For students completing the program in three years, GMC participation requires taking one course from Aerospace Studies 1A, 1B, or 1C; one course from 20A, 20B, or 20C; and two hours of leadership laboratory each week during the academic year. Students incur no military obligation for GMC participation unless they qualify and accept an Air Force ROTC scholarship during or after their sophomore year.

Students who complete the GMC and wish to enter the POC attend a field training course the summer following GMC completion. There is no obligation to apply. U.S. citizenship is required. Students are selected on a competitive basis with consideration given to academic major, grade-point average, aptitude examination scores, performance during an officer board interview, and a physical fitness test. Students selected for summer field training are given meals, quarters, clothing, and travel and incidental expenses. Subjects covered at field training include junior officer training, aircraft and aircrew orientation, career orientation, survival training, base functions, Air Force environment, and physical training.

POC participation requires three hours of academic class and two hours of leadership laboratory each week during the academic year. Students enrolled in the POC incur a military obligation and are paid a monthly stipend during the academic year. Graduation and successful completion of the POC leads to a commission as a second lieutenant. Cadets then report to one of the challenging assignments in the Air Force or Space Force.

## Aerospace Studies

### Lower-Division Courses

#### Freshman Year

**A. Leadership Laboratory. (No credit)** Laboratory, three hours. Mandatory for and limited to Air Force ROTC cadets. Provides cadets with practical command and staff leadership experiences through performance of various tasks within framework of organized cadet corps. As integral part of aerospace studies curriculum, provides experiences designed to develop leadership potential and serves as orientation to active duty. P/NP grading.

**1A-1B-1C. Heritage and Values. (2-2-2)** Lecture, one hour. Introduction to U.S. Air Force. Examination of general aspects of Department of Air Force, leadership, benefits, and opportunities for officers. Foundation for becoming airmen by outlining heritage and values. Provides historical perspective through lessons on war and U.S. military, Air Force operations, principles of war, and airpower. Provides students with understanding for employment of air and space power, from institutional, doctrinal, and historical perspective. Students are introduced to Air Force way of life and gain knowledge on what it means to be airmen. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

#### Sophomore Year

**20A-20B-20C. Team and Leadership Fundamentals. (2-2-2)** Lecture, one hour. Designed to provide fundamental understanding of both leadership and team building. Cadets are taught many layers of leadership, including listening, understanding themselves, being good follower and efficient problem solving. Students apply these leadership perspectives when completing team building activities and discussing conflict management. Demonstration of basic verbal and written communication skills. P/NP or letter grading.

### Upper-Division Courses

**130A-130B-130C. Air Force Leadership Studies. (4-4-4)** Lecture, three hours. Prerequisites: courses 1A, 1B, 1C, 20A, 20B, 20C. Designed to provide cadets with leadership overview. Basic leadership skills for cadets beginning leadership role in detachment. Lessons on military relationships and rules that military members must follow when interacting with enlisted members and officers. Continuation of advanced skills and ethics training in preparation for becoming officer and supervisor. Introduction to variety of leadership topics in preparation to be effective leaders. P/NP or letter grading.

**140A-140B-140C. National Security Affairs/Preparation for Active Duty. (4-4-4)** Lecture, three hours. Prerequisites: courses 1A, 1B, 1C, 20A, 20B, 20C. Study of national security processes, regional studies, advanced leadership ethics, and Air Force doctrine. Special topics focus on military as profession, officership, military justice, civilian control of military, preparation for active duty, and current issues affecting military professionalism. Within this structure, continued emphasis on refining communication skills. P/NP or letter grading.

**197. Individual Studies in Aerospace Studies. (2 or 4)** Tutorial, three hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.



# AFRICAN AMERICAN STUDIES

*College of Letters and Science*

1308 Rolfe Hall  
Box 951545  
Los Angeles, CA 90095-1545

**African American Studies**

310-825-9821

**Department e-mail**

Cheryl L. Keyes, PhD, *Chair*

## Faculty Roster

### Professors

Walter R. Allen, PhD (*Allan Murray Cartter Professor of Higher Education*)  
Devon W. Carbado, JD (*Honorable Harry Pregerson Endowed Professor of Law*)  
Yogita Goyal, PhD  
Cheryl I. Harris, JD (*Rosalinde and Arthur Gilbert Foundation Endowed Professor of Civil Rights and Civil Liberties*)  
Tyrone C. Howard, PhD (*Pritzker Family Endowed Professor of Education to Strengthen Families*)  
Darnell M. Hunt, PhD  
Marcus A. Hunter, PhD  
Robin D.G. Kelley, PhD (*Gary B. Nash Endowed Professor of U.S. History*)  
Cheryl L. Keyes, PhD  
Kathleen A. Lytle Hernández, PhD (*Thomas E. Lifka Professor of History*)  
Safiya U. Noble, PhD  
Jemima Pierre, PhD  
Brenda Stevenson, PhD (*Nickoll Family Endowed Professor of History*)  
Dominic A. Taylor, MFA  
Sherod Thaxton, JD, PhD  
Richard A. Yarborough, PhD

### Associate Professors

Bryonn R. Bain, JD  
Scot D. Brown, PhD  
Lorrie A. Frasure, PhD  
Sarah Haley, PhD  
Peter J. Hudson, PhD  
Gaye T. Johnson, PhD  
Terence D. Keel, PhD  
Kyle T. Mays, PhD  
Uri G. McMillan, PhD  
Caroline A. Streeter, PhD  
Courtney S. Thomas Tobin  
Alden H. Young, PhD

### Assistant Professors

Justin P. Dunnavant, PhD  
Ugo F. Edu, PhD  
Sobukwe O. Odinga, PhD

## Overview

The Department of African American Studies offers a Bachelor of Arts (BA) degree, an undergraduate African American Studies minor, a Master of Arts (MA) degree, and a concurrent degree program (African American Studies MA/Juris Doctor). A major or minor in this field

offers a broadening of cultural experiences and perspectives for those seeking more information about African Americans and the African diaspora. Career-wise, all students profit from African American studies courses in an era when employers and academic institutions are actively seeking those with multicultural and interdisciplinary skills and backgrounds.

## Mission

The fundamental goal of the African American Studies curriculum is to offer students a comprehensive and multidisciplinary introduction to the crucial sociocultural and social justice issues facing African Americans and their counterparts in other areas of the African diaspora today. The curriculum is designed to meet this goal in two primary ways. First, it offers students an interdisciplinary exposure to particular features of the African American experience. Core courses offer an in-depth understanding of historical, anthropological, sociological, psychological, economic, and political aspects of African America. The curriculum also offers opportunities to study the literary, musical, and artistic heritage of peoples of African descent. Second, students analyze key issues through additional courses that bring to bear concepts, theories, and methods of traditional academic disciplines in areas such as cultural analysis and production, social justice, and public policy. Students may also do individualized study with a professor and/or an internship for course credit.

## Undergraduate Major

### African American Studies BA

Students are encouraged to engage in a culminating activity, such as an internship, independent study, honors thesis, service learning course, Center for American Politics and Public Policy program, University of California Center Sacramento program, Education Abroad Program, or other African American studies-related project or performance course.

### Learning Outcomes

The African American Studies major has the following learning outcomes:

- Critical understanding of key historical moments in the field
- Critical engagement with humanistic and social-scientific approaches to the study of the African American experience
- Ability to perform research and use critical writing skills
- Critical understanding of the concepts of race and racism, and their relationship to other identities such as class, gender, and sexual orientation
- Knowledge of key African American aesthetic, literary, musical, and other cultural traditions
- Knowledge of key social-scientific theories that explain and describe the African American experience

## Entry to the Major

### Admission

To be admitted to the major, students must have completed African American Studies 1, be in good standing, and formally register with the department. Students are encouraged to declare their major as early as possible and discuss their proposed course plan with the department undergraduate adviser.

### Transfer Students

Transfer applicants to the African American Studies major with 90 or more units must complete the following introductory courses if possible prior to admission to UCLA: one African American studies or civilizations of Africa course or equivalent.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* African American Studies 1, 96W, and one course selected from 2A, 2B, 2C, M5, 6, M116A, or M116B.

### The Major

*Required:* Eleven upper-division courses as follows: (1) four courses in one area of concentration; (2) four courses, two from each area, selected from the two areas not selected in (1); (3) two additional upper-division elective courses in African American studies (minimum 4 units) excluding 188SA, 188SB, 188SC, 189, 189HC, and 195; (4) one senior capstone seminar: African American Studies C191.

*Cultural Production:* M102, M103A, M103B, M103E, M104A through M104E, M107, 108, M109, M111, CM135A, CM135B, M150D, M170A, M170B, M179A.

*Political Economy:* 105C, 105D, 106A, 110A, 110B, 110C, CM110D, M115, M142, M144, M148, M154C, M154D, M158A, M159P, M167, 175, 176, M178, 188B, 195.

*Power and Ideology:* 105A through 105D, 106A, 106B, 110B, 110C, CM113B, M114C, M120, M124, 140, M141 through M148, M154C, M154D, M158A, M158E, M159P, M172 through M178, 188B.

### Honors Program

Students must take three-quarter African American Studies 198A, 198B, 198C (independent study courses) with an approved professor who oversees the thesis requirement.

## Policies

### The Major

No more than 8 graded units of African American Studies 195, 198A, 198B, 198C, and 199 may be applied toward the major.

Students must have an overall grade-point average of 2.0 or better.



## Honors Program

African American Studies majors with grade-point averages of 3.5 or better are eligible for the honors option that requires the completion of a senior thesis under the guidance of an African American Studies faculty member. For more information, contact the undergraduate adviser in the department.

## Undergraduate Minor

### African American Studies Minor

The African American Studies minor is designed for students who wish to augment their major program of study with courses from various disciplines germane to African American studies.

### Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average), have completed 45 units, and file a petition with the African American Studies student affairs officer.

### The Minor

*Required Lower-Division Courses (9 to 10 units):* Two courses from African American Studies 1, 2A, 2B, 2C, M5, 6, M10A.

*Required Upper-Division Courses (20 to 25 units):* Five upper-division African American studies courses.

### Policies

No more than 4 graded units of African American Studies 195, 197, and 199 may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units applied toward the minor must be taken in residence at UCLA. Transfer credit for any of the above is subject to program approval; consult with the student affairs officer before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### African American Studies MA Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- African American Studies MA/Juris Doctor

## African American Studies Lower-Division Courses

**1. Introduction to Black Studies. (5)** Lecture, three hours; discussion, one hour. Introduction of methods, theories, conceptual frameworks, and key debates in black studies. Interrogation of how race structures notions of identity and meaning of blackness in relation to class, gender, and sexuality; essential role of African people in development of capitalism, liberalism, and democracy; what various disciplinary lenses and epistemologies (history, literature, sociology, geography, cultural studies, political theory, philosophy, etc.) reveal about experiences of black people in modern world. Key thinkers and ideas from across humanities and social sciences are highlighted. P/NP or letter grading.

**2A. Africa and Middle East. (4)** Lecture, three hours; discussion, one hour. Exploration of historical connections between Africa and Middle East as concepts, geographic expressions, homelands, and sites of diaspora. Examination of changing definitions and connections between Africa and Middle East from ancient world until present. Students learn how concepts have changed and are constantly changing over time. Study of how Africa and Middle East fit into alternative concepts such as ancient world, Islamic world, Muslim world, or Third World. Examination of legacies of earlier trade networks, particularly slave trade, on these regions. Examination of role countries like Egypt, situation on African continent but considered Middle Eastern, play in African-Arab or African/Middle Eastern culture. In-depth exploration of how European imperialism impacted these worlds, and how process of decolonization united them. Examination of processes of immigration and emigration across these regions. P/NP or letter grading.

**2B. Race and U.S. Military Intervention in Africa. (5)** Lecture, three hours; discussion, one hour. Survey of U.S. security policy toward Africa from Cold War to present. Emphasis on ways that notions of racial hierarchy have influenced U.S. strategic priorities, threat assessments, and military initiatives throughout Africa. Special attention to U.S. covert operations and security alliances in Africa. Examination of impact of U.S. security policies on peace, conflict, and governance in Africa. Focus on change and continuity in Black transnational responses to U.S. security initiatives in Africa, particularly during Cold War and War on Terror. P/NP or letter grading.

**2C. Black Folks Kung Fu Fightin': Black America, Martial Arts, and Popular Culture. (5)** Lecture, three hours; discussion, one hour. Exploration of longer history of Black Americans and their relationship to martial arts; who some of key players are; how Black folks' engagement with martial arts has been represented in popular culture; connections of race, class, and gender through martial arts. Analysis of history of martial arts in Black America from post-World War II era to present. Using books and articles, movies and television shows, and other popular cultural venues, students develop critical analytical skills to understand how race, gender, expressive culture, and martial arts operate together to form understanding of Black American experience. P/NP or letter grading.

**M5. Social Organization of Black Communities. (5)** (Same as Sociology M5.) Lecture, four hours; discussion, one hour; field trips. Analysis and interpretation of social organization of black communities, with focus on origins and development of black communities, competing theories and research findings, defining characteristics and contemporary issues. Letter grading.

**6. Trends in Black Intellectual Thought. (5)** Lecture, three hours; discussion, one hour. Overview of major intellectual trends that have shaped ways in which Afro-American thinkers have interpreted experiences of blacks in U.S., drawing from such fields as history, philosophy, and literature. Letter grading.

**M7A-M7B-M7C. Elementary Yoruba. (4-4-4)** (Same as International and Area Studies M7A-M7B-M7C.) Lecture, five hours. Course M7A is requisite to M7B, which is requisite to M7C. Introduction to Yoruba, one of major languages of West Africa, which is spoken widely throughout southwest Nigeria, Benin, and Togo. Coverage of basic Yoruba grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**M9A-M9B-M9C. Elementary Amharic. (4-4-4)** (Same as International and Area Studies M6A-M6B-M6C.) Lecture, five hours. Course M9A is requisite to M9B, which is requisite to M9C. Introduction to Amharic, Semitic language that is official language of Ethiopia. Coverage of basic Amharic grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**M10A. History of Africa to 1800. (5)** (Same as History M10A.) Lecture, three hours; discussion, one hour. Exploration of development of African societies from earliest times to late 18th century. P/NP or letter grading.

**M18. Leadership and Student-Initiated Retention. (2)** (Same as American Indian Studies M18, Asian American Studies M18, and Chicana/o and Central American Studies M18.) Seminar, two hours. Limited to freshmen/sophomores/first-year transfer students. Not open for credit to students with credit for course M118. Exploration of issues in retention at UCLA through lens of student-initiated and student-run programs, efforts, activities, and services. Focus on populations with historically low graduation rates targeted by Campus Retention Committee. May not be applied toward departmental major or minor elective requirements. May be repeated once for credit. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M102. Culture, Media, and Los Angeles. (6)** (Same as Asian American Studies M160 and Honors Collegium M102.) Lecture, four hours; screenings, two hours. Designed for juniors/seniors. Role of media in society and its influence on contemporary cultural environment, specifically in Los Angeles; issues of representation as they pertain to race, ethnicity, gender, and sexuality. P/NP or letter grading.

**M103A. African American Theater History: Slavery to Mid-1800s.** (4) (Same as Theater M103A.) Lecture, three hours. Designed for juniors/seniors. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from slavery to mid-1800s. Letter grading.

**M103B. African American Theater History: Minstrel Stage to Rise of American Musical.** (4) (Same as Theater M103B.) Lecture, three hours. Designed for juniors/seniors. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from minstrel stage to rise of American musical. Letter grading.

**M103E. Modern African American Drama: Harlem Renaissance to Black Arts Movement.** (4) (Same as Theater M103E.) Lecture, three hours. Survey and examination of African American plays from 1920s until birth of modern civil rights era. Examination of socio-historical context out of which plays were created and critical essays that illustrate development of African American playwrights and their significant involvement in creation of diversified American theatrical tradition. Letter grading.

**M103J. Contemporary Black Theater: Modern Civil Rights Era to Black Lives Matter and Beyond.** (4) (Same as Theater M103J.) Lecture, three hours. Examination of Black theater from Black Arts Movement of 1960s until today. Exploration of social and historical implications of work, and aesthetic experimentation of contemporary African American playwrights and movements. Letter grading.

**M104A. Early African American Literature.** (5) (Same as English M104A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of African American literature from 18th century through World War I, including oral and written forms (folktales, spirituals, sermons; fiction, poetry, essays), by authors such as Phillis Wheatley, Frances Harper, Frederick Douglass, Harriet Jacobs, Charles Chesnut, Booker T. Washington, and Pauline Hopkins. P/NP or letter grading.

**M104B. African American Literature from Harlem Renaissance to 1960s.** (5) (Same as English M104B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of 20th-century African American literature from New Negro Movement of post-World War I period to 1960s, including oral materials (ballads, blues, speeches) and fiction, poetry, and essays by authors such as Jean Toomer, Claude McKay, Langston Hughes, Nella Larsen, Zora Neale Hurston, Richard Wright, Ann Petry, James Baldwin, Gwendolyn Brooks, and Ralph Ellison. P/NP or letter grading.

**M104C. African American Literature of 1960s and 1970s.** (5) (Same as English M104C.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of African American literary expression from late 1950s through 1970s. Topics include rise of Black Arts Movement of 1960s and emergence of black women's writing in early 1970s, with focus on authors such as Lorraine Hansberry, Amiri Baraka, Nikki Giovanni, Alice Walker, Toni Morrison, Ishmael Reed, Audre Lorde, Paule Marshall, and Ernest Gaines. P/NP or letter grading.

**M104D. Contemporary African American Literature.** (5) (Same as English M104D.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of African American literature from 1980s to present covering range of genres, with emphasis on diversity of perspectives and styles that have emerged over past 30 years or so. Authors may include Toni Morrison, August Wilson, Octavia Butler, Anna Deavere Smith, June Jordan, Charles Johnson, and Rita Dove. P/NP or letter grading.

**M104E. Topics in African American Literature and Culture.** (5) (Same as English M104E.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Variable topics lecture course that provides opportunity to

cover African American literature from wide range of theoretical, historical, format, and thematic perspectives. Topics may include African American autobiography, 20th-century African American literature and film, black diaspora literature, postmodern African American fiction, Afro-Futurism, and African American satire. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**105A. Ideology and Black Consciousness.** (4) Lecture, three hours; discussion, one hour. How do we know what we know? Why do we think what we think? Where does our knowledge of self come from? Introductory set of theoretical tools to begin to answer such questions of consciousness, especially as they concern status of Black people in contemporary racial-economic context of U.S. and elsewhere in African diaspora. Drawing on interdisciplinary Black studies scholarship of range of writers that may include Ida B. Wells, Carter G. Woodson, Claudia Jones, W.E.B. Du Bois, Ngugi wa Thiong'o, Steve Biko, Frantz Fanon, Walter Rodney, George Jackson, Angela Davis, Jacob H. Carruthers, Stuart Hall, and Sylvia Wynter, to understand function of representation, language, and ideology in creation of social meaning and role of literature, media, education, and popular culture in organization of Black consciousness and exercise of power. P/NP or letter grading.

**105B. Issues in Pan-African Biography and Autobiography.** (4) Seminar, four hours. Introduction of history of political philosophy of Pan-Africanism from its origins in 19th century. Critical reading of biographical and autobiographic texts to deepen understanding of major themes and critiques of Pan-African thought, including those of race and racial formation, gender and sexuality, capitalism and labor exploitation, and nationalism and state repression. Application of history and critical readings to students' own lives and family history through researching and writing short autobiographical text. Students gain experience in conducting interviews and oral histories and genealogical and archival research. P/NP or letter grading.

**105C. Africa, African Americans, and History of Capitalism.** (4) Lecture, three hours; discussion, one hour. Examination of role people of African descent have had in history and political economy of capitalism since its origins in institutions of slavery and transatlantic trade. Addresses relationship between capitalism and slavery, and issues including incorporation of free Black labor into post-slavery regimes of capital accumulation; debt, underdevelopment, and Black reparations; impact of emancipation on imperialism in Africa; role of land, labor, and resources in history of colonization; Black labor migration in early-20th-century U.S.; Fordism and Black worker; ideas of worker self-management as Black critique of capitalism; neocolonialism and reorganization of capital accumulation in Caribbean and Africa; and Reconstitution of race under neoliberalism. P/NP or letter grading.

**105D. African American-Caribbean Relations: Difference, Solidarity, and Empire.** (4) Lecture, three hours; discussion, one hour. Examination of history and politics of relations between Black America and Caribbean from Haitian Revolution of 1804 to U.S. Intervention of Grenada of 1983. Discussion of themes, episodes, and flash points may include significance of Haiti within African American thought, 19th-century Black migration to Caribbean, Caribbean immigration and Harlem Renaissance, Black views of U.S. occupation of Haiti and Trinidad, and impact of Caribbean thinkers on U.S. Civil Rights and Black Power movements. P/NP or letter grading.

**106A. Africa and World.** (4) Lecture, four hours; discussion, one hour. Introduction to historical and contemporary Africa, with focus on modern history, politics, and culture. Survey of key issues impacting Africa today and in future—from political discussions on independence, geopolitics of aid and development, cultural transmission and relationship with African diaspora, modern movement and migration, and debates on racial and geographic divide between Arab north and south of Sahara. P/NP or letter grading.

**106B. Militarism, International Security, and African American Political Thought.** (4) Lecture, three hours; discussion, one hour (when scheduled). Examination of trends in African American political thought regarding origins of war and peace in international relations from World War I to present. African American support for and resistance to U.S. militarism and military policy central to this inquiry. Emphasis on African American appraisals of justness of America's wars, and nexus between U.S. military conflicts abroad and U.S. racial politics at home. Special attention to shifting African American assessments of prospects and prerequisites for peaceful and equitable relations within international community. P/NP or letter grading.

**M107. Cultural History of Rap.** (5) (Same as Ethnomusicology M119 and Global Jazz Studies M119.) Lecture, four hours; discussion, one hour. Introduction to development of rap music and hip-hop culture, with emphasis on musical and verbal qualities, philosophical and political ideologies, gender representation, and influences on cinema and popular culture. P/NP or letter grading.

**108. Jazz and Political Imagination.** (4) Lecture, three hours; discussion, one hour. How has jazz come to symbolize so many different political tendencies—freedom and democratic values, threat to order and civil society, possibility of integration and racial harmony, Black liberation and nationalism, conservatism, surrealism, socialism, etc., throughout 20th century? What about jazz enables people to read their political aspirations and hopes in what is primarily instrumental, improvised music? Exploration of history of ideas about jazz, specifically how writers, activists, movements, and musicians understood politics of jazz. Exploration of political imaginations—here and abroad—in particular in jazz and question of freedom—social freedom, political freedom, cultural, and artistic freedom. P/NP or letter grading.

**M109. Women in Jazz.** (4) (Same as Ethnomusicology M109, Gender Studies M109, and Global Jazz Studies M109.) Lecture, four hours; discussion, one hour. Sociocultural history of women in jazz and allied musical traditions from 1880s to present. Survey of women vocalists, instrumentalists, composers/arrangers, and producers and their impact on development of jazz. P/NP or letter grading.

**CM110. Bibliography and Research Methods in Rap Music/Hip-Hop Studies.** (4) (Same as Ethnomusicology CM120.) Seminar, three hours. Requisite: course M107. Designed for juniors/seniors conducting research on hip-hop in preparation for capstone projects such as honors or senior thesis. In-depth examination of intellectual history of rap music/hip-hop studies scholarship. Examination of readings related to intellectual history of rap music scholarship and allied traditions (including breakdance and graffiti). Exploration of broad range of research methods and archival/library centers specific to hip-hop studies. Concurrently scheduled with course CM210. Letter grading.

**110A. Race, Science, and Society.** (4) Lecture, three hours; discussion, one hour. Idea that races reflect inherent biological differences between social groups has been prominent aspect of European and American thought since at least Enlightenment. While there have been moments of refuting this way of thinking—most notably, social constructionist thesis emerging as dominant framework in aftermath of WWII—fixed biological conceptions of race haunt contemporary biomedical research, where race continues to be measured at nearly every scale of human biology: from molecules up to intelligence and health. Exploration of reasons for this persistence through engagement with theory and in-depth analysis of biological research. Close attention to relationship between developments within American history and production of scientific knowledge about race; for it is in this relationship that perils and promise of science reveal themselves. P/NP or letter grading.

**110B. Reproducing While Black: Politics of Black Reproduction.** (4) Seminar, three hours. Interdisciplinary exploration of experiences of Black reproduction, globally. Investigation of stakes of Black repro-

duction as well as strategies of resistance and strategies for securing healthy and sustainable reproduction. P/NP or letter grading.

**110C. Black Health Matters: Wellness, Health, and Self-Care. (4)** Seminar, three hours. Exploration, cultivation, and active engagement in modes of self-care that are accessible and drawn from experiences coming from Black diaspora. Focus on reclaiming of healing and self-care practices, ancestral practices, listening to body, and enacting healing justice. P/NP or letter grading.

**CM110D. Posthumans. (4)** (Same as Society and Genetics M110D.) Seminar, three hours. Denaturalization of concept of human and with it uniquely western philosophical commitments that sustain imagined boundaries between human and non-human, modern and pre-modern, male and female, abled and disabled, chosen and condemned, indigenous and European, African and whiteness, religious and secular. Exploration of formation of human throughout long course of Euro-American intellectual history and its contemporary posthuman formations. Study is informed by range of theoretical work that covers meaning of modernity, liberalism, inter-species relationships, critical race theory, conceptual problems in evolutionary biology, and public health. Concurrently scheduled with course C210D. P/NP or letter grading.

**M111. Ellingtonia. (4)** (Same as Ethnomusicology M111 and Global Jazz Studies M111.) Lecture, three hours. Music of Duke Ellington, his life, and far-reaching influence of his efforts. Ellington's music, known as Ellingtonia, is one of largest and perhaps most important bodies of music ever produced in U.S. Covers many contributions of other artists who worked with Ellington, such as composer Billy Strayhorn and musicians Johnny Hodges, Cootie Williams, and Mercer Ellington. P/NP or letter grading.

**112A. Sunken Place: Racism, Survival, and Black Horror Aesthetic. (4)** Lecture, three hours; discussion, one hour. Inspired by Jordan Peele's horror film *Get Out* (2017), use of horror films and fiction of artists like Peele, George A. Romero, Kasi Lemmons, Tananarive Due, and Toni Morrison—as well as short films by artists like activist Bree Newsome—to examine scope, role, and impact of Black horror, subset of horror genre that binds elements of history, sexuality, sociology, politics, African-based religions such as Vodun/Vodou, and morality tales to create mirror through which to view true-life struggles facing black population. P/NP or letter grading.

**112B. Aboard Mothership: Introduction to Afrofuturism. (4)** Lecture, three hours; discussion, one hour. Anchored by Ryan Coogler's historic Afrofuturistic film *Black Panther*, use of speculative fiction of Octavia E. Butler, Samuel R. Delany, Tananarive Due, Nnedi Okorafor, Steven Barnes, and other writers—as well as short films by Kenyan filmmaker Wanuri Kahiu and British/African filmmaker Kibwe Tavares and others—to examine scope and impact of Afrofuturism, growing international cultural movement binding elements of history, sociology, technology, magical realism, politics, and futurism to create alternate reality for children of African diaspora. Exploration of influence of music of George Clinton and Parliament-Funkadelic (*Motherhip Connection*), Sun-Ra, Janelle Monáe, and others. P/NP or letter grading.

**CM113B. Legislative Theater for Race and Gender Justice. (5)** (Same as World Arts and Cultures CM113B.) Lecture, three hours; discussion, one hour (when scheduled). Exploration and application of range of interactive methods and arts-based strategies with participants from UCLA and broader Los Angeles community in order to research and influence public policy and legislative change. Students and campus partners create and perform legislative theater addressing issues of race, gender, and criminal justice system. Critical texts, collaborative work, and creative methods are used to engage perspectives on justice. Analysis of diverse and growing body of work on systems of justice through research, writing, workshops, performances, and critiques of own original writings and performances developed in response to visiting scholars and community partners. Concurrently scheduled with course CM213B. P/NP or letter grading.

**M113D. Spoken Word Workshop: Creative Writing and Performance Practicum. (4)** (Same as World Arts and Cultures M113D.) Lecture, three hours. Enrollment by consent of instructor. Shaped by, and consistently inspiring, broader movements for social and political change, practice of spoken word today provides creative outlets for writers and performing artists worldwide by resisting and remixing elements of traditional verse, participatory theater, and popular culture. To develop writing and performance skills, and to deeply understand selection of poets and performing artists who have shaped spoken word as known today, investigation of aesthetics and political movements of their time through critical essays and poetry from range of influential movements. P/NP or letter grading.

**CM113XP. Narratives of Justice: Disrupting School-to-Prison Pipeline—Arts, Activism, and Agency. (4)** (Formerly numbered CM113.) (Same as Education CM125XP) Lecture, four hours; discussion, one hour. Exploration of policies and practices, art and activism, and other forms of agency engaging school-to-prison pipeline. Concurrently scheduled with course CM213XP. P/NP or letter grading.

**M114C. African American Political Thought. (4)** (Same as Labor Studies M114C and Political Science M180A.) Lecture, three or four hours; discussion, one hour (when scheduled). Intensive introduction to African American political thought, with focus on major ideological trends and political philosophies as they have been applied and interpreted by African Americans. Debates and conflicts in black political thought, historical contest of African American social movements, and relationship between black political thought and major trends in Western thought. P/NP or letter grading.

**M115. We Gone Be Alright: Developing Next Generation of Black Organizers. (4)** (Same as Labor Studies M115.) Seminar, four hours. Learning from and building on Black labor and community organizing traditions, students develop skills and mindsets needed for transformative leadership. Students connect with leaders of community organizations, student organizers, and prepare for more intensive community-based work. P/NP or letter grading.

**M116A-M116B. African American Musical Heritage. (5–5)** (Formerly numbered M12A-M12B.) (Same as Ethnomusicology M110A-M110B and Global Jazz Studies M110A-M110B.) Lecture, four hours; discussion, one hour. P/NP or letter grading. **M116A.** Sociocultural history and survey of African American music covering Africa and its impact on Americas; music of 17th through 19th centuries; minstrelsy and its impact on representation of blacks in film, television, and theater; religious music, including hymns, spirituals, and gospel; black music of Caribbean and Central and South America; and music of black Los Angeles. **M116B.** Sociocultural history and survey of African American music covering blues, pre-1947 jazz styles, rhythm 'n' blues, soul, funk, disco, hip-hop, and symbiotic relationship between recording industry and effects of cultural politics on black popular music productions.

**M118. Student-Initiated Retention and Outreach Issues in Higher Education. (4)** (Same as American Indian Studies M118, Asian American Studies M168, and Chicana/o and Central American Studies M118.) Lecture, four hours. Exploration of issues in outreach and retention of students in higher education, especially through student-initiated programs, efforts, activities, and services, with focus on UCLA as case. May be repeated twice for credit. Letter grading.

**M120. Race, Inequality, and Public Policy. (4)** (Same as Public Policy M120.) Lecture, three hours; discussion, one hour. Background in economics, sociology, or urban studies preferred but not required. Survey course to examine major debates and current controversies concerning public policy responses to social problems in urban America. Letter grading.

**M121. Afro-Indigenous History: from Enslavement and Settlement to Black Lives Matter and Indigenous Sovereignty. (4)** (Same as American Indian Studies M123.) Lecture, four hours; discussion, one hour. Examination of how race was developed through experiences of African-descended peoples and indigenous people in U.S. and beyond. Examination of key

episodes in history. Using articles, books, documentaries, and contemporary popular culture, examination of relationship between people of African descent and indigenous people. Study takes broad, thematic approach. Topics include first encounters in Americas and ideologies that led to enslavement and dispossession; period of enslavement and indigenous removal in 19th century; mid-20th-century social movements; and contemporary manifestations, especially solidarity shown between Black Lives Matter and Dakota Access Pipeline protesters. P/NP or letter grading.

**M124. Comparative Racialization and Indigeneity. (4)** (Same as Asian American Studies M124.) Lecture, three hours. Examination of processes and histories of racialization and colonization in U.S. Discussions, film screenings, guest speakers, and reading assignments, with focus on issues of cultural survival, empire, indigeneity, migration, resistance, sovereignty, and war. P/NP or letter grading.

**M129B. Participatory Action Research on Youth Organizing for Racial Justice. (4)** (Same as American Indian Studies M129, Asian American Studies M128, Chicana/o and Central American Studies M129B, and Public Affairs M122.) Lecture, four hours. Students are trained to conduct participatory action research on grassroots youth organizing across California. Students gain historical and theoretical background on multi-racial and inclusive organizing. Students learn how to collect and analyze data pertaining to pressing organizing issues. Study and critical analysis of youth organizing strategies. Weekly training modules on data collection and grassroots organizing strategies that prepare students for internships in grassroots youth organizing groups serving Asian American, Black, Latinx, and Native American communities. P/NP or letter grading.

**CM135A. African American Art before 1900. (4)** (Same as Art History CM135A.) Lecture, three hours. Detailed inquiry into work to circa 1900 of African American artists whose works provide insightful and critical commentary about major features of American life and society. Concurrently scheduled with course CM235A. P/NP or letter grading.

**CM135B. African American Art, 1900 to 1963. (4)** (Same as Art History CM135B.) Lecture, three hours. Detailed inquiry into work of African American artists from Columbian Exposition to 1963 March on Washington within context of social, political, and cultural engagement, as well as in codification of modern black life in U.S. Concurrently scheduled with course CM235B. P/NP or letter grading.

**140. Radical Black Imaginaries: Politics, Identity, and Struggle. (4)** Lecture, four hours. Exploration of some more powerful visions for freedom, liberation, and racial justice in African diasporic world, with focus on political struggles, intellectual movements, and creative expressions that formed part of radical black imagination during last century. Following of black diasporic citizens from Accra to Harlem to Havana as they struggled for freedom within and beyond movements against colonialism and racial oppression, for Pan-Africanism, feminism, and Negritude, and through utopian art forms like Afro-Futurism. Consideration of how black activists, artists, and intellectuals in various parts of globe have worked to envision and enact real possibilities for sovereignty and liberation both at home and abroad. Letter grading.

**M141. African American Women's History. (4)** (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M141.) Lecture, four hours. Historical examination of black women's experiences in U.S. from antebellum era to present. By situating black women's experiences within major historical transitions in American history, exploration of key themes, including gender formation, sexuality, labor and class, collective action, gender and sexual violence, reproduction, and role of law. How have intersecting forms of oppression impacted black women's historical lives? How is difference constructed through interrelated and overlapping ideologies of race and gender? How do historians uncover black women's historical lives and what are challenges to such discoveries? Examination of black women's individual and collective struggles for freedom from racism, sexism, and heteropatriarchy, as

well as black women's participation in and challenge to social movements, including suffrage, women's liberation, civil rights, and black power. Investigation of black women's intellectual history, including their cultural productions. Letter grading.

**M142. Race, Gender, and Punishment. (4)** (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M142.) Seminar, four hours. Interdisciplinary examination of historical and contemporary development of modern prison industrial complex in U.S., with attention to impact of prison industrial complex on immigrants, including undocumented residents, homeless populations, women, African Americans, and transgender nonconforming and lesbian, gay, bisexual, and transgender communities. Why does U.S. have largest prison population in world? What historical conditions and ideologies gave rise to this massive explosion in U.S. prisoner population? What policies have fueled mass imprisonment? Who is imprisoned? How have politicians used imprisonment as response to economic transformations and perceived social disorders? How is current crisis analogous to or distinct from regimes of racialized punishment in prior historical moments? Letter grading.

**M144. Ethnic Politics: African American Politics. (4)** (Same as Political Science M182.) Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: one 140-level political science course or one upper-division course on race or ethnicity from history, psychology, or sociology. Requisite: Political Science 40. Designed for juniors/seniors. Emphasis on dynamics of minority group politics in U.S., touching on conditions facing racial and ethnic groups, with black Americans being primary case for analysis. Three primary objectives: (1) to provide descriptive information about social, political, and economic conditions of black community, (2) to analyze important political issues facing black Americans, (3) to sharpen students' analytical skills. P/NP or letter grading.

**M148. Politics of Struggle: Race, Solidarity, and Resistance. (4)** (Same as Chicana/o and Central American Studies M148.) Lecture, four hours. Examination of Chicana/Chicano intergroup relations and political coalitions with other Latinos, African Americans, Asian and Pacific Islanders, and Euro-Americans, especially in communities undergoing rapid changes in demographic composition. Letter grading.

**M150D. Recent African American Urban History: Funk Music and Politics of Black Popular Culture. (4)** (Same as History M150D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of musical genre known as funk that emerged in its popular form during late 1960s and reached popular high point, in black culture, during 1970s. Funk, fusion of gospel, blues, jazz, rhythm and blues, soul, rock, and many other musical styles, offers students unique window into recent African American history. P/NP or letter grading.

**M154C. Black Experience in Latin America and Caribbean I. (4)** (Same as Political Science M184A.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Culture, history, politics, and identity of African Americans in Spanish and Lusophone Caribbean, South America, and Central America. Exploration of issues of identity in context of Afro/Latino migration to U.S. P/NP or letter grading.

**M154D. Black Experience in Latin America and Caribbean II. (4)** (Same as Political Science M184B.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of issues regarding race and ethnicity in Latin America, with emphasis on comparisons to U.S. and within Latin America. Covers populations of African and indigenous origins, with emphasis on former. P/NP or letter grading.

**M155. Afro-Latina/o Experience(s) in U.S. (4)** (Same as Chicana/o and Central American Studies M143B.) Lecture, four hours; discussion, one hour (when scheduled). Focus on Afro-Latina/o experience in U.S. through exploration of its historical roots and contemporary forms. How colorism in Latin America and U.S. influence Afro-Latina/o identity. Regional differences and different types of Afro-Latina/os that include

Blaxicans, Nuyoricans, Afro-Cubans, and others are taken into account. Discussion of themes that include feminism, politics, culture, music, and identities in order to obtain comprehensive picture of Afro-Latina/os in U.S. yesterday and today. P/NP or letter grading.

**M158A. Comparative Slavery Systems. (4)** (Same as History M150A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of slavery experiences in various New World slave societies, with emphasis on outlining similarities and differences among legal status, treatment, and slave cultures of North American, Caribbean, and Latin American slave societies. P/NP or letter grading.

**M158B-M158C. Introduction to Afro-American History. (4-4)** (Same as History M150B-M150C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of Afro-American experience, with emphasis on three great transitions of Afro-American life: transition from Africa to New World slavery, transition from slavery to freedom, and transition from rural to urban milieus. P/NP or letter grading.

**M158E. African American Nationalism in First Half of 20th Century. (4)** (Same as History M150E.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Critical examination of African American search in first half of 20th century for national/group cohesion through collectively built institutions, associations, organized protest movements, and ideological self-definition. P/NP or letter grading.

**M159P. Constructing Race. (4)** (Same as Anthropology M144P and Asian American Studies M169.) Lecture, three hours; discussion, one hour (when scheduled). Examination of race, socially constructed category, from anthropological perspective. Consideration of development of racial categories over time and in different regions, racial passing, multiracial identity in U.S., whiteness, race in popular culture, and race and identity. P/NP or letter grading.

**M164. Afro-American Experience in U.S. (4)** (Same as Anthropology M144Q.) Lecture, three hours. Promotes understanding of contemporary sociocultural forms among Afro-Americans in U.S. by presenting comparative and diachronic perspective on Afro-American experience in New World. Emphasis on utilization of anthropological concepts and methods in understanding origins and maintenance of particular patterns of adaptation among black Americans. P/NP or letter grading.

**M165. Sociology of Race and Labor. (4)** (Same as Labor Studies M165 and Sociology M165.) Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Exploration of relationship between race/ethnicity, employment, and U.S. labor movement. Analysis of underlying racial divisions in workforce and how they evolved historically. Consideration of circumstances under which workers and unions have excluded people of color from jobs and unions, as well as circumstances under which workers and unions have organized people of color into unions in efforts to improve their wages and working conditions. Impact of globalization on these dynamics. P/NP or letter grading.

**CM166. Future of Work in Decarcerated California. (4)** (Same as Labor Studies M124.) Seminar, three hours. Limited to students in Community Scholars program. Exploration of scope of employment and nature of jobs that are attached to current system of mass incarceration in California, with focus on Los Angeles county. Study of history and evolution of carceral system and its relationship to oppression of Black people, poor, and other stigmatized groups. Exploration of history of employment discrimination against Black workers and how successful demand for unionized government jobs (public sector work) evolved as anti-discrimination remedy. Investigation of work, especially by people of color, in existing carceral regimes, and its impact on individual worker wellness and community well-being. Examination of tension between racial justice agendas to decarcerate California and those to prevent downward mobility of workers of color recruited by state to carry out failed policies of war on drugs. Concurrently scheduled with course C266. P/NP or letter grading.

**CM166B. Future of Work in Decarcerated California II: Applied Research and Policy Analysis for Implementation of Justice Transformation. (4)** (Same as Labor Studies M124B.) Seminar, three hours. Limited to students in Community Scholars program. Requisite: course CM166. Second course in two-quarter participatory action research program that partners students with community-based change agents. Study involves project-based learning in groups made up of undergraduate and graduate students and community members. Students contribute to development of collective policy platform that centers recommendations of formerly employed and formerly incarcerated people in broader community vision for transitioning to decarcerated workforce. Concurrently scheduled with course C266B. P/NP or letter grading.

**M167. Worker Center Movement: Next Wave Organizing for Justice for Immigrant Workers. (4)** (Same as Asian American Studies M163, Chicana/o and Central American Studies M130, and Labor Studies M167.) Seminar, three hours. Development of theoretical and practical understanding of worker center movement, with focus on historical factors that have led to emergence and growth of worker centers. Role of worker centers in promoting multiethnic and multi-racial campaigns for workplace and economic justice. Transnational cross-border solidarity issues and rights of undocumented workers. P/NP or letter grading.

**M170A. Diasporic Nonfiction: Media Engagements with Memory and Displacement I. (4)** (Same as Chicana/o and Central American Studies M140A.) Seminar, three hours. Video production course, with emphasis on autobiographical, critical, and performance-based modes of nonfiction media making, drawing on practices of diasporic filmmakers who have grappled with suppressed collective memories of displacement, trauma, exile, and migration. What does it mean to make videos about memory in places where direct cues to remembering cannot be seen? Introduction to concepts from films and readings. Production assignments and screenings, with focus on questions of how to represent history, memory, family dynamics, and lived experience according to perspectives and interests of diasporic subjects. In Progress grading (credit to be given only on completion of course M170B).

**M170B. Diasporic Nonfiction: Media Engagements with Memory and Displacement II. (4)** (Same as Chicana/o and Central American Studies M140B.) Seminar, three hours. Enforced prerequisite: course M170A. Students complete 20- to 30-minute video projects about issues or experiences central to everyday lives of collectives of diasporic peoples. They learn to propose, record, edit, and distribute one socially engaged nonfiction video and draw on their experiences from course M170A in writing voiceover, choreographing dances, designing public performances, interviewing, and recording everyday life. P/NP or letter grading.

**M172. Afro-American Woman in U.S. (4)** (Same as Gender Studies M172 and Psychology M172.) Lecture, two and one half hours. Designed for juniors/seniors. Impact of social, psychological, political, and economic forces which impact on interpersonal relationships of Afro-American women as members of large society and as members of their biological and ethnic group. P/NP or letter grading.

**M173. Nonviolence and Social Movements. (4)** (Same as Chicana/o and Central American Studies M173 and Labor Studies M173.) Lecture, three hours; discussion, one hour. Overview of nonviolence and its impact on social movements both historically and in its present context in contemporary society, featuring lectures, conversations, films, readings, and guest speakers. Exploration of some historic contributions of civil rights struggles and role of nonviolent action throughout recent U.S. history. Examination of particular lessons of nonviolent movements as they impact social change organizing in Los Angeles. P/NP or letter grading.

**174. Intra-racial Differences in 20th-Century Black America. (4)** Lecture, four hours. Discussion of evolution of black divergence within African American community by focusing on evolution of differences—specifically class differences—that have minimized black progress when compared with other races and cultures like Asians and Jews. Examination of origins and

plight of lower-class blacks in stark juxtaposition with black leadership and African Americans occupying higher socioeconomic levels. Letter grading.

**175. Racial and Ethnic Disparities in Healthcare. (5)** Lecture, four hours. Designed for students who are seeking to become healthcare professionals so they understand importance of how race and ethnicity impact delivery of healthcare. Focus on need to increase diversity of health professions workforce as means to address health disparities. Letter grading.

**176. Race, Racism, and Law. (4)** Lecture, four hours; discussion, one hour. Throughout American history, race relations have been inextricably linked to law. Both perpetuation of racism and struggle against it have involved various legal institutions, especially U.S. Supreme Court. Lawyers on all sides have often played pivotal roles in establishing legal standards defining political, economic, social, and psychological status of African Americans (and other racial and ethnic minorities). Historical overview and in-depth examination of selected major highlights of these legal developments, including Constitutional sources of racism, legal foundations establishing and eliminating slavery, major Supreme Court decisions before and during civil rights era, and contemporary legal retreat from civil rights protections. Examination of legal processes and legal profession in broader historical and political context. Letter grading.

**177. African Americans in Higher Education. (4)** Lecture, four hours. Discussion and exploration of challenges facing black students at predominantly white institutions (PWIs), ways in which Proposition 209 has affected black student community, spaces on and off campus that empower students, and issues of access and equity in higher education. Critical discussions about student experiences/concerns/challenges at UCLA, addressing specific strategies for success, and notions of empowerment that provide context for students from underrepresented backgrounds at predominantly white universities. Letter grading.

**M178. Sociology of Caribbean. (4)** (Same as Sociology M178.) Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Historical sociology of Caribbean, with emphasis on colonialism and decolonization, development and underdevelopment, race-making institutions and evolution of race relations, nationalism and migration. P/NP or letter grading.

**M179A. Topics in African American Literature. (5)** (Same as English M191A.) Seminar, three or four hours. Enforced prerequisite: English Composition 3 or 3H. Variable specialized studies course in African American literature. Topics may include Harlem Renaissance, African American literature in Nadir, black women's writing, contemporary African American fiction, African American poetry. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**184A. Research in Black Life, Institutions, and Culture. (4)** Seminar, three hours. Interdisciplinary overview of Black studies research perspectives and research methods. P/NP or letter grading.

**184B. Research in Black Life, Institutions, and Culture II. (4)** Lecture, three hours; discussion, one hour. Limited to students enrolled in Bunche fellows research program. Continuation of interdisciplinary overview of Black studies research perspectives and research methods. Survey of Black studies research perspectives, methods, and findings. Covers voluminous, complex materials in relatively short period of time. Extensive reading, critically analysis of materials, and application of what is learned in research projects. Students are expected to present thoughtful, detailed, creative critical analyses of texts and ideas in both written and oral communication. Students share and present drafts from ongoing research projects as they incorporate constructive feedback. Collaborative group work and participation in a shared, supportive learning community. P/NP or letter grading.

**184C. Research in Black Life, Institutions, and Culture III: Comparative Black Studies Research Perspectives and Methods. (4)** Seminar, three hours. Limited to students enrolled in Bunche fellows research program. Covers voluminous, complex materials in relatively short period of time. Operates as like graduate-level, professional seminar, requiring stu-

dents to critically assess materials and determine which research perspectives, methods, and findings relate most directly to their own research projects. Students are expected to present thoughtful, detailed, creative critical analyses of texts and ideas in written and oral communication. They are expected to share from their ongoing research projects in order to benefit from constructive, class feedback. Collaborative, group work is essential as we build supportive learning community. P/NP or letter grading.

**188A. Special Courses in African American Studies. (4)** Lecture, three hours; discussion, one hour. Program-sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**188B. Race and Public Policy. (5)** Seminar, three hours. Exploration of range of public policies concerned with promoting civil rights of racial minorities, with focus on education, voting, and housing. Why did such policies initially arise? How have they since developed? How effective have they been in closing racial gap? Provides students with basic foundation of knowledge for thinking through contemporary debates surrounding policies that seek to redress racial discrimination in U.S. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**C191. Variable Topics Research Seminars: Afro-American Studies. (4)** Seminar, four hours. Research seminar on selected topics in Afro-American studies. Reading, discussion, and development of culminating project. May be repeated for credit. Concurrently scheduled with course C291. Letter grading.

**M194A. Language, Literacy, and Human Development Research Group Seminars (5)** (Same as Education M131A.) Seminar, three hours; laboratory, two hours (when scheduled). Requisite: Education 180. Research seminar designed to provide opportunity to combine theory and practice in study of human development in educational contexts. Focus on relationship between theories of development, culture, and language. Letter grading.

**M194B. Culture, Gender, and Human Development Research Group Seminars (5)** (Same as Education M131B.) Seminar, three hours; laboratory, two hours (when scheduled). Requisite: Education 180. Research seminar designed to provide opportunity to combine theory and practice in study of human development in educational contexts. Focus on relationship between theories of development, culture, and gender. Letter grading.

**M194C. Culture, Communications, and Human Development Research Group Seminars (5)** (Same as Education M131C.) Seminar, three hours; laboratory, two hours (when scheduled). Requisite: Education 180. Research seminar designed to provide opportunity to combine theory and practice in study of human development in educational contexts. Focus on relationship between theories of development, culture, and technologies. Letter grading.

**195. Community or Corporate Internships in Afro-American Studies. (4)** Tutorial, four hours. Preparation: 3.0 grade-point average in major. Limited to junior/senior majors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. Eight units may be applied toward major requirements. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195CE. Comparative Approaches to Community and Corporate Internships. (4)** (Same as American Indian Studies M195CE, Asian American Studies M195CE, Chicana/o and Central American Studies M195CE, and Gender Studies M195CE.) Tutorial, one hour; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Comparative study of race, gender, and indigeneity in relation to contemporary workplace dynamics. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. Individual contract with supervising faculty member required. P/NP or letter grading.

**196. Research Apprenticeship in Afro-American Studies. (4)** Tutorial, three hours. Limited to juniors/seniors. Entry-level research apprenticeship under guidance of faculty mentor affiliated with Afro-American Studies major or minor. Short-term research project culminating in term paper in African American studies or related field required. Research may be in part or totally in relation to faculty member's research. May be repeated for credit. Individual contract required. Letter grading.

**197. Individual Studies in Afro-American Studies. (2 to 8)** Tutorial, four hours. Preparation: 3.0 grade-point average in major. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. Eight units may be applied toward major requirements. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198. Honors Research in Afro-American Studies. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Afro-American Studies. (2 to 4)** Tutorial, to be arranged with faculty member who directs study. Preparation: 3.0 grade-point average in major. Limited to juniors/seniors. Supervised individual research or investigation of large project under guidance of faculty mentor. Culminating paper or project required. Eight units may be applied toward major requirements. May be repeated for maximum of 16 units. Individual contract required. P/NP or letter grading.



## Graduate Courses

**M200A. Advanced Historiography: Afro-American. (4)** (Same as History M200V.) Seminar, three hours. May be repeated for credit. S/U or letter grading.

**M200B. Political Economy of Race. (4)** (Same as History M256C.) Seminar, four hours. Examination of historiography of history of capitalism and history of African diaspora, especially in their overlapping concerns with organization of race and racial states in contemporary world, development of modern imperialism—and emergence of global Black resistance to both. Themes and topics considered may include capitalism and question of slavery; law, regulations, and legal pluralism in organization of markets and nations; uneven development and nature of Black sovereignty; history of regimes of gender and sexuality in social and capital reproduction; modalities of capital accumulation and production of space; racial violence and territorial expansion; emancipation and growth of empire; history of finance capital and its discourses of debt; capitalism and history of anti-Blackness; racism, neoliberalism, and governmentality; and emergence and content of Black racial tradition and its critiques of racial capitalism. S/U or letter grading.

**M200C. Black Families and Relationships. (4)** (Same as Sociology M262.) Seminar, three hours. Evaluation of social, cultural, and historical forces that affect socialization, stability, and interaction in black intimate relationships, beginning with theoretical framework from black feminism to analysis of economic and other expectations for partners in cohabiting and other types of unions. Examination of family life for both middle-class and low-income populations. Exploration of notions of black sexuality, including images of hyper-masculinity and femininity within black body and critical interrogation of notions of blackness and authenticity in racial identification. Contribution to greater understanding of black intimate relationships in different contexts, including lesbian and gay identities, Caribbean and other ethnic identities, and interracial intimacies. S/U or letter grading.

**200D. African American Women's History. (4)** Seminar, four hours. Historical examination of black women's experiences in U.S. from antebellum era to present. Exploration of key themes, including gender formation, sexuality, labor and class, collective action, gender and sexual violence, reproduction, and role of law. How have intersecting forms of oppression impacted black women's historical lives? How is difference constructed through interrelated and overlapping ideologies of race and gender? How do historians uncover black women's historical lives and what are challenges to such discoveries? Examination of black women's individual and collective struggles for freedom from racism, sexism, and heteropatriarchy as well as black women's participation in and challenge to social movements, including suffrage, women's liberation, civil rights, and black power. Letter grading.

**M200E. Studies in Afro-American Literature. (4)** (Same as English M262.) Lecture, four hours. Intensive research and study of major themes, issues, and writers in Afro-American literature. Discussions and research on aesthetic, cultural, and social backgrounds of Afro-American writing. May be repeated for credit. S/U or letter grading.

**M200G. Race, Class, and Gender: Constructing Black Womanhood and Black Manhood in America. (4)** (Same as Sociology M231.) Seminar, four hours. Race, class, gender, and sexual identity are axes of stratification, identity, and experience. They are not merely identities but structural locations that are often taken for granted and rarely confronted, challenged, or contested. Many times one or more of these go unrecognized. Exploration of multiple and intersecting ways these concepts shape society, individual life chances, and daily social interactions for African Americans. Examination of race, class, and gender inequalities as individual aspects of social life. How race, class, gender, and sexual identity shape societies and individual experiences in interaction with each other. How these inequalities shape and are shaped by social institutions, including cultural institutions, economy, and family, within context of experiences of black women and black men in contemporary U.S. Letter grading.

**200H. Social Politics of Recent African American Music and Popular Culture. (4)** Seminar, four hours. Predominant trend in research in African American music highlights intersection of music with social and political movements, contextual socioeconomic realities, and cultural politics of identity. Civil rights, black power, feminism, sexual revolution, and anti-war were movements that shaped and were shaped by music of their respective historical contexts. Recent scholarship has also engaged questions pertaining to intra-African American politics of community: grappling with issues such as appropriation, economic exploitation, male privilege, and marginalization of creative artists. Examination of critical nexus between music and myriad of issues unearthed by this trend in scholarly study of black music. Letter grading.

**201A. Survey of Black Studies Research: Themes, Issues, and Concepts. (4)** Seminar, three hours. Exploration of selected theoretical constructs, conceptual frameworks, and methodological approaches in discipline of African American studies. Interrogation of some of more significant debates in field as students consider how to engage and utilize these ideas—and epistemological debates around them—in their own work. Students think critically about different forms of intellectual production and scholastic inquiry in field that is now quite broad and interdisciplinary. Letter grading.

**201B. Survey of African American Studies Research Part 2: Introduction to Research Methods. (4)** Seminar, three hours. Prerequisite: course 201A. Research methods and techniques speak to manner of collecting data and carrying out investigations. Research methodologies are groupings of procedures and practices used to illuminate and organize data and phenomena. Exploration of range of research methodologies prominent in Black/Africana studies. Students engage uses of archival research, textual analysis, oral history sources, sound analysis, digital media studies, and quantitative and qualitative approaches to data collection and interpretation. Instructor operates primarily as coordinator, arranging guest presentations and recorded lectures by departmental faculty. Letter grading.

**201C. Research Proposal Writing Seminar. (4)** Seminar, three hours. Prerequisites: courses 201A, 201B. Designed for first-year African American Studies graduate students. Students are assisted in conceptualizing, designing, and writing research proposals. Introduction to other professional research skills which help students prepare for graduate study, academics, and/or research according to their respective areas of interest. Skills include Institutional Review Boards (IRB) or research involving human subjects; securing research grants; funding and understanding their criteria; and writing statements of purpose and personal statements as students. Demystifies thesis writing process and provides students with basic tools for writing successful and highly publishable research essay or thesis. Letter grading.

**M202. Critical Theory of African Diaspora. (4)** (Same as Anthropology M245.) Seminar, four hours. Introduction to variety of ideas that underlie articulation of construct of African diaspora. Structured through understanding of African diaspora as historical formation, with focus on African diaspora as distinct intellectual project. Exploration of ways scholars have conceptualized and theorized diasporic condition of Black peoples. Consideration of who belongs to African diaspora community, and how this community is imaged. S/U or letter grading.

**203A. Pan-Africanism: History and Historiography, 1804-1974. (4)** Seminar, three hours. Pan-Africanism is among most contested, misunderstood, and misrepresented political theories and social movements to emerge in history of African diaspora and Black world. It is arguably also among most important, having influenced generations of Black intellectuals and activists while playing fundamental role in process of decolonization and African and Caribbean independence. Study of history and ideas of pan-African thought from its origins in 19th century to moment of its existential crisis in 1970s. S/U or letter grading.

**203B. Readings in African Political Economy. (4)** Seminar, three hours. Multidisciplinary approach to study of African political economy. While grounded in discipline of history, study prepares students to actively engage with social sciences—in particular economics, political science, and anthropology. Study of Africa's economic past from initial scholarship in 1960s and 1970s on questions such as how Africa was integrated into world economy, and causes to of wealth and prosperity; to questions of governance in 1990s. S/U or letter grading.

**CM210. Bibliography and Research Methods in Rap Music/Hip-Hop Studies. (4)** (Same as Ethnomusicology CM220.) Seminar, three hours. Preparation: ongoing work or preparatory research in rap music/hip-hop studies. Designed for graduate students conducting research on hip-hop in preparation for comprehensive examination preparation, and graduate research projects including master's thesis and dissertation. In-depth examination of intellectual history of rap music/hip-hop studies scholarship. Examination of readings related to intellectual history of rap music scholarship and allied traditions (including breakdance and graffiti). Exploration of broad range of research methods and archival/library centers specific to hip-hop studies. Concurrently scheduled with course CM110. Letter grading.

**C210D. Posthumans. (4)** Seminar, three hours. Denaturalization of concept of human and with it uniquely western philosophical commitments that sustain imagined boundaries between human and non-human, modern and pre-modern, male and female, abled and disabled, chosen and condemned, indigenous and European, African and whiteness, religious and secular. Exploration of formation of human throughout long course of Euro-American intellectual history and its contemporary posthuman formations. Study is informed by range of theoretical work that covers meaning of modernity, liberalism, inter-species relationships, critical race theory, conceptual problems in evolutionary biology, and public health. Concurrently scheduled with course CM110D. S/U or letter grading.

**M211. Seminar: African American Music. (4)** (Same as Ethnomusicology M211.) Seminar, three hours. Prerequisites: Ethnomusicology M110A, M110B. Designed for graduate students. In-depth examination of intellectual history of African American music scholarship. Intensive investigation of problems, theories, interdisciplinary methods/schools of research, and bibliography related to study of African American music. Letter grading.

**CM213XP. Narratives of Justice: Disrupting School-to-Prison Pipeline—Arts, Activism, and Agency. (4)** (Formerly numbered CM213.) (Same as Education CM229B.) Lecture, four hours; discussion, one hour. Exploration of policies and practices, art and activism, and other forms of agency engaging school-to-prison pipeline. Concurrently scheduled with course CM113XP. S/U or letter grading.

**CM213B. Legislative Theater for Race and Gender Justice. (5)** (Same as World Arts and Cultures CM213B.) Lecture, three hours; discussion, one hour (when scheduled). Exploration and application of range of interactive methods and arts-based strategies with participants from UCLA and broader Los Angeles community in order to research and influence public policy and legislative change. Students and campus partners create and perform legislative theater addressing issues of race, gender, and criminal justice system. Critical texts, collaborative work, and creative methods are used to engage perspectives on justice. Analysis of diverse and growing body of work on systems of justice through research, writing, workshops, performances, and critiques of own original writings and performances developed in response to visiting scholars and community partners. Concurrently scheduled with course CM113B. S/U or letter grading.

**CM235A. African American Art before 1900. (4)** (Same as Art History CM235A.) Lecture, three hours. Detailed inquiry into work to circa 1900 of African American artists whose works provide insightful and

critical commentary about major features of American life and society. Concurrently scheduled with course CM135A. S/U or letter grading.

**CM235B. African American Art, 1900 to 1963. (4)** (Same as Art History CM235B.) Lecture, three hours. Detailed inquiry into work of African American artists from Columbian Exposition to 1963 March on Washington within context of social, political, and cultural engagement, as well as in codification of modern black life in U.S. Concurrently scheduled with course CM135B. S/U or letter grading.

**M240. Assessment and Treatment of African American Families. (3)** (Same as Psychiatry M240.) Seminar, two hours. Designed for graduate students. Course aids mental health professionals and trainees in evaluation and treatment of African American families in terms of their cultural milieu, historical background, and economic status. Didactic presentations by instructors and invited guests form basis for supervised evaluation and case management with African American children and families. Letter grading.

**241. Special Topics in Afro-American Studies. (4)** Lecture, four hours; discussion, one hour. Intensive research and study of major themes and issues in various areas of Afro-American studies. S/U or letter grading.

**M256. Topics in African American Art. (4)** (Same as Art History M236.) Seminar, three hours. Requisite: course CM235A or CM235B. Topics in African American art from 18th century to present. May be repeated for credit with consent of graduate adviser. S/U or letter grading.

**C266. Future of Work in Decarcerated California. (4)** Seminar, three hours. Limited to students in Community Scholars program. Exploration of scope of employment and nature of jobs that are attached to current system of mass incarceration in California, with focus on Los Angeles county. Study of history and evolution of carceral system and its relationship to oppression of Black people, poor, and other stigmatized groups. Exploration of history of employment discrimination against Black workers and how successful demand for unionized government jobs (public sector work) evolved as anti-discrimination remedy. Investigation of work, especially by people of color, in existing carceral regimes, and its impact on individual worker wellness and community well-being. Examination of tension between racial justice agendas to decarcerate California and those to prevent downward mobility of workers of color recruited by state to carry out failed policies of war on drugs. Concurrently scheduled with course CM166. S/U or letter grading.

**C266B. Future of Work in Decarcerated California II: Applied Research and Policy Analysis for Implementation of Justice Transformation. (4)** Seminar, three hours. Limited to students in Community Scholars program. Requisite: course C266. Second course in two-quarter participatory action research program that partners students with community-based change agents. Study involves project-based learning in groups made up of undergraduate and graduate students and community members. Students contribute to development of collective policy platform that centers recommendations of formerly employed and formerly incarcerated people in broader community vision for transitioning to decarcerated workforce. Concurrently scheduled with course CM166B. S/U or letter grading.

**270A. Survey of Afro-American Research. (4)** Seminar, three hours. Overview of research methodologies in humanities and social sciences, with firsthand reports from faculty in various fields. Introduction to research in and related to Afro-American studies and application of such research. Letter grading.

**C291. Variable Topics in Afro-American Studies. (4)** Seminar, four hours. Research seminar on selected topics in Afro-American studies. Reading, discussion, and development of culminating project. May be repeated for credit. Concurrently scheduled with course C191. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guid-

ance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Readings and Tutorials. (4)** Tutorial, to be arranged. Provides students with umbrella under which they can pursue specialized interests from which there is insufficient demand to warrant offering formal courses. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination. (4 or 8)** Tutorial, to be arranged. Limited to graduate students. May not be applied toward MA course requirements. S/U grading.

**598. Research for and Preparation of MA Thesis. (4 or 8)** Tutorial, to be arranged. Limited to graduate students. May not be applied toward MA course requirements. S/U grading.

## AFRICAN STUDIES

*Interdepartmental Program  
College of Letters and Science*

10256 Bunche Hall  
Box 951487  
Los Angeles, CA 90095-1487

### African Studies

310-206-6571  
Program e-mail

W. Harold Torrence, PhD, *Chair*

## Faculty Committee

Hannah C. Appel, PhD (*Anthropology*)  
Andrew Apter, PhD (*Anthropology, History*)  
Edith Mukudi Omwami, PhD (*Education*)  
Jemima Pierre, PhD (*African American Studies, Anthropology*)  
Stephanie B. Santana, PhD (*Comparative Literature*)  
Paula A. Tavrow, PhD (*Community Health Sciences*)  
Dominic R. Thomas, PhD (*Comparative Literature, European Languages and Transcultural Studies*)  
W. Harold Torrence, PhD (*Linguistics*)  
Hollian Wint, PhD (*History*)  
Alden H. Young, PhD (*African American Studies, Sociology*)

## Overview

The intellectual objective of the African Studies MA program is to provide graduate students with the opportunity to engage in intensive study and research on Africa on an interdisciplinary basis. The program offers African area courses in a wide range of disciplines, including the fine arts, social sciences, humanities, and professional fields. A concurrent degree program is also offered where students can work for the MA in African Studies and the Master of Public Health (MPH) at the same time.

Academic flexibility draws many students to the program. Because there are more than 50 active faculty members on campus with African interest and experience in many disciplines, students have multiple options to design individualized programs suited to their specific interests.

Information on the undergraduate major and minor in African and Middle Eastern Studies

and the minor in African Studies can be found in the [International and Area Studies](#) section.

## Graduate Major

### African Studies MA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

#### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- African Studies MA/Master of Public Health

## African Studies

### Graduate Courses

**201A. Africa and Disciplines. (4)** Seminar, four hours. Major intellectual trends and currents in development of African studies. Emphasis on appreciation of multidisciplinary background of African studies and relevant interpretive strategies. Central questions, critical issues, and current problems affecting Africa. Content varies each year. Letter grading.

**201B. Africa and Professions. (4)** Seminar, three hours. Exploration of key contributions and debates of academic disciplines in African studies, with emphasis on professional dimension. Review of discipline's literature, resources, career opportunities, and professionals themselves. Letter grading.

**296. Africanist Working Group. (1 to 2)** Research group meeting, one hour per week per unit. Collaborative exploration and discussion of current research and literature on modern Africa. Specific projects determined by research being conducted by working group participants. Activities include designing and refining research proposals, gathering and analyzing data, and interpreting and reporting results, as well as presenting research to receive critical feedback from other class participants. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Limited to graduate African studies students. May be repeated, but only 4 units may be applied toward minimum graduate course requirement. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination. (4)** Tutorial, to be arranged. Limited to graduate African studies students. Normally taken only during term in which student is being examined. May not be applied toward minimum graduate course requirement. S/U grading.

**598. Research for and Preparation of MA Thesis. (4)** Tutorial, to be arranged. Limited to graduate African studies students. Normally taken only during term in which student intends to complete MA thesis. May not be applied toward minimum graduate course requirement. S/U grading.

## AMERICAN INDIAN STUDIES

*College of Letters and Science*

3220 Campbell Hall  
Box 951548  
Los Angeles, CA 90095-1548

**American Indian Studies**

310-825-6541

**Department e-mail**

Paul V. Kroskrity, PhD, *Interim Chair*

### Faculty Roster

#### Professors

Paul V. Kroskrity, PhD  
Shannon E. Speed, PhD

#### Associate Professors

Randall K.Q. Akee, PhD  
Erin K. Debenport, PhD

### Overview

Because UCLA possesses a substantial number of faculty members in the humanities and social sciences engaged in teaching and conducting research on American Indians, the nation's first interdisciplinary MA program in American Indian Studies was established here.

### Undergraduate Study

The Bachelor of Arts (BA) degree and the undergraduate American Indian Studies minor offer a general introduction for students who anticipate advanced study at the graduate level in American Indian studies; ethnic studies; and the traditional disciplines or careers in research, administration, public service, and community service related to American Indian communities.

### Graduate Study

The Master of Arts (MA) program draws primarily on existing courses in the participating departments, where research and research methodologies are of primary concern. Students are exposed to Indian-related research in a number of different disciplines; demonstration of research skills is required. Students graduate with the training they need to teach Native American studies or to serve in an administrative capacity in Indian programs or organizations. The MA program ranks among the top Indian studies programs in the country.

## Undergraduate Major

### American Indian Studies BA

The American Indian Studies BA program is designed to offer a coherent and comprehensive curriculum in American Indian cultures, societies, and contemporary issues in addition to valuable background in more traditional disciplines such as anthropology, art history, economics, education, history, law, linguistics, literature, sociology, and world arts and cultures. Students acquire a critical knowledge of the concepts, theories, and methods that have produced knowledge about American Indians in the traditional disciplines. Students are encouraged to develop a concentration—or special expertise—in these fields to accompany the major.

The curriculum encompasses the cultural, historical, political, and social experiences of Native Americans in the Americas. Through courses on Native American literature, languages, theater, and contemporary societies and through more culturally specific courses on California Indians, cultures of the Pueblo southwest, and so on, the major offers an in-depth and broad knowledge on the experience of Native Americans not only in the U.S. and Canada but in Mexico and elsewhere in Latin America as well.

Given the increasingly multicultural society of the U.S. and the economic revitalization of many Native American communities, a knowledge of American Indian studies greatly enhances the professional and scholarly contributions attainable for those seeking postgraduate degrees in various related disciplines and fields.

### Capstone Major

The American Indian Studies major is a designated capstone major. Seniors complete a research/service experience and participate in a tutorial where faculty members help them relate their course-derived academic experience to their original research/service efforts involving Native American communities. Through their capstone work, students demonstrate their skills at analyzing and synthesizing knowledge, show their capacity to work collaboratively with peers, and display their capacity to relate their academic research and discourse to Native American community needs and concerns. Students present their work at the academic year-end Research Symposium sponsored by the American Indian Studies Interdepartmental Program.

### Learning Outcomes

The American Indian Studies major has the following learning outcomes:

- Demonstrated analysis and knowledge-synthesis skills gained through completion of written capstone thesis
- Identification of a key idea or theme of interest drawn from coursework
- Effective public presentation of selected theme in final paper and/or project

- Relation of academic research and discourse to Native American communities' needs and concerns
- Communication of statistical and quantitative information to appropriate communities
- Display capacity to work collectively with peers to effectively analyze and synthesize knowledge

### Entry to the Major

#### Transfer Students

Transfer applicants to the American Indian Studies major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one introduction to American Indian studies course and two courses from culture and society, introduction to gender studies, introduction to American politics, or introduction to statistical methods.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* American Indian Studies M10 and two courses from Anthropology 3, Gender Studies 10, Political Science 40, Statistics 12.

#### The Major

Requirements are distributed according to certain categories to create a breadth of knowledge. Students are required to take a research methods course to become familiar with scholarly techniques of knowledge production and to critically regard academic research, as well as a course in either ethnic/race/gender relations or comparative indigenous studies. Additional courses are selected in the social sciences and humanities according to a distributional formula that encourages further specialization within either of these two broad areas while simultaneously adding additional breadth. Finally, American Indian Studies C122XP prioritizes the experiential dimension of involvement in Native American communities (either urban, reservation, or rancharia) through work that supplies service experience and/or supervised internship opportunities.

The 12 courses must fit one of the following regional emphasis patterns: (1) Native North America—eight courses, including those mentioned below and additional electives on Native North American topics or (2) indigenous peoples of the Americas—eight courses, including at least four dealing with indigenous people in Central America and/or South America.

Students must complete 12 upper-division courses (48 units) as follows, with no more than 32 units from American Indian studies courses:

1. Ten core courses (40 units), including (a) American Indian Studies M161, (b) two *language* courses from Anthropology M150, 155, Linguistics 114, (c) two *history or law* courses from American Indian Studies 140, 158, C170, History 149A, 149B, 157B, (d) one *social sciences* course from American Indian Studies C120, C121, C130, C175, C178, Anthropol-



ogy 160A, or 162, (e) two *expressive culture* courses from American Indian Studies 180, Art History 137, CM139A, C139B, English 106, Ethnomusicology 106A, 106B, Theater 103F, 107, (f) one *methodology* course from Anthropology 138P, Art History 100, Community Health Sciences 181, Comparative Literature 100, Linguistics 160, Political Science 170A, Sociology 106A, 113, or World Arts and Cultures 195, and (g) either one *ethnic/race/gender relations* course (African American Studies M164, Anthropology M145Q, 145S, Asian American Studies 130A, M130B, M130C, 131A, 132A, 133, 134, Chicana/o and Central American Studies CM182, Film and Television 128, Gender Studies 130, 168, Sociology 154, 156, or M162) or one *comparative indigenous studies* course (Anthropology 143, Geography M126, History 135A, or Sociology 157)

2. American Indian Studies C122XP (experiential service learning or supervised internship)
3. American Indian Studies 199C (capstone course)

### Honors Program

Students must take American Indian Studies 198A-198B-198C with a professor who agrees to mentor and guide them through the stages of senior essay design and development during their senior year. Completion of a senior thesis is required.

### Policies

#### Preparation for the Major

Each course must be completed with a grade of C or better.

#### The Major

Each course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better. No more than two independent studies courses (199s) may be applied toward the degree.

### Honors Program

All junior and senior American Indian Studies majors who have a cumulative grade-point average of 3.0 or better and at least a cumulative GPA of 3.5 in coursework in the major are eligible to apply. Consult the student affairs officer for more information.

To qualify for graduation with honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in the major course requirements and an overall GPA of 3.0 or better, and (3) complete American Indian Studies 198A-198B-198C, taken with a professor who agrees to mentor and guide them through the stages of senior essay design and development during their senior year. Completion of a senior thesis is required.

## Undergraduate Minor

### American Indian Studies Minor

The American Indian Studies minor is designed for students who wish to augment their major program of study in the College of Letters and Science with a group of related courses from various disciplines germane to American Indian studies. The minor exposes students to Indian-related research and literature in a number of different disciplines such as American Indian studies, anthropology, economics, history, political science, sociology, and theater.

### Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average), have completed 45 units, and file a petition at the American Indian Studies Center, 3220 Campbell Hall. All degree requirements, including the specific requirements for this minor, must be fulfilled within the unit maximum set forth by the College of Letters and Science.

### The Minor

*Required Lower-Division Course (5 units):* American Indian Studies M10 with a grade of C or better.

*Required Upper-Division Courses (28 units):* Seven courses selected from the following: (1) one American Indian languages and communication systems course (Anthropology 155 or Linguistics 114); (2) three history and social sciences courses from American Indian Studies C120, C121, C122XP, C130, 140, 158, C170, C175, C178, Anthropology 113Q, 113R, 114P, 114Q, Gender Studies 130, History 149A, 149B, 157B, Sociology M161; (3) three humanistic perspectives on language and expressive culture courses from American Indian Studies 180, Art History 137, CM139A, English 106, 180, Ethnomusicology 106A, 106B, Theater 103F.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units applied toward the minor must be taken in residence at UCLA. Transfer credit for any of the above is subject to program approval; consult with the interdepartmental adviser before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade, and students must have a minimum grade of C (2.0) in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### American Indian Studies MA Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- American Indian Studies MA/Juris Doctor

## American Indian Studies Lower-Division Courses

**M10. Introduction to American Indian Studies. (5)** (Same as World Arts and Cultures M23.) Lecture, three hours; discussion, one hour; activity, one hour. Survey of selected Native North American cultures from pre-Western contact to contemporary period, with particular emphasis on early cultural diversity and diverse patterns of political, linguistic, social, legal, and cultural change in postcontact period. P/NP or letter grading.

**M18. Leadership and Student-Initiated Retention. (2)** (Same as African American Studies M18, Asian American Studies M18, and Chicana/o and Central American Studies M18.) Seminar, two hours. Limited to freshmen/sophomores/first-year transfer students. Not open for credit to students with credit for course M118. Exploration of issues in retention at UCLA through lens of student-initiated and student-run programs, efforts, activities, and services. Focus on populations with historically low graduation rates targeted by Campus Retention Committee. May not be applied toward departmental major or minor elective requirements. May be repeated once for credit. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M118. Student-Initiated Retention and Outreach Issues in Higher Education. (4)** (Same as African American Studies M118, Asian American Studies M168, and Chicana/o and Central American Studies M118.) Lecture, four hours. Exploration of issues in outreach and retention of students in higher education, especially through student-initiated programs, efforts, activities, and services, with focus on UCLA as case. May be repeated twice for credit. Letter grading.

**C120. Working in Tribal Communities: Introduction. (4)** Lecture, four hours. Through readings, discussion, and Native guest lecturers, students learn to participate within Native American communities engaged in political, social, and cultural processes of change and preservation. Development of proposal for Native nation-building project. Concurrently scheduled with course C220. Letter grading.

**C121. Working in Tribal Communities: Preparing for Fieldwork. (4)** Lecture, four hours. Through readings, discussion, Native guest lecturers, and project participation, introduction to rules of conduct and skills necessary to successfully work or carry out community service projects for Native American communities and organizations. Concurrently scheduled with course C221. Letter grading.

**C122XP. Working in Tribal Communities: Community-Engaged Learning. (4)** (Formerly numbered C122SL.) Seminar, one hour; fieldwork, four hours. Enforced prerequisite: course C121. Recommended: course C120. Participation in community service learning project within Native American communities and organizations where students are mentored and supported by faculty members, other students, and project directors toward completing assigned service learning tasks and contributing to project activities. May be repeated with consent of instructor. Concurrently scheduled with course C222XP. Letter grading.

**M123. Afro-Indigenous History: from Enslavement and Settlement to Black Lives Matter and Indigenous Sovereignty. (4)** (Same as African American Studies M121.) Lecture, four hours; discussion, one hour. Examination of how race was developed through experiences of African-descended peoples and indigenous people in U.S. and beyond. Examination of key episodes in history. Using articles, books, documentaries, and contemporary popular culture, examination of relationship between people of African descent and indigenous people. Study takes broad, thematic approach. Topics include first encounters in Americas and ideologies that led to enslavement and dispossession; period of enslavement and indigenous removal in 19th century; mid-20th-century social movements; and contemporary manifestations, especially solidarity shown between Black Lives Matter and Dakota Access Pipeline protesters. P/NP or letter grading.

**M129. Participatory Action Research on Youth Organizing for Racial Justice. (4)** (Same as African American Studies M129B, Asian American Studies M128, Chicana/o and Central American Studies, and Public Affairs M122.) Lecture, four hours. Students are trained to conduct participatory action research on grassroots youth organizing across California. Students gain historical and theoretical background on multi-racial and inclusive organizing. Students learn how to collect and analyze data pertaining to pressing organizing issues. Study and critical analysis of youth organizing strategies. Weekly training modules on data collection and grassroots organizing strategies that prepare students for internships in grassroots youth organizing groups serving Asian American, Black, Latinx, and Native American communities. P/NP or letter grading.

**C130. California Indian Strategies for Contemporary Challenges. (4)** Seminar, three hours. Through readings, discussion, and Native guest lecturers, introduction to contemporary issues and processes of self-directed social change and political, cultural, legal, and economic processes of nation building in contemporary California Native communities. Concurrently scheduled with course C230. Letter grading.

**140. Federal Indian Law and Policy. (4)** Lecture, four hours. Through readings, discussion, and Native guest lecturers, introduction to fundamental concepts and history of federal Indian law and policy. Investigation of contemporary policies and legal issues and exploration of Native responses to policy and law. Letter grading.

**C145. Contemporary Indigenous Nations. (4)** Seminar, three hours. Introduction to topics on contemporary indigenous nations, including social movements, social and cultural change and continuity, nation building, law and justice relations, economic development, education and socialization, international relations, comparative policy, colonialism, migration, national and social identities, and other issues and social cultural processes, seen as distinct from ethnicity, race, class, and nation, with focus on indigenous communities that have maintained self-government, territory, and culture. Investigation and search for analytic and policy patterns that give greater understanding and knowledge about current conditions and social and cultural processes of indigenous nations. Concurrently scheduled with course C245. Letter grading.

**158. Nation Building. (4)** Lecture, three hours; fieldwork/research, nine hours. Limited to junior/senior American Indian Studies majors. Examination of historical interplay of federal policies with tribal cultures that has shaped political development of American Indian tribal nations. Current developments within Indian nations, including restructuring government, developing economies, and asserting cultural sovereignty to be subject of research, study, and required community-based projects. Letter grading.

**M161. Comparative American Indian Societies. (4)** (Same as Sociology M161.) Lecture, three hours. Requisite: course M10 or Sociology 1. Comparative and historical study of political, economic, and cultural change in indigenous North American societies. Several theories of social change, applied to selected case studies. Letter grading.

**M162. Language Endangerment and Linguistic Revitalization. (4)** (Same as Anthropology M156.) Lecture, three hours; activity, one hour. Requisites: course M10, Anthropology 4. Examination of causes and consequences of current worldwide loss of linguistic diversity and revelation of kinds of efforts that members of threatened heritage language communities have produced in their attempt to revitalize these languages. Projected loss of as many as half of world's languages by end of 21st century can only be explained as outcome of such factors as nationalism, global economic forces, language ideological change, and language shift away from smaller indigenous and tribal languages. Since loss of such languages means both reduction of cultural as well as linguistic diversity, many affected communities have engaged in various language renewal practices. Examination of some diverse strategies that have been attempted, including immersion, language and culture classes, master-apprentice, interactive multimedia, mass media approaches, and language policy-reform approaches. Evaluation of effectiveness of these measures and of very imagery used to discuss language endangerment. P/NP or letter grading.

**CM168. Healthcare for American Indians. (4)** (Same as Health Policy M168.) Lecture, two hours; discussion, one hour. Identification of traditional health beliefs, health practices, and healthcare systems of American Indian tribes to understand role of U.S. government in healthcare services for Indian people. Description of health problems that have affected American Indian people and definition of contemporary health issues and measures taken to raise health status of American Indian people. Concurrently scheduled with course C268. Letter grading.

**C170. California Indian History. (4)** Lecture, four hours. Introduction to overview of California Indian history, specific tribal community histories, and/or contemporary California Indian history through readings, discussion, and Native guest lecturers. May be repeated for credit with topic change and consent of interdepartmental chair. Concurrently scheduled with course C270. Letter grading.

**C175. Cultures of Native Southern California. (4)** Lecture, three hours. Introduction to Southern California indigenous societies through readings, discussion, guest lecturers, and direct community participation. May be repeated for credit with topic and/or instructor change and consent of interdepartmental chair. Concurrently scheduled with course C275. Letter grading.

**C178. California Experiences in Native Cultural Resource Management. (4)** Seminar, three hours. Exploration of creation and implementation of laws that affect cultural resource management in California, such as California Environmental Quality Act (CEQA), Native American Graves Protection and Repatriation Act (NAGPRA), AB 978 (California NAGPRA), American Indian Religious Freedom Act, National Environmental Policy Act (NEPA), and National Historic Preservation Act (NHPA), from applied standpoint. To understand goals and challenges of these laws, examination of series of cases from California sites. Concurrently scheduled with course C278. Letter grading.

**180. Introduction to and Practicum in Native American Languages. (4)** Lecture, three hours; laboratory, one hour. Development of ability to converse, read, and write at elementary level in Native American languages. Introduction to both phonological and grammatical structures, vocabulary, and cultural patterns of using language as symbolic guide to culture. May be repeated with language change and approval of interdepartmental chair. Letter grading.

**M186. Indigenous Film. (5)** (Same as World Arts and Cultures M187.) Lecture, four hours; discussion, one hour. Introduction to study of indigenous filmic images and representations, with focus on selected ethnographic, documentary, animated, and feature films ranging from 1920 to present. P/NP or letter grading.

**187. Special Topics in American Indian Studies. (4)** Lecture, four hours. Variable topics selected from following: Myth and Folklore of Indian Societies; Contemporary American Indian Literature; Social Science Perspectives of American Indian Life; Law and American Indian; History of American Indians (cultural area); Dance and Music of American Indians (cultural area); American Indian Policy. Consult Schedule of Classes for topics and instructors. May be repeated twice for credit. Letter grading.

**M187A. Special Topics in American Indian and Gender Studies. (4)** (Same as Gender Studies M185A.) Lecture, three hours. Variable topics in American Indian and gender studies. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Community Internships in American Indian Studies. (4)** Tutorial, two hours; fieldwork, eight hours. Requisite: course M10. Limited to juniors/seniors. Internship in supervised setting in community agency. Students meet on regular basis with instructor and provide periodic reports on their experience. Designed to integrate theory and practice through experiential learning to gain firsthand knowledge of diversity, complexity, and variety of needs of American Indian communities. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP grading.



**M195CE. Comparative Approaches to Community and Corporate Internships. (4)** (Same as African American Studies M195CE, Asian American Studies M195CE, Chicana/o and Central American Studies M195CE, and Gender Studies M195CE.) Tutorial, one hour; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Comparative study of race, gender, and indigeneity in relation to contemporary workplace dynamics. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in American Indian Studies. (2 to 4)** Tutorial, three hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned readings and tangible evidence of mastery of subject matter required. May be repeated for maximum of 16 units. Individual contract required. P/NP or letter grading.

**198A-198B-198C. Honors Research in American Indian Studies. (4-4-4)** Tutorial, one hour; activity, three hours. Course 198A is enforced requisite to 198B, which is enforced requisite to 198C. Limited to senior honors program students. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. Each course may be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in American Indian Studies. (2 to 8)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199C. Individual Studies: Capstone Synthesis. (4)** Tutorial, three hours. Preparation: successful completion of eight upper-division major courses. Limited to senior American Indian Studies majors. Faculty members help students relate their course-derived academic experience to their original research/service efforts involving Native American communities. Completion of research paper and presentation of student work at year-end Research Symposium required. Must be taken in conjunction with American Indian Studies C122SL or an alternative upper-division course approved by program chair and academic coordinator. Individual contract required. Letter grading.

## Graduate Courses

**M200B. Cultural World Views of Native America. (4)** (Same as English M266.) Seminar, three hours. Exploration of written literary texts from oral cultures and other expressive cultural forms—dance, art, song, religious and medicinal ritual—in selected Native American societies, as these traditional and tribal contexts have been translated into contemporary literary texts (fiction, poetry, essay, and drama). Survey, from secondary sources, of interdisciplinary methodological approaches taken from literary analysis, structural anthropology, folklore, linguistics, and ethnomusicology. May be repeated for credit with instructor and/or topic change. Letter grading.

**M200C. Contemporary Issues of American Indians. (4)** (Same as Anthropology M244P and Sociology M275.) Seminar, three hours. Introduction to most important issues facing American Indians as individuals, communities, tribes, and organizations in contemporary world, building on historical background presented in course M200A and cultural and expressive experience of American Indians presented in course M200B. Letter grading.

**201. Introduction to Interdisciplinary Methods in American Indian and Indigenous Studies. (4)** Lecture, three hours. Faculty present approaches to interdisciplinary studies and discuss their own research. Participants include wide range of faculty whose re-

search and teaching balance disciplinary and theoretical approaches with interdisciplinary approaches to American Indian studies and indigenous studies. S/U or letter grading.

**202. Key Theories and Concepts in American Indian Studies. (4)** Lecture, three hours. Addresses key intellectual movements and concepts (such as sovereignty, self-determination, colonialism, decolonization, etc.) that are central to formation of American Indian/indigenous studies as discipline. Research and collaboration with indigenous communities is highlighted as core methodological and ethical approach to knowledge acquisition, fieldwork, and theorization. Historical overview of defining moments in American Indian political and social developments as basis for gaining deeper understanding of American Indian intellectual traditions over time. S/U or letter grading.

**M203. Advanced Historiography: American Indian Peoples. (4)** (Formerly numbered M200A.) (Same as History M200W.) Lecture, 90 minutes; seminar, 90 minutes. Introduction to culture-histories of North American Indians and review of Indian concepts of history. Stereotypical approach to content and methodologies related to Indian past that is interdisciplinary and multicultural in its scope. Letter grading.

**M207. Economic Principles and Economic Development in Indigenous Communities. (4)** (Formerly numbered M200D.) (Same as Public Policy M270.) Seminar, two hours; discussion, one hour. Limited to graduate students. Familiarization with fundamental concepts, themes, and principles of economic development. Focus on indigenous communities broadly and contrasted with other regions, countries, and communities. Introduction to important concepts such as opportunity cost, economic trade-offs, adverse selection, moral hazard, and discount rates through use of existing research and case studies. These basic concepts are important for graduate students who will be analyzing and evaluating research conducted on and for indigenous peoples and governments. S/U or letter grading.

**M208. Native American Languages and Discourses of Indigeneity. (4)** (Same as Anthropology M208.) Seminar, three hours. Preparation: prior coursework in anthropology, linguistics, or American Indian studies. Close reading and discussion of books and articles on topics relating to Native American languages and discourse of indigenous communities. Topics include critical language documentation, multilingualism, indigenous language practices, language ideologies, policies and practices of publication and concealment, language revitalization, language and identity, language and construction of place, storytelling and performance, community/academic collaboration, language as intellectual property, linguistic expressions of indigeneity, and cultural sovereignty. Offers resources to understand situation of indigenous languages in wide range of Native American communities. Students perform variety of roles in discussions, develop book reviews, grant proposals, critical essays, and—where appropriate—sections of their theses and dissertations. S/U or letter grading.

**C220. Working in Tribal Communities: Introduction. (4)** Lecture, four hours. Through readings, discussion, and Native guest lecturers, students learn to participate within Native American communities engaged in political, social, and cultural processes of change and preservation. Development of proposal for Native nation-building project. Concurrently scheduled with course C120. S/U or letter grading.

**C221. Working in Tribal Communities: Preparing for Fieldwork. (4)** Lecture, four hours. Through readings, discussion, Native guest lecturers, and project participation, introduction to rules of conduct and skills necessary to successfully work or carry out community service projects for Native American communities and organizations. Concurrently scheduled with course C121. S/U or letter grading.

**C222XP. Working in Tribal Communities: Community-Engaged Learning. (4)** (Formerly numbered C222SL.) Seminar, one hour; fieldwork, four hours. Enforced requisite: course C221. Recommended: course C220. Participation in community service learning project within Native American communities and organizations where students are mentored and supported

by faculty members, other students, and project directors toward completing assigned service learning tasks and contributing to project activities. May be repeated with consent of instructor. Concurrently scheduled with course C122XP. Letter grading.

**228A-228B. Tribal Legal Systems. (228A: 3 or 4/ 228B: 1 or 2)** Seminar, two hours. Course 228A is enforced requisite to 228B. Study of traditional and contemporary legal systems of Native American tribal nations. Detailed examination of several different tribal systems, including Navajo, Cherokee, Iroquois, and Hopi, with emphasis on diversity of tribal legal regimes, comparisons with Anglo-American legal system, changes in tribal systems during period of contact with non-Indians, and relationship between tribes' legal systems and other aspects of their cultures, such as religion and social structure. Independent research paper with focus on contemporary or historic topic required. Concurrently scheduled with Law 528. In Progress (228A) and S/U or letter (228B) grading.

**C230. California Indian Strategies for Contemporary Challenges. (4)** Seminar, three hours. Through readings, discussion, and Native guest lecturers, introduction to contemporary issues and processes of self-directed social change and political, cultural, legal, and economic processes of nation building in contemporary California Native communities. Concurrently scheduled with course C130. S/U or letter grading.

**238A-238B. Tribal Legal Development Clinic. (238A: 3/238B: 1)** Lecture, three hours. Course 238A is enforced requisite to 238B. Students provide nonlitigation legal assistance to Indian nations. Projects include development and modification of tribal legal codes and constitutional provisions, creation of tribal dispute resolution processes, and drafting of intergovernmental agreements. Legislative drafting and cross-cultural representation skills emphasized. Faculty members meet with tribal leaders to inform them of availability of clinic services and determine whether clinic could assist them with their legal development needs. Once students are assigned to particular projects, they meet with relevant tribal officials and community groups with travel funds supplied. Students learn about tribal governments and legal systems, including federal constraints on activities of tribal legal institutions, and culture of tribe they are representing to be able to craft legislation and other documents that meet tribal intentions and needs. Concurrently scheduled with Law 728. In Progress (238A) and S/U or letter (238B) grading.

**C245. Contemporary Indigenous Nations. (4)** Seminar, three hours. Introduction to topics on contemporary indigenous nations, including social movements, social and cultural change and continuity, nation building, law and justice relations, economic development, education and socialization, international relations, comparative policy, colonialism, migration, national and social identities, and other issues and social cultural processes, seen as distinct from ethnicity, race, class, and nation, with focus on indigenous communities that have maintained self-government, territory, and culture. Investigation and search for analytic and policy patterns that give greater understanding and knowledge about current conditions and social and cultural processes of indigenous nations. Concurrently scheduled with course C145. S/U or letter grading.

**261. Comparative Indigenous Societies. (4)** Lecture, two hours; discussion, two hours. Designed for graduate students. Investigation of detailed historical and contemporary ethnographic analyses of social change and cultural continuity within indigenous nations, primarily of U.S., but elsewhere also. Discussion of theories of change, comparative methodologies, and case materials. Letter grading.

**265. Federal Indian Law I. (4 or 6)** Lecture, three to four hours. Overview of federal Indian law, including nature and history of tribal federal legal and political relationship; basic legal definitions within federal Indian law (such as what is Indian country); equal protection issues posed by federal Indian legislation; canons of construction unique to Indian law; tribal sovereignty and its protection; basic questions of federal and state authority within Indian country; and

tribal, federal, and state jurisdiction in Indian country according to default rules as well as special statutory regimes. May be concurrently scheduled with Law 267. S/U or letter grading.

**M265A-265B. Federal Indian Law I. (1 to 8 each)** (Same as Law M267.) Lecture, three hours. Course M265A is enforced requisite to 265B. Overview of federal Indian law through study of cases and historical and contemporary materials. Basic conflicts among sovereign governments that dominate this area of law, especially conflicts over criminal, civil adjudicative, and regulatory jurisdiction. Special attention to status and sovereign powers of Indian nations as recognized under U.S. law, federal trust responsibility, and equal protection issues posed by federal and state legislation singling out Indian nations and tribal members. Federal statutory regimes regulating tribal gaming and child welfare included. Students gain critical understanding of basic tenets of Indian law, bases of tribal sovereignty, structure of federal-tribal relationship and its history, and sense of future directions courts, tribes, and Congress may take in addressing current legal issues in Indian country. In Progress (M265A) and S/U or letter (265B) grading.

**M267. Federal Indian Law II. (1 to 8)** (Same as Law M382.) Lecture, three hours. Requisites: courses 238A and 238B, or M265A and 265B. Examination in-depth of principles and doctrines of federal Indian law as applied to property rights in land, cultural resources, hunting and fishing rights, water rights, and economic development. Special jurisdictional regimes established by federal statutes, such as Indian Child Welfare Act and Indian Gaming Regulatory Act, addressed. S/U or letter grading.

**M267A-267B. Federal Indian Law II. (1 to 8 each)** (Same as Law M382.) Lecture, three hours. Requisites: courses 238A and 238B, or M265A and 265B. Course M267A is enforced requisite to 267B. Examination in-depth of principles and doctrines of federal Indian law as applied to property rights in land, cultural resources, hunting and fishing rights, water rights, and economic development. Special jurisdictional regimes established by federal statutes, such as Indian Child Welfare Act and Indian Gaming Regulatory Act, addressed. In Progress (M267A) and S/U or letter (267B) grading.

**C268. Healthcare for American Indians. (4)** Lecture, two hours; discussion, one hour. Identification of traditional health beliefs, health practices, and healthcare systems of American Indian tribes to understand role of U.S. government in healthcare services for Indian people. Survey of Federal Indian Health programs and development of Indian Healthcare System and Tribal/Urban Indian Health programs to understand health problems that have affected American Indian people and definition of contemporary health issues and measures taken to raise health status of American Indian people. Concurrently scheduled with course CM168. Letter grading.

**C270. California Indian History. (4)** Lecture, four hours. Introduction to overview of California Indian history, specific tribal community histories, and/or contemporary California Indian history through readings, discussion, and Native guest lecturers. May be repeated for credit with topic change and consent of interdepartmental chair. Concurrently scheduled with course C170. S/U or letter grading.

**M272. Seminar: Cultural Property Law. (3 or 4)** (Same as Law M514.) Seminar, three hours. Exploration of identity, ownership, appropriation, and repatriation of both tangible and intangible cultural property—those items that are of great significance to cultural heritage and cultural survival of people. Consideration of importance of preservation of cultural property as means of maintaining group identity, self-determination, and collective rights. Examination of both international and domestic law governing these issues, addressing such questions as How should cultural property be defined? Can cultural property be protected under existing intellectual property and cultural property regimes? How can we balance protection of cultural property against need or desire for its use in creative expression or scientific advancement? Examination of cultural property of groups in general, with emphasis on cultural property of indigenous peoples,

including folklore, traditional knowledge, burial grounds, sacred sites, and ancient ceremonies and traditions. S/U or letter grading.

**274. Good Native Governance. (4 or 6)** Seminar, three hours. Examination of legal issues integral to governance that Native American nations face in 21st century, including those that impact and shape political sovereignty, economic development, constitutional reform, membership criteria, cultural property protection, sacred sites, religious freedom, and safety and criminal law enforcement, among others. Emphasis on breadth of issues that lawyers working with and for Native nations must confront. Integration and highlighting of legal issues unique to Native nations within California. Materials from traditional law review articles, books, and case studies derived from field research to engage students in multidimensional settings that confront Native societies. May be concurrently scheduled with Law 637. S/U or letter grading.

**C275. Cultures of Native Southern California. (4)** Lecture, three hours. Introduction to Southern California indigenous societies through readings, discussion, guest lecturers, and direct community participation. May be repeated for credit with topic and/or instructor change and consent of interdepartmental chair. Concurrently scheduled with course C175. S/U or letter grading.

**C278. California Experiences in Native Cultural Resource Management. (4)** Seminar, three hours. Exploration of creation and implementation of laws that affect cultural resource management in California, such as California Environmental Quality Act (CEQA), Native American Graves Protection and Repatriation Act (NAGPRA), AB 978 (California NAGPRA), American Indian Religious Freedom Act, National Environmental Policy Act (NEPA), and National Historic Preservation Act (NHPA), from applied standpoint. To understand goals and challenges of these laws, examination of series of cases from California sites. Concurrently scheduled with course C178. S/U or letter grading.

**280A. Indigenous Peoples in International Law. (2)** Lecture, four hours. Students become familiar with Indigenous peoples' involvement in human rights movement and corresponding developments (drafting of instruments, claims, reports, hearings, and cases) in United Nations, Organization of American States, and other institutions. Particular attention is paid to U.N. General Assembly's 2007 adoption of Declaration on the Rights of Indigenous Peoples, as well as to regional developments around world. Additional focus on challenges of implementing human rights standards to improve situation of Indigenous peoples in domestic settings, including U.S. Study of contemporary instances in which Indigenous peoples have used international human rights system to address issues in self-governance and political participation. Concurrently scheduled with Law 444. In Progress grading (credit to be given only on completion of course 280B).

**280B. Indigenous Peoples in International Law. (1)** Lecture, four hours. Requisite: course 280A. Students become familiar with Indigenous peoples' involvement in human rights movement and corresponding developments (drafting of instruments, claims, reports, hearings, and cases) in United Nations, Organization of American States, and other institutions. Particular attention is paid to U.N. General Assembly's 2007 adoption of Declaration on the Rights of Indigenous Peoples, as well as to regional developments around world. Additional focus on challenges of implementing human rights standards to improve situation of Indigenous peoples in domestic settings, including U.S. Study of contemporary instances in which Indigenous peoples have used international human rights system to address issues in self-governance and political participation. Concurrently scheduled with Law 444. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Studies. (4 to 8)** Tutorial, to be arranged. S/U or letter grading.

**598. Research for and Preparation of MA Thesis. (4 to 8)** Tutorial, to be arranged. Preparation of research data and writing of MA thesis. S/U grading.

## ANESTHESIOLOGY AND PERIOPERATIVE MEDICINE

David Geffen School of Medicine

3304 Reagan UCLA Medical Center  
Box 957403  
Los Angeles, CA 90095-7403

Anesthesiology and Perioperative Medicine

310-267-8655

Maxime Cannesson, MD, PhD, *Chair*

Joe C. Hong, MD, *Executive Vice Chair*

Judi A. Turner, MD, PhD, *Vice Chair, Education*

Thomas M. Vondriska, PhD, *Vice Chair, Research*

John Shin, MD, *Director, Medical Student Education*

## Overview

The medical student program in the Department of Anesthesiology and Perioperative Medicine focuses on the delivery of perioperative care to surgical patients. During their training in the department, students develop clinical skills of medical management of surgical patients, techniques of monitoring and invasive line placement, and airway management skills. They are assigned to work with an attending anesthesiologist and/or anesthesia resident on a daily basis in one of the operating room locations and participate in the preoperative evaluation and preparation of their patients and development of an anesthetic plan. Students then observe how to prepare for and execute their anesthetic plan. They have opportunity to perform procedures as their abilities and the situation permit. In addition, the department's Human Patient Simulator provides students with a simulated operating room setting where a variety of clinical situations are initiated so they can practice their clinical skills. Students are also expected to attend clinically oriented lectures on a wide range of anesthesia topics, including physiology, pharmacology, and critical care.

For more details on the Department of [Anesthesiology and Perioperative Medicine](#) and a list of the courses offered, see the department website.

[Anesthesiology and Perioperative Medicine faculty](#) information is available from the department.

## Anesthesiology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Course

**199. Directed Research in Anesthesiology. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## ANTHROPOLOGY

*College of Letters and Science*

341 Haines Hall  
Box 951553  
Los Angeles, CA 90095-1553

**Anthropology**

310-825-2055

**Department e-mail**

C. Jason Throop, PhD, *Chair*

Abigail W. Bigham, PhD, *Undergraduate Vice Chair*

Brooke A. Scelza, PhD, *Graduate Vice Chair*

## Faculty Roster

### Professors

Stephen B. Acabado, PhD  
H. Samy Alim, PhD  
Andrew Apter, PhD  
H. Clark Barrett, PhD  
Aomar Boum, PhD (*Maurice Amado Professor of Sephardic Studies*)  
Philippe I. Bourgois, PhD, *in Residence* (*Richard D. and Ruth P. Walter Professor of Psychiatry*)  
P. Jeffrey Brantingham, PhD  
Jessica R. Cattellino, PhD  
Jason P. De León, PhD  
Daniel M.T. Fessler, PhD (*Bedari Kindness Institute Endowed Professor*)  
Alan Page Fiske, PhD  
Linda C. Garro, PhD  
Akhil Gupta, PhD  
Laurie K. Hart, PhD  
Douglas W. Hollan, PhD  
Christopher M. Kelty, PhD  
Paul V. Kroskrity, PhD  
Richard G. Lesure, PhD (*Marilyn Beaudry-Corbett Endowed Professor of Mesoamerican Archaeology*)  
Nancy E. Levine, PhD

Purnima Mankekar, PhD  
Norma C. Mendoza-Denton, PhD  
Kyeyoung R. Park, PhD (*Korea Times-Hankook Ilbo Endowed Professor of Korean American Studies and Law*)  
Susan E. Perry, PhD  
Jemima Pierre, PhD  
Brooke A. Scelza, PhD  
Gregson T. Schachner, PhD  
David Delgado Shorter, PhD  
Susan E. Slyomovics, PhD  
Monica L. Smith, PhD (*Navin and Pratima Doshi Professor of Indian Studies*)  
Shannon E. Speed, PhD  
James W. Stigler, PhD  
C. Jason Throop, PhD  
Yunxiang Yan, PhD

### Professors Emeriti

Nicholas G. Blurton Jones, PhD  
Robert Boyd, PhD  
Karen B. Brodtkin, PhD  
Carole H. Browner, PhD  
Christopher B. Donnan, PhD  
Alessandro Duranti, PhD  
Marjorie Harness Goodwin, PhD  
Sondra Hale, PhD  
Allen W. Johnson, PhD  
Gail E. Kennedy, PhD  
Joseph H. Manson, PhD  
Claudia I. Mitchell-Kernan, PhD  
Philip L. Newman, PhD  
Elinor Ochs, PhD  
Sherry B. Ortner, PhD  
Merrick Posnansky, PhD  
Dwight W. Read, PhD  
Joan B. Silk, PhD  
Charles S. Stanish, PhD  
Mariko Tamanoi, PhD  
Russell Thornton, PhD  
Thomas S. Weisner, PhD

### Associate Professors

Salih Can Açıksöz, PhD  
Hannah C. Appel, PhD  
Abigail W. Bigham, PhD  
Elizabeth A. Bromley, MD, PhD, *in Residence*  
Erica A. Cartmill, PhD  
Erin K. Debenport, PhD  
Molly M. Fox, PhD  
Min Li, PhD  
Jessica W. Lynch-Alfaro, PhD  
Brian M. Wood, PhD

### Assistant Professors

Justin P. Dunnavant, PhD  
Ippolytos A. Kalofonos, MD, PhD, MPH, *in Residence*  
Bharat J. Venkat, PhD

### Adjunct Professors

M. Kamari Clarke, PhD  
Robert B. Lemelson, PhD

### Adjunct Associate Professors

Tamar Kremer-Sadlik, PhD  
Tritia Toyota, PhD  
Thomas A. Wake, PhD

## Overview

Anthropology, the broadest of the social sciences, is the study of humankind. One of the strengths of anthropology as a discipline is its holistic or integrative approach; it links the life sciences and the humanities and has strong ties with disciplines ranging from biology and psychology to linguistics, political science, and the fine arts. Anthropological study is appropriate for people with a wide variety of interests: human cultures and civilizations both present and past, human and animal behavior, particular regions of the world such as Africa, Asia, Latin America, Oceania, etc.

Studies in anthropology are particularly valuable for students planning careers in which an understanding of human behavior and cultural diversity is desirable, such as business, education, law, medicine, nursing, public health, social welfare, and urban planning. Because of its breadth of outlook, anthropology also offers an ideal basis for those seeking a general education in our increasingly interdependent world.

## Fields

The Department of Anthropology recognizes the following four fields in anthropology:

Archaeology is the study of human cultures and the natural, social, ideological, economic, and political environments in which they operated in the recent and distant past. The graduate and undergraduate programs focus on methods of discovery (field and laboratory courses), strategies of analysis pertaining to long-term cultural evolution (theory, analytic, and topical courses), and the unfolding of prehistory in many regions of the world, including North America, Mesoamerica, South America, and several parts of the Old World (regional courses). Faculty members have long-standing interests in the origins and evolution of complexity, including early human adaptations, the political organization of complex hunters/gatherers, the origins of early village life, and the emergence and florescence of ancient cities and states. Faculty members maintain programs of field research involving many students in North America, Mesoamerica, South America, and East and South Asia.

Biological anthropology is the study of humans and other primates from a Darwinian point of view. The program focuses on the evolutionary ecology of early hominids, extant primates, and contemporary humans and includes training in evolutionary theory, behavioral ecology, evolutionary psychology, paleoanthropology, paleoecology, primate behavior, and mathematical modeling. Faculty members associated with the program have engaged in fieldwork in Africa, Central America, and Southeast Asia where ongoing projects include work on primate behavior, hominid evolution, and evolutionary psychology.

Linguistic anthropology is an interdisciplinary field that addresses the manifold ways in which language, interaction, and culture mutually organize each other in different communities worldwide. Linguistic anthropologists at UCLA have a variety of backgrounds and research interests that include face-to-face communica-



tion, language contact and change, language and politics, language socialization across the lifespan, verbal art and performance, and the relation of language to ideology, mind, emotion, and identity. Courses are offered in ethnographic approaches to discourse analysis, field methods, language ideology, conversation analysis, language socialization, and communication in urban communities, as well as on cross-cultural language practices.

Sociocultural anthropology concerns the examination and understanding of social and cultural systems and processes, and the human capacities that enable them. Its goal is to understand their operation in specific settings and to understand the experience of individuals who live in these diverse systems. Faculty members have engaged in fieldwork in almost every area of the world, but most notably in Africa, Latin America, East and Southeast Asia, and Oceania. They have also engaged in ethnographic research among Americans with diverse ethnic identities and in various institutional settings.

Bridging the four primary subfields are several other dimensions of anthropological study, including psychocultural anthropology and medical anthropology. Courses are also offered in the history and theory of anthropology and a wide range of anthropological methods.

## Undergraduate Majors

### Anthropology BA

The major is designed for students interested in an anthropological understanding of human behavior. One of the strengths of anthropology is its cross-cultural holistic and integrative approach with many fields, such as biology, history, linguistics, the social sciences, and many of the humanities.

#### Learning Outcomes

The Anthropology major has the following learning outcomes:

- Broad knowledge of archaeological, biological, sociocultural, and linguistic anthropology
- Familiarity with the history, methods, and current theoretical debates in the field
- General knowledge of, and developed skills working with, empirical and anthropological evidence
- Proficiency in library research, data interpretation, synthesis, and writing
- Proficiency formulating and answering relevant questions through critical reasoning, making use of current primary scientific literature, identification of appropriate sources, reading and understanding of papers, and discriminating research quality

#### Entry to the Major

##### Transfer Students

Transfer applicants to the Anthropology BA major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one human evolution course, one archaeology

course, one sociocultural anthropology course, and one culture and communication course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Requirements

##### Preparation for the Major

*Required:* Anthropology 1, 2, 3, 4.

##### The Major

To gain a comprehensive understanding of the discipline as a whole, students must take two courses in the sociocultural anthropology field and one course in each of the other three fields (see Overview). Students may take any upper-division course in the given area to fulfill this requirement.

Students must complete 11 courses (44 to 52 units) as follows: (1) two upper-division courses in the sociocultural anthropology field (130–149) and one in each of the other three fields: archaeology (110–119), biological anthropology (120–129), and linguistic anthropology (150–159); (2) one upper-division regional cultures course (160–169); (3) one upper-division history/theory course selected from 100, 110, 111, 120, 124Q, 130, 131, 136A, 140, M150; (4) one upper-division methodology course selected from 110, CM110Q, C117, 126P, 135, 138P, M138Q, 151, 195CE; and (5) three additional upper-division anthropology courses.

Students are strongly encouraged to enroll in 3 to 4 units of 89 and/or 189 courses to gain small seminar experience. Ideally, at least one of the units should be at the upper-division level.

##### Honors Program

The honors program offers research-oriented students an opportunity to engage in original research and analysis under the close supervision of faculty members and culminates in an honors thesis. The proposal, research, analysis, and writing of the paper take place over four terms via Anthropology 191HA through 191HD. Course 191HA is taken in winter quarter and 191HB in spring quarter. Research should be done in summer, and courses 191HC and 191HD are taken in fall and winter quarters of the graduation year.

#### Policies

##### Preparation for the Major

Each course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

##### The Major

Each course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

##### Honors Program

To be admitted students should have a cumulative grade-point average of 3.0 overall and a 3.5 cumulative GPA in their upper-division Anthropology courses. The application for admission must be submitted during fall quarter. Ideal candidates should have junior or senior stand-

ing and have completed at least two upper-division anthropology courses. Students should contact the departmental honors adviser early in their studies for more information.

## Anthropology BS

The major supplies an overview of human evolution and is designed to prepare students for careers in anthropology and the health sciences, including medicine, dentistry, public health, and nursing.

#### Learning Outcomes

The Anthropology major has the following learning outcomes:

- Broad knowledge of archaeological, biological, sociocultural, and linguistic anthropology
- Familiarity with the history, methods, and current theoretical debates in the field
- General knowledge of, and developed skills working with, empirical and anthropological evidence
- Proficiency in library research, interpreting data, synthesis, and writing
- Demonstrated knowledge and understanding of mathematics, physical sciences, and life sciences to meet pre-medical-school requirements
- Proficiency formulating and answering relevant questions through critical reasoning, making use of current primary scientific literature, database searches, identification of appropriate sources, reading and understanding of papers, and discriminating research quality

#### Entry to the Major

##### Transfer Students

Transfer applicants to the Anthropology BS major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one human evolution course, one archaeology course, one sociocultural anthropology course, one culture and communication course, two general biology courses for majors, one year of calculus, one year of general chemistry with laboratory, one year of general physics with laboratory, and one lower-division organic chemistry course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Requirements

##### Preparation for the Major

*Required:* Anthropology 1, 2, 3, 4; Chemistry and Biochemistry 14A, 14B, 14BL, and 14C, or 20A, 20B, 20L, 30A, and 30AL; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Statistics 12, or Mathematics 31A, 31B, and Statistics 12; Physics 5A, 5B, and 5C.

##### The Major

Students must complete nine courses as follows: (1) two upper-division courses in the sociocultural anthropology field (130–149) and one in each of the other three fields: archaeol-

ogy (110–119), biological anthropology (120–129), and linguistic anthropology (150–159); (2) one upper-division regional cultures course (160–169); (3) one upper-division history/theory course selected from 100, 110, 111, 120, 124Q, 130, 131, 136A, 140, M150; and (4) two additional upper-division anthropology courses.

Students are strongly encouraged to enroll in 3 to 4 units of 89 and/or 189 courses to gain small seminar experience. Ideally, at least one of the units should be at the upper-division level.

### Honors Program

The honors program offers research-oriented students an opportunity to engage in original research and analysis under the close supervision of faculty members and culminates in an honors thesis. The proposal, research, analysis, and writing of the paper take place over four terms via Anthropology 191HA through 191HD. Course 191HA is taken in winter quarter and 191HB in spring quarter. Research should be done in summer, and courses 191HC and 191HD are taken in fall and winter quarters of the graduation year.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

#### The Major

Each course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

### Honors Program

To be admitted students should have a cumulative grade-point average of 3.0 overall and a 3.5 cumulative GPA in their upper-division Anthropology courses. The application for admission must be submitted during fall quarter. Ideal candidates should have junior or senior standing and have completed at least two upper-division anthropology courses. Students should contact the departmental honors adviser early in their studies for more information.

## Undergraduate Minor

### Anthropology Minor

Students who wish to take a series of courses in anthropology, but major in another discipline, may be interested in the Anthropology minor. Students select courses from the four fields within anthropology (archaeology, biological anthropology, linguistic anthropology, sociocultural anthropology), although they are encouraged to focus the body of their coursework within one field.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

## The Minor

*Required Lower-Division Courses (10 units):* Two courses from Anthropology 1, 2, 3, 4.

*Required Upper-Division Courses (20 units minimum):* Core course (Anthropology 111, 120, 130, 140, or M150) from one of the four anthropology fields listed above; four additional courses. Students are encouraged to concentrate their upper-division coursework within one field and are required to consult with the undergraduate adviser in planning their program of study.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Anthropology MA, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Anthropology

### Lower-Division Courses

**1. Human Evolution. (5)** Lecture, three hours; discussion, one hour. Required as preparation for both bachelor's degrees. Evolutionary processes and evolutionary past of human species. P/NP or letter grading.

**2. Archaeology: Introduction. (5)** Lecture, three hours; discussion, one hour; one field trip. Required as preparation for both bachelor's degrees. General survey of field and laboratory methods, theory, and major findings of anthropological archaeology, including case-study guest lectures presented by several campus archaeologists. P/NP or letter grading.

**3. Culture and Society. (5)** Lecture, three hours; discussion, one hour; fieldwork. Required as preparation for both bachelor's degrees. Introduction to study of culture and society in comparative perspective. Examples from societies around world to illustrate basic principles of formation, structure, and distribution of human institutions. Of special concern is contribution and knowledge that cultural diversity makes toward understanding problems of modern world. P/NP or letter grading.

**4. Culture and Communication. (5)** Lecture, three hours; discussion, one hour. Required as preparation for both bachelor's degrees. Introduction to study of communication from anthropological perspective. Formal linguistic methods compared with ethnographically oriented methods focused on context-bound temporal unfolding of communicative activities. Topics include language in everyday life and ritual events, socialization, literacy, multilingualism, miscommunication, political discourse, and art-making as cultural activity. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M67W. Making and Studying Modern Middle East. (5)** (Same as Middle Eastern Studies M50CW.) Lecture, three hours; discussion, one hour. Requisite: English Composition 3. Survey of modern Middle Eastern cultures through readings and films from Middle East and North Africa. Satisfies Writing II requirement. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. History of Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Brief survey of development of Western social science, particularly anthropology, from Greek and Roman thought to emergence of evolutionary theory and concept of culture in late 19th century. Root paradigm of Western social science and its influence on such notables as Durkheim, Freud, Hall, Lombroso, Marx, Piaget, Terman, and others. Consideration of how this influences ethnocentrism and Eurocentrism, sexism, racism, perception of deviance, and view of culture in general. P/NP or letter grading.

### Archaeology

**110. Principles of Archaeology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 2. Intended for students interested in conceptual structure of scientific archaeology. Archaeological method and theory with emphasis on what archaeologists do and how and why they do it. Consideration of field strategies, formation processes, chronological frameworks, and other crucial principles of archaeological analysis and interpretation. P/NP or letter grading.

**CM110Q. Introduction to Archaeological Sciences. (4)** (Same as Ancient Near East CM169.) Lecture, three hours. Basic understanding of newly introduced methods and techniques throughout field of archaeology to implement them and to appreciate and evaluate results of their use by others who have embedded them in their scholarly publications or theoretical models. Systematic instruction in digital data management and mining, scientific analysis of materials (including geological and biochemical techniques), and visual presentation of data and research results (ranging from simple graphs to virtual reality). Concurrently scheduled with course CM210Q. P/NP or letter grading.

**111. Theory in Anthropological Archaeology. (4)** Lecture, three hours. Requisite: course 2. Method and theory with emphasis on archaeology within context of anthropology. Themes include theoretical developments over last 50 years, structure of archaeological



reasoning, and selective survey of work on problems of general anthropological interest. P/NP or letter grading.

**112P. Selected Topics in Historical Archaeology. (4)** Lecture, three hours. Study of selected topics in historical archaeology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

**112Q. Archaeology of Chiefdoms. (4)** Lecture, three hours. Requisite: course 2. Examination of chiefdom societies in anthropological record, with readings focused on theory and data from archaeological, historical, and ethnographic literature. Illustration of how people in ranked non-state societies created remarkably rich cultures over entire globe beginning several millennia ago in both Old World and Americas. P/NP or Letter grading.

**112R. Cities Past and Present. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 2 or 3. Examination of ancient and modern cities to evaluate how urban form developed and continues to thrive as human social phenomenon. Contemporary observations compared with archaeological case studies, including South America, Asia, Africa, and ancient Near East. P/NP or letter grading.

**112S. Politics of Past. (4)** Lecture, three hours. Requisite: course 2. Examination of social and cultural context of modern archaeology. Topics include legal frameworks governing archaeological practice, relationships between archaeologists and descendant peoples, and role of archaeology in current politics. P/NP or letter grading.

**113P. Archaeology of North America. (4)** Lecture, three hours. Prehistory of North American Indians; evolution of Indian societies from earliest times to (and including) contemporary Indians; approaches and methods of American archaeology. P/NP or letter grading.

**113Q. California Archaeology. (4)** Lecture, three hours. From earliest Californians through 10,000 years of history, study of diversity in California's original peoples. Aspects of technology, ideology, ecology, and social/political organization. Historic impacts on California Indians by Euro-Americans. P/NP or letter grading.

**113R. Southwestern Archaeology. (4)** Lecture, three hours. Examination of prehistory of American Southwest from 11,000 years ago to historic times. Emphasis on describing and explaining cultural variation and change, employing evolutionary perspective. Special attention to advent of farming and settled towns, large-scale interactive networks, abandonment of Four Corners area, and historic cultures. P/NP or letter grading.

**114P. Ancient Civilizations of Mesoamerica. (4)** Lecture, three hours. Archaeology of pre-Hispanic native cultures of Mesoamerica from late Pleistocene through Spanish conquest, with emphasis on formative sociopolitical developments, classic period civilizations, and Aztec society as revealed by archaeology and early Spanish writing. P/NP or letter grading.

**114Q. Ancient Civilizations of Andean South America. (4)** Lecture, three hours. Requisite: course 2 or 3. Pre-Hispanic and Conquest period native cultures of Andean South America, as revealed by archaeology and early Spanish writing. Incas and their predecessors in Peru, with emphasis on sociopolitical systems, economic patterns, religion, and aesthetic and intellectual achievements. P/NP or letter grading.

**M115. Archaeology of Egypt and Sudan. (4)** (Same as Ancient Near East M105.) Lecture, two hours; laboratory, three hours. Ancient Egypt is well known for iconic archaeological sites such as Giza Pyramids and Tomb of Tutankhamun. From these and thousands of less well-known sites, enormous variety of archaeological information can be gained. Through discussion of particular archaeological themes, regions, or sites, examination of methods of prehistoric and historic archaeology and how archaeological information contributes to understanding of social, political, and religious history. Background provided for development of group research projects—finding resources, data gathering, analysis, interpretation, presentation, and training on how to embark on research in this field.

Computer laboratory component included in which student research is performed and presented in time map. P/NP or letter grading.

**116P. Archaeology of South Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Archaeology of Harappan, early historic, and medieval periods in Indian subcontinent. Investigation of large-scale social movements such as Buddhism, as well as consideration of how past is interpreted in present. P/NP or letter grading.

**116Q. Selected Topics in Archaeology of China. (4)** Lecture, three hours. Examination of current developments and key issues in archaeology of early Chinese civilizations. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or Letter grading.

**M116R. Archaeological Landscapes of China. (4)** (Same as Chinese M183.) Lecture, three hours; discussion, one hour (when scheduled). Declassified space images from Cold War era and open remote sensing data of 21st century provide new opportunities for studying landscape transformation in historical China. Combining lectures, library research, and hands-on analysis of archaeological sites on satellite images, investigation of changing historical and archaeological landscape in China during last 5,000 years. Social processes at various scales, from emergence of early cities to rise of metropolitan centers and formation of imperial landscapes. P/NP or letter grading.

**116S. Selected Topics in Archaeology of Southeast Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Study of selected topics in archaeology and prehistory of Southeast Asia from Pleistocene to European colonization, including population movements, emergence of agriculture, and development of state level societies. May be repeated for credit with topic change. P/NP or letter grading.

**116XP. Collaborative and Community-Engaged Archaeology. (4)** Lecture, three hours; discussion, one hour (when scheduled); fieldwork, 10 hours. Community and stakeholder engagement make anthropological practice more meaningful, especially when results of research empower descendant communities. Anthropology is in great position to work with communities to empower them in strengthening their identity. There is increasing number of anthropologists and allied social sciences who have intensified their cross-disciplinary work and engagement with communities that they work with. Students interact with Philippine collaborators through online conference to discuss how community participation enhances research. Students work with community stakeholders in developing heritage education materials. P/NP or letter grading.

**C117. Selected Laboratory Topics in Archaeology. (4)** Lecture, one hour; laboratory, two hours. Specialized analysis of particular classes of cultural remains. Topic may be one of following: zooarchaeology, paleoethnobotany, ceramics, lithic analysis, rock art. Laboratory experience with collections and data. May be repeated for credit with topic change. Concurrently scheduled with course CM217. P/NP or letter grading.

**117P. Selected Laboratory Topics in Archaeology. (4)** Lecture, three hours. Requisite: course 2. How archaeological research is furthered by specialized analysis of particular classes of cultural remains. Topics may include animal bones, plants, ceramics, rock art. Hands-on experience working with collections and data. May be repeated for credit with topic change. P/NP or letter grading.

**118Q. Conquest and Colonialism. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed to expose students to anthropological issues on European conquest and colonialism. Comparative view of colonialism through examination of case studies of encounters and entanglements between peoples of different cultural traditions during past 500 years. Particular interest is placed in rapid environmental and social transformations that ensued soon after contacts between indigenous groups and European explorers, emphasizing responses of indigenous peoples to such contacts. Focus on archaeological perspectives, particularly long-term dynamics of cross-cultural entanglements, and effects of such in-

teractions in landscape, material culture, and past ways of life. Highlights significant contributions of archaeology to understanding often rapid and dramatic cultural changes experienced by peoples involved in colonial encounters. P/NP or letter grading.

**118R. Religion and Urbanism. (4)** Lecture, three hours; discussion, one hour (when scheduled). Religion and ritual are fundamental components of social life, extending deep into human past. Earliest cities often made use of power of religion, with rulers and elites endowing religious architecture, and placing ritual centers at heart of urban realm. In modern times, however, religious places have been treated with more conflicted identity in cities, retaining some of their prominence in spatial realm while less-articulated with political power given expectation of secularism as dominant public mode in modern nation-states. Examination of power of religion as social, organizational, and political principle in both ancient and modern cities, focusing on four of world's dominant living ritual traditions (Buddhism, Christianity, Islam, Judaism). P/NP or letter grading.

**119. Selected Topics in Archaeology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Study of selected topics in archaeology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

## Biological Anthropology

**120. Survey of Biological Anthropology. (4)** Lecture, three hours. Requisite: course 1. Limited to juniors and seniors. In-depth survey of theory and research in biological anthropology, including evolutionary theory, genetics, primatology, human evolution, and human behavior. P/NP or letter grading.

**124P. Human Behavioral Ecology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended requisite: course 1 or Life Sciences 1 or 7B. Survey of research in human behavioral ecology. Review of natural and sexual selection, kin selection, and reciprocal altruism. Emphasis on current empirical studies of modern human behavior from evolutionary perspective, including social organization, sexual division of labor, parenting strategies, conflict, and cooperation. P/NP or letter grading.

**124Q. Evolutionary Psychology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended requisite: course 1. Survey of research in evolutionary psychology. Review of relevant theory in evolution and genetics. Emphasis on empirical studies of modern human behavior from evolutionary perspective, including social behavior, decision making, language, culture, and child development. P/NP or letter grading.

**M124R. Evolution of Language. (4)** (Same as Communication M124.) Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: course 1 or 4 or Linguistics 1. Designed for juniors and seniors. How did human capacity for language evolve? Examination of origin of human language from biological, comparative, developmental, social and computational perspectives. Topics include evolutionary theory, linguistic structure, gesture and speech, animal communication, language learning, language disorders, and computational models of language emergence. P/NP or letter grading.

**124S. Evolution of Human Sexual Behavior. (4)** Lecture, three hours; discussion, one hour (when scheduled). Examination of human sexual relations and social behavior from evolutionary perspective. Emphasis on theories and evidence for differences between men and women in their patterns of growth, maturation, fertility, mortality, parenting, and relations with members of opposite sex. P/NP or letter grading.

**124T. Evolution of Personality. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended requisite: course 1 or Life Sciences 1 or 7B or Psychology 10. Evolutionary hypotheses for existence of stable differences among individuals in patterns of thought, emotion, and behavior. Descriptive accounts of personality structure (e.g. Big Five). Comparison of explanatory models including balancing selection, facultative calibration, and mutation-selection balance. P/NP or letter grading.

**126M. Molecular Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 1. Introduction to ways in which molecular data are analyzed to answer questions concerning human evolutionary history. Topics include introduction to basic concepts and methods used to understand molecular evolution and origin and history of human species. Students learn principles of population genetics and molecular phylogenetics, and learn how to apply these methods to human and non-human primate DNA sequence data. P/NP or letter grading.

**M126N. Genes, Disease, and Culture. (4)** (Formerly numbered 126N.) (Same as Society and Genetics M126.) Lecture, three hours; discussion, one hour (when scheduled). Introduction to genes, disease, and culture. Introduction to basic concepts in human genetics, expanding upon evolutionary genetic concepts learned in course 1, and survey of both inherited and infectious disease on global level. Wide range of topics include gene-culture co-evolution, niche construction theory, cultural perceptions of disease, cultural selection, biological and environmental determinism, and evolutionary origins of disease. Course is broken down into genes and genomes, Mendelian disease, complex disease, and infectious disease. Discussion of selected readings that integrate cultural perceptions with biological/genetic phenomena. P/NP or letter grading.

**126P. Paleopathology. (4)** Lecture, three hours. Designed for juniors/seniors. Evidence of disease and trauma, as preserved in skeletal remains of ancient and modern human populations. Discussions of medical procedures (trepanation), health status, ethnic mutilation (cranial deformation, footbinding), cannibalism, and sacrifice and roles such activities have played in human societies. P/NP or letter grading.

**126Q. Evolution of Genus *Homo*. (4)** Lecture, three hours. Requisite: course 1. Origin and evolution of genus *Homo*, including archaic sapiens and Neanderthals. Morphology, ecology, and behavior of these groups. Course ends with appearance of modern humans. P/NP or letter grading.

**128P. Primate Behavior Nonhuman to Human. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Review of primate behavior as known from laboratory and field studies. Theoretical issues of animal behavior, with special reference to nonhuman primates. Discussion of human behavior as product of such evolutionary processes. P/NP or letter grading.

**M128Q. Animal Communication. (4)** Lecture, three hours. Designed for Anthropology and Communication majors. Evolution, functions, design, and diversity of animal communication systems such as bird song, dolphin calls, whale song, primate social signals, and human language. P/NP or letter grading.

**M128S. Primate Genetics, Ecology, and Conservation. (4)** (Same as Society and Genetics M142.) Seminar, three hours. Focus on genetic research on wild primates at different geographic scales, using readings from primary literature on primate genetics, ecology, and behavior. Study of paternity and kinship, intrapopulation variation, population genetics, biogeography, systematics, phylogenetics/phylogenomics and comparative genomics. Utility and appropriateness of various markers considered for different research questions, e.g., mitochondrial DNA, microsatellites, nuclear genes, Y-chromosome, as well as GWAS and genomic/next generation sequencing platforms, and epigenetic markers. Discussion of methods in fieldwork and lab work, including sampling techniques, collection techniques, wet lab techniques, software analysis packages, and statistical analyses. Introductory-level understanding of genetics expected; study further illuminates areas in molecular biology relevant to case studies analyzed. Letter grading.

**M128T. Amazon in Anthropocene. (4)** (Same as Society and Genetics M143.) Seminar, three hours. Consideration of major issues faced in Amazon region today using lenses of biology, geography, biological anthropology, primatology, cultural anthropology/ethnography, history, comparative literature, film studies, political science, and environmental science. Analysis

of Amazon paleogeography and ecology over time to highlight charismatic species, biodiversity, and habitat types. Focus on human migration into Amazon, diversity of indigenous groups today, and historic/present interactions with environment. Study of European expeditions that carved out political boundaries within Amazon. Study of historic/current effects of human economy and land use on ecology. Exploration of changing power dynamics, inequity, and (un)sustainability of different cultural practices and technologies. Topics include rubber boom, indigenous resistance to oil exploration, hydroelectric dams and clean energy, deforestation arc, and international land grabs for soy plantations. Highlights value of different kinds of knowledge and expertise for interdisciplinary solutions for current crises in Amazon. Letter grading.

**129. Selected Topics in Biological Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Study of selected topics in biological anthropology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

## Sociocultural Anthropology

**130. Study of Culture. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 3. Designed for juniors/seniors. 20th-century elaboration and development of concept of culture. Examination of five major paradigms: culture as human capacity, as patterns and products of behavior, as systems of meaning and cognition, as generative structure and semiotic system, as component in social action and reality construction. (Core course for cultural field.) P/NP or letter grading.

**131. Critical Social Theory. (4)** Lecture, three hours. Requisite: course 3. Limited to juniors/seniors. In-depth introduction to work of classic social theorists, Karl Marx and Max Weber. Examination of their influence on anthropology. Exploration of recent attempts to synthesize both perspectives. P/NP or letter grading.

**132. Anthropology of Environment. (4)** Lecture, three hours; discussion, one hour (when scheduled). Environmental anthropology explores relationship between complex human systems and environments in which they are entangled. Examination of how people impact and are impacted by their environments, and how relationships between people are negotiated through management of place and space throughout time. Traces multiple theoretical lineages, beginning with early work in cultural ecology and including political ecology, environmental history, contested ontologies, and contemporary environmental justice. Through engagement with grounded, multimodal ethnographies (in text, film, and new media), study of historical movements of people across ecosystems, politics of managing common goods resources such as rivers and atmosphere, bioeconomics of environmental contamination, and development of climate change adaptation strategies in hard-hit areas. P/NP or letter grading.

**133. Anthropology of Food. (4)** Lecture, three hours; discussion, one hour (when scheduled). Production, consumption, and distribution of food, with particular emphasis on culture of food. Exploration of ecological history, class, poverty, hunger, ethnicity, nationalism, capitalism, gender, race, and sexuality. Food that shapes identities, desires, and needs in contemporary world. P/NP or letter grading.

**134. Anthropology of Migration. (4)** Lecture, three hours; discussion, one hour (when scheduled). Introduction of different views on population movement from refugee crisis and migration tendencies to policies surrounding newcomers' incorporation and anti-immigration political strategies. Examination of motivations for migration, both voluntary and involuntary movements (e.g., displacement, slave trades, or ethnic violence). P/NP or letter grading.

**135. Visual Anthropology: Documentary Photography. (4)** Lecture, three hours; discussion, one hour (when scheduled). Photographs in anthropology serve many purposes: as primary data, illustrations of words in books, documentation for disappearing cultures, evidence of fieldwork, material objects for museum exhibitions, and even works of art. Topics include rela-

tionships between subject and treatment of image, between art photography and ethnographic documentation, role of museum photograph and caption, social practice of taking pictures, and case study on photographing Middle East and North Africa. P/NP or letter grading.

**135R. Multimedia Ethnography. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: native or near-native control of and communicative competence in language of study. Introduction to theories and methods of field-based linguistic anthropology and visual anthropology. Students gain experience in conducting visual anthropological research and in presenting their work in linguo-visual framework. Presentation of finished filmic product. Emphasis on collection and analysis of language in use, with focus on videorecording naturally-occurring dialogic or multiparty conversations, and on analyzing phenomena occurring within these conversations. P/NP or letter grading.

**135S. Sex, Race, and Difference in Transnational Film. (5)** Lecture, three hours; discussion, one hour (when scheduled). How are sex, race, and cultural difference represented and constructed in transnational film? Use of lens of transnational film to better understand how discourses of race, gender, sex, and sexuality intersect in formation of identities, structures of inequality, and notions of cultural difference. Draws upon scholarship in feminist anthropology, ethnic studies, and film studies to develop analytical tools for examining selection of films that address dynamism of race, gender, sexuality and cultural difference across time (historically) and across space (in different geographical locations) in transnational contexts. P/NP or letter grading.

**136A. Introduction to Psychological Anthropology: Historical Development. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 3. Limited to juniors/seniors. Survey of field of psychological anthropology, with emphasis on early foundations and historical development of field. Topics include study of personality, pathology and deviance, altered states of consciousness, cognition, motivation, and emotion in different cultural settings. P/NP or letter grading.

**136B. Introduction to Psychological Anthropology: Current Topics and Research. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of field of psychological anthropology, with emphasis on current topics and research. Topics include study of personality, pathology and deviance, altered states of consciousness, cognition, motivation, and emotion in different cultural settings. P/NP or letter grading.

**136M. Medical Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Medical anthropology examines affliction and healing across different cultural and historical contexts. Study of complex interactions between biology, culture, ideology, and society in construction of medical facts. Topics include disability; embodiment; health effects of racism, poverty, and war; humanitarianism; illness narratives; infectious diseases; medicalization; mental health; and organ transplantation. Students gain better grasp of theories and methods of medical anthropology, and ability to critically reflect on their own and others' experiences of disease and healing, as well as on representations of human suffering and medical technologies. P/NP or letter grading.

**137P. Anthropology of Deviance and Abnormality. (4)** Lecture, three hours. Requisite: course 3. Relationship between culture and recognition of, responses toward, and forms of deviant and abnormal behavior. P/NP or letter grading.

**137Q. Psychoanalysis and Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Exploration of mutual relations between anthropology and psychoanalysis, considering both theory and method. History of and current developments in psychoanalysis; anthropological critiques of psychoanalytic theory and method, toward cross-cultural psychoanalytic approach. P/NP or letter grading.

**138P. Field Methods in Cultural Anthropology. (5)** Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Introduction to skills and tools of data ascertainment through fieldwork in cultural anthropology. Emphasis on techniques, methods, and concepts of ethnographical research and how basic observational information is systematized for presentation, analysis, and cross-cultural comparison. P/NP or letter grading.

**M138Q. Fieldwork in Asian American and Pacific Islander Communities. (4)** (Same as Asian American Studies M143A.) Lecture, three hours; discussion, one hour. Introduction to qualitative research methods and application of techniques in data collection, analysis, and reporting. Critical reflection of issues related to identity, migration, multiculturalism, tourism, and indigenous rights. Field excursions and guest lecturers from local community included. Given in Hawai'i. P/NP or letter grading.

**139. Selected Topics in Cultural Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Study of selected topics in cultural anthropology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

**140. Study of Social Systems. (4)** Lecture, three hours; discussion, one hour (when scheduled). Enforced requisite: course 3. Introduction to more specialized social anthropology courses. Evaluation of variation in sociocultural systems, with special emphasis on forms of inequality. Basic frameworks of anthropological analysis; historical context and development of social anthropology discipline. P/NP or letter grading.

**141. Careers in Anthropology. (4)** Lecture, three hours. Overview of various career paths for students with degrees in anthropology. Helps students develop academic and professional skills in preparation for life after UCLA. Focus on ways in which one can apply anthropological concepts, research methodologies, and analytical skills to range of careers. Guest speakers discuss how they have applied their anthropology degrees to their work outside of academia. P/NP or letter grading.

**142P. Anthropology of Religion. (4)** Lecture, three hours. Survey of various methodologies in comparative study of religious ideologies and action systems, including understanding particular religions through descriptive and structural approaches, and identification of social and psychological factors that may account for variation in religious systems cross-culturally. P/NP or letter grading.

**142Q. Ethnic and Religious Minorities. (4)** Lecture, three hours. Analytical overview of ethnic and religious minorities in contemporary Middle East and North Africa structured around sociocultural experiences of ethnic and religious groups to understand their political and economic realities. P/NP or letter grading.

**143. Economic Anthropology. (4)** Lecture, three hours. Requisite: course 3. Introduction to anthropological perspectives for interpretation of economic life and institutions. Economic facts to be placed in their larger social, political, and cultural contexts; examination of modes of production, distribution, and consumption of goods and services in their relation to social networks, power structures, and institutions of family, kinship, and class. P/NP or letter grading.

**C144M. Multispecies Anthropology. (4)** Lecture, three hours. Survey of human-animal relationships across history, from origins of domestication to present-day debates over animal rights, and very different ways societies distant in time and space from our own have construed inner lives of other species and their ties to human others. Concurrently scheduled with course C244M. P/NP or letter grading.

**M144P. Constructing Race. (4)** (Same as African American Studies M159P and Asian American Studies M169.) Lecture, three hours; discussion, one hour (when scheduled). Examination of race, socially constructed category, from anthropological perspective. Consideration of development of racial categories over time and in different regions, racial passing, multiracial identity in U.S., whiteness, race in popular culture, and race and identity. P/NP or letter grading.

**M144Q. Afro-American Experience in U.S. (4)** (Same as African American Studies M164.) Lecture, three hours. Promotes understanding of contemporary sociocultural forms among Afro-Americans in U.S. by presenting comparative and diachronic perspective on Afro-American experience in New World. Emphasis on utilization of anthropological concepts and methods in understanding origins and maintenance of particular patterns of adaptation among black Americans. P/NP or letter grading.

**144R. Anthros and Indians: Racism, Colonialism, and Development of Anthropology in America. (4)** Lecture, three hours. Recommended requisite: course 160A. Examination of long-standing contentious relationship between American Indians and discipline of anthropology and history of anthropological study of American Indians in United States. Consideration of way anthropology has contributed to repression and marginalization—even subjugation—of Indians in American society. P/NP or letter grading.

**C144S. Repatriation of Native American Human Remains and Cultural Objects. (4)** Lecture, two hours; discussion, one hour. Native Americans have recently been successful in obtaining passage of federal and state laws repatriating human remains and cultural objects to them. Examination of this phenomenon. May be concurrently scheduled with course C244S. P/NP or letter grading.

**M145P. Marriage, Family, and Kinship. (4)** (Same as Gender Studies M154P.) Lecture, three hours. Requisite: course 3. Examination of understandings of kinship in cross-cultural perspective and impact of kinship on interpersonal relationships, gender roles, and sociocultural systems. Readings from popular materials and formal ethnographic accounts. P/NP or letter grading.

**M145Q. Selected Topics in Gender Systems. (4)** (Same as Gender Studies M154Q.) Lecture, three hours. Recommended preparation: prior anthropology or gender studies courses. Designed for junior/senior social sciences majors. Comparative study of women's lives and gender systems and cultures from anthropological perspective. Critical review of relevant theoretical issues using ethnography, case study, and presentations. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

**M145R. Women and Social Movements. (4)** (Same as Gender Studies M154R.) Lecture/discussion, three hours. Recommended preparation: prior gender studies or anthropology courses. Comparative studies of social movements (e.g., nationalist, socialist, liberal/reform), beginning with Russia and China and including Cuba, Algeria, Guinea-Bissau, Mozambique, Nicaragua, and Iran. Analysis of women's participation in social transformations and centrality of gender interests. P/NP or letter grading.

**145S. Culture, Gender, Sexuality. (4)** Lecture, three hours. Comparative analysis of role of environment, history, and culture in structuring of patterns of gender and sexuality. P/NP or letter grading.

**M145T. Women's Voices: Their Critique of Anthropology of Japan. (4)** (Same as Gender Studies M154T.) Lecture, three hours. Preparation: introductory sociocultural anthropology course. Anthropology of Japan has long viewed Japan as homogeneous whole. Restoration of diversity and contradiction in it by listening to voices of Japanese women in various historical contexts. P/NP or letter grading.

**146. Urban Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for junior/senior social sciences majors. Introduction to modern industrial cities and urban life. Examination of notion of urban space in context of social relations by drawing from historical and cross-cultural urban ethnographies. Urban space is created according to needs of capital and actions of urban subjects. Exploration of ways in which class, gender, race, and geography shape or contest perspectives and priorities on urban issues. P/NP or letter grading.

**147. Development Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 3. Designed for juniors/seniors. Comparative study of planned and unplanned development, in

particular as it affects rural societies. Emphasis on impact of capital, technological change and gender differences, economic differentiation and class, urban/rural relations, and migration. Discussion of theoretical issues in light of case studies. P/NP or letter grading.

**M148. (When) Do Leaders Make Differences? (5)** (Same as Geography M142 and Honors Collegium M152.) Lecture, two hours; discussion, two hours. Examination of leaders who did or did not succeed in effecting change, as background to understanding conditions under which leaders can make differences. Comparison of political leaders, business chief executive officers, sports coaches, and religious leaders. Letter grading.

**149. Selected Topics in Social Anthropology. (4)** Lecture, three hours; discussion, one hour (when scheduled). Study of selected topics in social anthropology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

## Linguistic Anthropology

**M150. Language in Culture. (5)** (Same as Linguistics M146.) Lecture, three hours; discussion, one hour; fieldwork, two hours. Requisite: course 4 or Linguistics 20. Study of language as aspect of culture; relation of habitual thought and behavior to language; and language and classification of experience. Holistic approach to study of language, with emphasis on relationship of linguistic anthropology to fields of biological, cultural, and social anthropology, as well as archaeology. (Core course for linguistics field.) P/NP or letter grading.

**151. Ethnography of Everyday Speech. (5)** Lecture, three hours; fieldwork. Requisite: course 4. Designed for juniors/seniors. Course has two interrelated objectives: (1) to introduce students to ethnography of communication—description and analysis of situated communicative behavior—and sociocultural knowledge that it reflects and (2) to train students to recognize, describe, and analyze relevant linguistic, proxemic, and kinesic aspects of face-to-face interaction. P/NP or letter grading.

**M152P. Language Development and Socialization. (4)** (Same as Psychology M149.) Lecture, three hours; discussion, one hour (when scheduled). Exploration of processes through which children learn structures and practices of language and become competent participants in linguistic and social worlds around them. Examination of language use and socialization over childhood, across communities of practice, and across different ethnic and socioeconomic groups. Bridges work from anthropology, psychology, linguistics, and cognitive science. Topics include cross-cultural perspectives on child development and wide range of methodological approaches. Examination of ways in which language development and socialization interface with culture, modality, inequality, education, and cognition. P/NP or letter grading.

**152Q. Language and Social Organization through Life Cycle. (4)** Lecture, three hours. Requisite: course 4. Examination of forms of participation and talk-in-interaction across various phases of life cycle from birth to old age, using videotaped interactions of naturally occurring activities. How language and interaction within specific contexts are used to constitute identity and how interaction order resulting from face-to-face interaction provides building blocks for larger formations that arise from such activities. P/NP or letter grading.

**152R. Language, Culture, and Education. (4)** Lecture, three hours. Requisite: course 4. Examination of various ways in which culture, and language in particular, influence not only educational processes and outcomes, but also very conceptions of what normal development processes and desirable educational outcomes are. P/NP or letter grading.

**153. Language and Identity. (4)** Lecture, three hours. Requisite: course 4. Language as social phenomenon. Introduction to several angles from which language use can be critically examined as integral to interactions between individuals and between social groups. P/NP or letter grading.

**154P. Multilingualism: Communities and Histories in Contact.** (4) Lecture, three hours. Prerequisite: course 4. Examination of communicative, political, and poetic aspects of use of two or more languages (multilingualism) by individuals and by groups. Broader themes in social theory, anthropological inquiry, sociolinguistics, and literary studies in lectures to contextualize class readings. P/NP or letter grading.

**154Q. Gender and Language in Society.** (4) Lecture, three hours; discussion, one hour (when scheduled). Prerequisite: course 4. Examination of role language plays in social construction of gender identities and ways in which gender impacts language use and ideologies. P/NP or letter grading.

**154SL. Gender and Language across Communities.** (4) Lecture, three hours; discussion, one hour. Prerequisite: course 4. Examination of how language practices contribute to expression of gendered identities in different social groups and situations. Completion of 20 hours of service learning in community service program coordinated through Center for Community Learning required. Active participation in organized service that is conducted in and meets needs of communities. P/NP or letter grading.

**155. Native American Languages and Their Speakers.** (4) Lecture, three hours. Prerequisite: course 4 or American Indian Studies M10. Introduction and comparative analysis of sociocultural aspects of language ideologies and language use in indigenous speech communities through Americas. Examination of cultural diversity of discourse practices for both everyday forms of speaking as well as special registers used in particular cultural contexts. Role of language and communication in Native American education contexts is also examined. Considerable attention is paid to Native American verbal art because of its cultural importance. Examination also of language shift away and current efforts by indigenous groups to reclaim and revitalize heritage languages. Role of linguistic racism directed at Native Americans and hegemonic influence of nation-states is also examined. P/NP or letter grading.

**M156. Language Endangerment and Linguistic Revitalization.** (4) (Same as American Indian Studies M162.) Lecture, three hours; activity, one hour. Prerequisites: course 4, American Indian Studies M10. Examination of causes and consequences of current worldwide loss of linguistic diversity and revelation of kinds of efforts that members of threatened heritage language communities have produced in their attempt to revitalize these languages. Projected loss of as many as half of world's languages by end of 21st century can only be explained as outcome of such factors as nationalism, global economic forces, language ideological change, and language shift away from smaller indigenous and tribal languages. Since loss of such languages means both reduction of cultural as well as linguistic diversity, many affected communities have engaged in various language renewal practices. Examination of some diverse strategies that have been attempted, including immersion, language and culture classes, master-apprentice, interactive multimedia, mass media approaches, and language policy-reform approaches. Evaluation of effectiveness of these measures and of very imagery used to discuss language endangerment. P/NP or letter grading.

**C157P. Language and Politics.** (4) Lecture, three hours; discussion, one hour (when scheduled). Prerequisite: course 4. Use of recent political events to collect, learn how to analyze, and write up short pieces on political talk, primarily in U.S. Concurrently scheduled with course C257P. P/NP or letter grading.

**M158. Culture of Jazz Aesthetics.** (4) (Same as Ethnomusicology M130 and Global Jazz Studies M130.) Lecture, three hours. Recommended prerequisite: course 3 or 4 or Ethnomusicology 20A or 20B or 20C. Aesthetics of jazz from point of view of musicians who shaped jazz as art form in 20th century. Listening to and interacting with professional jazz musicians who answer questions and give musical demonstrations. Analytical resources and historical knowledge of musicians and ethnomusicologists combined with those interested in jazz as cultural tradition. P/NP or letter grading.

**158P. Global Hip Hop Culture(s): Hip Hop, Race, and Social Justice from South Central to South Africa.**

(4) Lecture, three hours; discussion, one hour (when scheduled). Prerequisite: course 4. Focus on hip hop culture—movement that has captured minds of youth around world shaping youth identities, ideologies, styles, languages, fashions, and physical and political stances. Through documentaries, readings, and music listening sessions, exploration of various local scenes that comprise global hip hop nation—multilingual, multiethnic movement that often resists geopolitical status quo. P/NP or letter grading.

**159. Selected Topics in Linguistic Anthropology.** (4) Lecture, three hours; discussion, one hour (when scheduled). Study of selected topics in linguistic anthropology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

## Regional Cultures

**160A. Native North Americans.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Consideration of diversity of Native American societies north of Mexico, including their origins, formation, and development. Particular attention to subsistence systems and their relationship to social institutions and cultural practices, especially religion. P/NP or letter grading.

**160B. Change and Continuity among Native North Americans.** (4) Lecture, three hours. Prerequisite: course 160A. Consideration of tremendous change Native American societies and cultures have undergone since European contact. Emphasis on patterns of adaptation and continuity as Native Americans confronted colonization and its implications. P/NP or letter grading.

**161. Latin American Communities.** (4) Lecture, three hours. Overview of social and cultural anthropology of small communities in Latin America. Similarities and contrasts in social organization and interpersonal relations described in context of economic, political, and cultural environments. P/NP or letter grading.

**162. Ethnography of South America.** (4) Lecture, three hours. Introduction to ethnography of South American Indians, with special emphasis on Lowland South America. Survey of history and development of man and society in this world area and examination of exemplary cultures symptomatic of various levels of cultural achievement. P/NP or letter grading.

**163P. Ideology and Social Change in Contemporary China.** (4) Lecture, three hours; discussion, one hour (when scheduled). Introduction to sociocultural changes in China from 1949 to present. Topics include ideology and politics in everyday life, social stratification and mobility, cultural construction of socialist person, changes in courtship, marriage, and family, and political economy of reforms in post-Mao era. P/NP or letter grading.

**163Q. Societies of Central Asia.** (4) Lecture, three hours; discussion, one hour (when scheduled). Overview of culture and society among diverse peoples of Inner Asia, including Mongolia, Tibet, and Soviet Central Asia. Topics include environment and economic adaptation, politics in traditional isolation and within framework of recent national integration, kinship, forms of marriage and status of women, religion and social order in Hindu/Buddhist culture contact zone, and current problems of modernization. P/NP or letter grading.

**163R. Japan.** (4) Lecture, three hours. Overview of contemporary Japanese society. General introduction, kinship, marriage and family life, social mobility and education, norms and values, religions, patterns of interpersonal relations, social deviance. P/NP or letter grading.

**166P. Sub-Saharan Africa.** (4) Lecture, three hours. Issues of ecology and political economy; continuing impacts of colonialism, nationalism, and current challenges for development; changes in social relations. Examination of Africa's significance to development of anthropology. Cultural background for understanding events in contemporary Africa provided. P/NP or letter grading.

**M166Q. Culture Area of Maghrib (North Africa).** (4) (Same as Arabic M171 and History M108C.) Lecture, three hours. Designed for juniors/seniors. Introduction to North Africa, especially Morocco, Algeria, Tunisia, and Libya, also known as Maghrib or Tamazgha. Topics include changing notions of personal, tribal, ethnic, linguistic and religious identities; colonialism; gender and legal rights, changing representations of Islam, and religions in region's public spaces. P/NP or letter grading.

**167. Culture Area of Middle East.** (4) Lecture, three hours. Study of Middle East has suggested many theories as to developmental history of humankind, evolution of human society, birth of monotheism, and origin of agriculture, trade, and cities. Presentation of anthropological material relevant to understanding Middle East as culture area, and Islam as basis of its shared tradition. P/NP or letter grading.

**168P. Cultures of Pacific.** (4) Lecture, three hours. Four major culture areas of Australia, Melanesia, Polynesia, and Micronesia. General geographical features, prehistory, and language distribution of whole region. Distinctive sociocultural features of each culture area presented in context of their adaptive significance. P/NP or letter grading.

**M168Q. Ethnic Identity and Ethnic Relations in Hawai'i.** (4) (Same as Asian American Studies M143C.) Lecture, three hours; discussion, one hour. Continuing construction and expression of ethnic identity in various cultural forms and social contexts in Hawai'i. Overview of theoretical approaches to and basic concepts in study of ethnic identity and ethnic relations. Discussion of historical and contemporary aspects of ethnic identity and ethnic relations in Hawai'i. Given in Hawai'i. P/NP or letter grading.

**169. Selected Topics in Regional Cultures.** (4) Lecture, three hours; discussion, one hour (when scheduled). Study of selected topics in regional cultures. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

## Specialized Studies

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Anthropology.** (4) Seminar, three hours. Research seminar on selected topics in anthropology. Reading, discussion, and development of culminating project. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

**191HA. Beginning Seminar.** (4) Seminar, three hours. Limited to anthropology honors program students. Survey of major research strategies in anthropology to aid honors students in developing research proposals. Letter grading.

**191HB. Field Methods.** (4) Seminar, three hours. Limited to anthropology honors program students. Survey of major field methods in anthropology to prepare students to conduct their own field research. Letter grading.

**191HC. Data Analysis.** (4) Seminar, three hours. Limited to anthropology honors program students. Survey of major forms of data analysis in anthropology to aid honors students in analysis of their own research data. Letter grading.

**191HD. Writing for Anthropology.** (4) Seminar, three hours. Limited to anthropology honors program students. Teaching of writing skills, with focus on how to write honors theses. Letter grading.

**191HE. Writing for Publication and Conference Presentations.** (4) Seminar, three hours. Limited to anthropology honors program students. Preparation of honors theses for publication and for conference presentations and posters. Letter grading.

**193. Journal Club Seminars: Anthropology.** (1) Seminar, one hour. Limited to undergraduate students. Discussion of current readings in discipline. May be linked with speaker series. May be repeated for credit with topic change. P/NP grading.

**194. Research Group Seminars: Anthropology.** (1) Seminar, one hour. Limited to undergraduate students who are part of research group or internship. Discussion of research methods and current literature in discipline or of research of faculty members or students. May meet concurrently with graduate research seminar. May be repeated for credit with topic change. P/NP grading.

**195CE. Community and Corporate Internships in Anthropology.** (4) Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend biweekly meetings with graduate student instructor, and write final research paper. Faculty mentor and graduate student instructor construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major; units applied must be taken for letter grade. May not be applied toward concentration or distribution requirements. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Anthropology.** (2 to 8) Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned readings and tangible evidence of mastery of subject matter (e.g., paper or other product) required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Anthropology.** (2 to 8) Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Anthropology Graduate Proseminar.** (4) Seminar, three hours. Exposes incoming graduate students to contemporary view of anthropology by using work of UCLA faculty members to identify cross-cutting themes that bridge four fields of discipline and represent state of art of field. Historical overview of field

and tracing of formation of discipline. Faculty guest speakers engage in discussion on aspects of their work that intersect with one or more of topical threads of course, followed by responses by instructor and one or more student discussants. Discussion of speaker's work, instructor and student responses, and weekly readings selected from visiting faculty member's work and positioning speaker's work in broader history of field. S/U or letter grading.

**M201A-M201B. Graduate Core Seminars: Archaeology.** (4-4) (Same as Archaeology M201A-M201B.) Seminar, three hours. Course M201A is required of anthropology students in archaeology field. Seminar discussions based on carefully selected list of 25 major works related to development of archaeology in social sciences (M201A) and humanities (M201B). Core seminars provide students with foundation in breadth of knowledge required of professional archaeologists. Archaeological historiography, survey of world archaeology, and archaeological techniques. Emphasis on appreciation of multidisciplinary background of modern archaeology and relevant interpretative strategies. May be repeated for credit with consent of adviser. S/U or letter grading.

**M201C. Archaeological Research Design.** (4) (Same as Ancient Near East M201 and Archaeology M201C.) Seminar, three hours. Requisites: courses M201A, M201B. How to design archaeological projects in preparation for MA thesis or PhD phase. Students do exploratory research to select subject, then write research design that could form basis for extensive paper, grant application, or oral examination. Students work closely with faculty members and report weekly on their progress. Preparation of at least two oral progress-report presentations, one on theoretical framework and one on practical aspects of project. Final written research design that incorporates theoretical and practical aspects of research and formulates bridging arguments required. S/U or letter grading.

**202A. Core Seminar: Biological Anthropology Colloquium.** (4) Seminar, three hours. Required of anthropology students in biological anthropology subfield. Discussion focused on introducing students to field, and providing opportunity to present on current research and learn about, and engage with, work being done by others in department. Letter grading.

**202B. Core Seminar: Biological Anthropology.** (4) Seminar, three hours. Required of anthropology students in biological anthropology subfield. First in two-course series. Examination of theoretical and empirical writings that shaped biological subfield, and evolutionary studies of behavior more generally. Topics include evolutionary theory, paleoanthropology, population genetics, and evolutionary game theory. Letter grading.

**202C. Core Seminar: Biological Anthropology.** (4) Seminar, three hours. Required of anthropology students in biological anthropology subfield. Second in two-course series. Examination of theoretical and empirical writings that shaped biological subfield, and evolutionary studies of behavior more generally. Topics include evolutionary theory, primatology, evolutionary psychology, cultural evolution, and human behavioral ecology. Letter grading.

**203A. Core Seminar: Sociocultural Anthropology—Historical and Philosophical Foundations of Anthropology.** (4) Seminar, three hours. Preparation: two courses from 130, 135A, 150. Examination of theoretical writings that shaped foundations of anthropology as scholarly discipline. Consideration of writings of Durkheim, Weber, Marx, and others. Letter grading.

**203B. Core Seminar: Sociocultural Anthropology—Sociocultural Systems and Ethnography, Anthropology at Mid-Century.** (4) Seminar, three hours. Recommended requisite: course 203A. Examination of development of major schools of sociocultural thought during middle decades of 20th century. Emphasis on formation of sociocultural theories, concepts, and methodologies found in contemporary anthropology. Letter grading.

**203C. Core Seminar: Sociocultural Anthropology—Scientific and Interpretive Frameworks in Contemporary Anthropology.** (4) Seminar, three hours. Recommended requisite: course 203B. Examination of selected contemporary works and issues in field of sociocultural anthropology. Letter grading.

**204A. Core Seminar: Linguistic Anthropology.** (4) Seminar, three hours. Designed to familiarize graduate students with central theoretical and methodological concepts in linguistic anthropology. Study of classic and contemporary texts, focusing on relationship between language and culture. Focus on linguistic anthropological theory, with additional discussion of methodologies within and related to discipline including ethnographic fieldwork, conversational analysis, syntactic analysis, sociophonetic analysis, sociolinguistic interviewing, and philosophical approaches. Letter grading.

**204B. Core Seminar: Linguistic Anthropology.** (4) Seminar, three hours. Survey of recent full-length ethnographic works in linguistic anthropology to engage with methods, practices, topics, and central theoretical frameworks being used across subfield. Consideration of texts' relationship to works in other subfields, related disciplines, and prior approaches to understanding interplay between language, context, and culture. Consideration also of ethnographic writing as genre, and critical engagement with ways that authors present data, marshal theory, and present arguments within book format. This provides means of characterizing very different generic expectations for dissertation writing within anthropology, allowing for additional professionalization component. Letter grading.

## Archaeology

**210. Analytical Methods in Archaeological Studies.** (4) Seminar, three hours. Preparation: one term of statistics. Data analysis procedures in archaeology. Emphasis on conceptual framework for analysis of archaeological data, beginning at level of attribute and ending at level of region. S/U or letter grading.

**CM210Q. Introduction to Archaeological Sciences.** (4) (Same as Ancient Near East CM269.) Lecture, three hours. Basic understanding of newly introduced methods and techniques throughout field of archaeology to implement them and to appreciate and evaluate results of their use by others who have embedded them in their scholarly publications or theoretical models. Systematic instruction in digital data management and mining, scientific analysis of materials (including geological and biochemical techniques), and visual presentation of data and research results (ranging from simple graphs to virtual reality). Concurrently scheduled with course CM110Q. S/U or letter grading.

**211. Classification in Archaeology: Method and Theory.** (4) Seminar, three hours. Limited to graduate anthropology and archaeology students. Discussion of issues that have guided arguments about how archaeological classification of artifacts should be conducted, with focus on ceramic classification and discovery of cultural types. Methods for implementing discovery approach to classification illustrated with lithic and pottery examples. Review of relationship between classification, style, and function. S/U or letter grading.

**212P. Explanation of Societal Change.** (4) Seminar, three hours. Examination of processes of societal evolution, emphasizing usefulness of variety of explanatory models from general systems theory, ecology, anthropology, and other sources. Specific research questions vary with each course offering. May be repeated for credit. S/U or letter grading.

**212Q. Archaeology of Urbanism.** (4) Seminar, three hours. Evaluation of cities as most complex form of human population center, using both archaeological and modern examples. Observations about material culture and space enable assessment of social dynamics as cities are constructed and lived in by variety of different ethnic, economic, ritual, and political groups. S/U or letter grading.



**214. Selected Topics in Prehistoric Civilizations of New World.** (4) Seminar, three hours. Mesoamerican and Andean civilizations normally constitute major focus of seminar. May be repeated for credit. S/U or letter grading.

**M216. Topics in Asian Archaeology.** (4) (Same as Art History M258B.) Seminar, three hours. Designed for graduate students. Topics may include identification of ethnic groups in archaeology, archaeology of religion, archaeological reflections of commerce and trade and their influence on social development, archaeology of language dispersal, cultural contact and nature of cultural influence. S/U or letter grading.

**CM217. Selected Laboratory Topics in Archaeology.** (4) (Same as Archaeology M205A.) Lecture, one hour; laboratory, two hours. Designed for graduate students in archaeology or in other departments. Specialized analysis of particular classes of cultural remains. Topic may be one of following: zooarchaeology, paleoethnobotany, ceramics, lithic analysis, rock art. Laboratory experience with collections and data. May be repeated for credit with topic change. Concurrently scheduled with course C117. S/U or letter grading.

**219. Selected Topics in Anthropological/Archaeological Theory.** (4) Seminar, three hours. Designed for graduate students. Variable topics course on important theoretical subjects in anthropological archaeology. Topics include early village societies, specialization and cultural complexity, ethnography for archaeologists, power and hierarchy in intermediate societies, materialist/idealist debates, urbanism, and exchange systems. May be repeated for credit. S/U or letter grading.

## Biological Anthropology

**221. Behavior, Evolution, and Culture.** (2) Seminar, 90 minutes. Research seminar. Weekly speakers present recent findings and theories in behavior, evolution, and culture. Focus on biological approaches to human and non-human behavior, psychology, and culture. S/U grading.

**222. Graduate Core Seminar: Biological Anthropology in Review.** (4) Seminar, three hours. Graduate core course in biological anthropology. Topics include evolutionary theory, behavior of nonhuman primates, hominid evolutionary history, and contemporary human variation. Letter grading.

**223. Experimental Biological Anthropology.** (2) Seminar, two hours. Research seminar for graduate students conducting experimental research in biological anthropology to assist students in developing research ideas and methods and analyzing results. S/U grading.

**229. Current Problems in Biological Anthropology.** (4) Seminar, three hours. Detailed examination of current research in biological anthropology (specific topics to be announced). Emphasis on nature of hypotheses and their testing in ongoing student and faculty research. May be repeated for credit. S/U or letter grading.

## Sociocultural Anthropology

**230. Practice Theory and Beyond.** (4) Seminar, three hours. Prerequisites: courses 203A, 203B, 203C. Background in classic social theory—Marx, Weber, Durkheim—assumed. Designed for graduate anthropology students. Basic texts in practice theory by Pierre Bourdieu and Anthony Giddens. Series of upgrades on basic practice theory framework, with greater attention to issues of power and need to historicize anthropological work, and new perspectives on concept of culture. S/U or letter grading.

**232P. Anthropology and Media Theory.** (4) Seminar, three hours. Limited to graduate students. Examination of theoretical assumptions and debates that animate visual anthropology very broadly defined, including issues of interpretation, production, and reception of visual media, which includes ethnographic, documentary, and feature films, as well as television programming. S/U or letter grading.

**232Q. Ethnographies of Information Technology.** (4) Seminar, three hours. Emerging work on new information economy, with emphasis on ethnography. Reading of anthropological work and materials from

range of disciplines, including sociology, geography, urban studies, and management studies. S/U or letter grading.

**233P. Advanced Seminar: Medical Anthropology.** (4) Seminar, three hours. Limited to 15 students. Examination of interrelationships between society, culture, ecology, health, and illness. Bases for written critical analysis and class discussion provided through key theoretical works. S/U or letter grading.

**M233Q. Latin America: Traditional Medicine, Shamanism, and Folk Illness.** (4) (Same as Community Health Sciences M264 and Latin American Studies M264.) Lecture, three hours. Recommended preparation: Community Health Sciences 132, bilingual English/Spanish skills. Examination of role of traditional medicine and shamanism in Latin America and exploration of how indigenous and mestizo groups diagnose and treat folk illness and Western-defined diseases with variety of health-seeking methods. Examination of art, music, and ritual and case examples of religion and healing practices via lecture, film, and audiotape. Letter grading.

**M233R. Health and Culture in Americas.** (4) (Same as Community Health Sciences M260 and Latin American Studies M260.) Lecture, three hours. Recommended prerequisite: Community Health Sciences 132. Health issues throughout Americas, especially indigenous/Mestizo Latin American populations. Holistic approach covering politics, economics, history, geography, human rights, maternal/child health, culture. Letter grading.

**233T. Narrative and Times of Trouble.** (4) Seminar, three hours. Recommended prerequisite: one course from 203A, 203B, 203C, 204, or 252A. Exploration of how linguistic and psychological/medical anthropology inform each other in relation to narrative and times of trouble. Topics include narrative sense-making in response to illness and misfortune; phenomenology of time; narrative, healing, and experience; remembering through narrative; narrative subjectivity; and narrative and selves in motion. S/U or letter grading.

**234. Mind, Medicine, and Culture.** (2) Seminar, two hours. Interdisciplinary discussion group hosting regular talks and discussions with scholars from UCLA and beyond. Group provides forum for exploring recent research and classical and contemporary theoretical perspectives that inform psychocultural studies and medical anthropology. S/U grading.

**235. Individual in Culture.** (4) Seminar, three hours. Designed for graduate students. S/U or letter grading.

**236. Seminar: Psychocultural Studies and Medical Anthropology.** (4) Seminar, three hours. Devoted to present state of research in psychocultural studies. Survey of work in child development and socialization, personality, psychobiology, transcultural psychiatry, deviance, learning, perception, cognition, and psychocultural perspectives on change. S/U or letter grading.

**M237. Psychological Anthropology.** (4) (Same as Psychiatry M272.) Seminar, three hours. Various psychological issues in anthropology, both theoretical and methodological. Areas of interest include such things as culture and theory, culture and personality, and culture psychiatry. Discussion of questions relating to symbolic and unconsciousness process as they relate to culture. Topics vary from term to term. May be repeated for credit with topic change. S/U or letter grading.

**M238. Native American Revitalization Movements.** (4) (Same as History M260C.) Lecture, two hours; discussion, one hour. Examination of revitalization movements among native peoples of North America (north of Mexico). Specific revitalization includes Handsome Lake, 1870 and 1890 Ghost Dances, and Peyote Religion. Letter grading.

**239. Selected Topics in Field Ethnography.** (4 to 8) Seminar, three hours. Discussion and practicum in various techniques for collecting and analyzing ethnographic field data. S/U or letter grading.

**239Q. Ethnographic Methods in Sociocultural Anthropology.** (4) Seminar, three hours. Introduction to some of key methods used in anthropological research, paying special attention to topic formation, research design, deployment of evidence and theoret-

ical resources, techniques of engagement (participant observation, interviewing, genealogy, etc.), media making and analysis, and politics and ethics of ethnographic knowledge production. Approach combines readings in critical anthropology relevant to methodological practice with workshop-style explorations of particular techniques for gathering, analyzing, and presenting field material. Exploration of limits and power of ethnography (broadly construed) by setting up model projects and experimenting with typical fieldwork tasks. S/U or letter grading.

**M239R. Latinx Photoethnography.** (4) (Same as Chicana/o and Central American Studies M218.) Seminar, three hours. Hands-on introduction to using photography as ethnographic field method. Introduction to basics of photography with review of key and relevant literature from fields of sociocultural anthropology, visual anthropology, and photographic theory. Exploration of technical, ethical, and aesthetic aspects of picture making and their relationship to anthropological field methods, participant observation, and issues of representation—especially among Latinx communities. Student-lead discussions of assigned readings and in-class hands-on learning. Quarter-long photoethnography project focused on Latinx issues in greater Los Angeles. S/U or letter grading.

**241. Culture, Power, Social Change.** (2) Seminar, two hours. Cutting-edge research in sociocultural anthropology. Talks given by scholars from different universities around world and faculty and students from UCLA with discussion regularly attended by students and faculty from wide range of related departments in addition to anthropology. Additional discussions about recently published or unpublished manuscripts. Professionalization sessions for doctoral students. Topics of discussion vary from year to year. S/U grading.

**242. Urban Anthropology.** (4) Seminar, three hours. Intensive anthropological examination of urban setting as human environment. S/U or letter grading.

**M243. Gender Systems.** (4) (Same as Gender Studies M263.) Seminar, three hours. Current theoretical developments in understanding gender systems cross-culturally, with emphasis on relationship between systems of gender, economy, ideational systems, and social inequality. Selection of ethnographic cases from recent literature. S/U or letter grading.

**C244M. Multispecies Anthropology.** (4) Lecture, three hours. Survey of human-animal relationships across history, from origins of domestication to present-day debates over animal rights, and very different ways societies distant in time and space from our own have construed inner lives of other species and their ties to human others. Concurrently scheduled with course C144M. S/U or letter grading.

**M244P. Contemporary Issues of American Indians.** (4) (Same as American Indian Studies M200C and Sociology M275.) Seminar, three hours. Introduction to most important issues facing American Indians as individuals, communities, tribes, and organizations in contemporary world, building on historical background presented in American Indian Studies M200A and cultural and expressive experience of American Indians presented in American Indian Studies M200B. Letter grading.

**C244S. Repatriation of Native American Human Remains and Cultural Objects.** (4) Lecture, two hours; discussion, one hour. Native Americans have recently been successful in obtaining passage of federal and state laws repatriating human remains and cultural objects to them. Examination of this phenomenon. May be concurrently scheduled with course C144S. S/U or letter grading.

**M245. Critical Theory of African Diaspora.** (4) (Same as African American Studies M202.) Seminar, four hours. Introduction to variety of ideas that underlie articulation of construct of African diaspora. Structured through understanding of African diaspora as historical formation, with focus on African diaspora as distinct intellectual project. Exploration of ways scholars have conceptualized and theorized diasporic condition of Black peoples. Consideration of who belongs to African diaspora community, and how this community is imaged. S/U or letter grading.

**246. Contemporary Problems in Africa. (4)** Seminar, three hours. Problematic issues in Africa in light of classical anthropological literature and recent work by anthropologists and other fieldworkers in Africa, with cases from eastern and southern Africa. S/U or letter grading.

**M247P. Japan in Age of Empire. (4)** (Same as Asian M292 and History M286.) Seminar, three hours. Designed for graduate students. Since late 19th century, Japan expanded its empire into East and Southeast Asia. Coverage of that period and array of anthropological studies conducted in Japan's colonies and occupied areas in this hardly explored area of study of colonialism. S/U or letter grading.

**M247Q. Central Asian Studies: Discipline, Methods, Debates. (2)** (Same as History M287 and Near Eastern Languages M287.) Seminar, two hours. Introduction to study of central Asia as practiced in humanities and social sciences disciplines. S/U grading.

**247R. Modernization and Taiwan Indigenous Societies. (4)** Seminar, three hours. Historical examination of impact of modernization on indigenous populations in Taiwan beginning with Han colonization. Examination of integration of indigenous groups into state politics and market economy, and state-sponsored discourses that forced erasure of indigenous cultures and knowledge. Study of resistance by groups to assimilationist processes through emergence of new strategies meant to maintain indigenous identities with regard to Han hegemony. Focus on intensification of indigenous peoples' tie to land. Offers framework to understanding Taiwan indigenous peoples' experiences under modernization. S/U or letter grading.

**M248. Anthropology and History of Mediterranean. (4)** (Same as History M248 and Near Eastern Languages M248.) Seminar, three hours. Introduction to historical and anthropological writings about Mediterranean. Draws on variety of classic and contemporary theories, histories, and ethnographies about Mediterranean Sea. Topics include geographical and imaginary boundaries, Mediterranean honor/shame concepts, colonial and post-colonial Mediterranean, Levantinism, thalassology, Mediterraneanism, French Mediterraneans, Jewish Mediterranean, colonial and post-colonial sea and migrants and mobilities. Focus on critical history of anthropological study of Mediterranean and scholarly literature that emphasizes southern shores of Mediterranean. Letter grading.

**249. Selected Topics in Social Anthropology. (4)** Seminar, three hours. Intensive examination of current theoretical views and literature. S/U or letter grading.

## Linguistic Anthropology

**252A. Ethnography of Communication. (4)** Seminar, three hours. Designed for graduate students. Seminar devoted to examining representative scholarship from fields of sociolinguistics and ethnography of communication. Particular attention to theoretical developments including relationship of ethnography of communication to such disciplines as anthropology, linguistics, and sociology. Topical foci include style and strategy, speech variation, varieties of noncasual speech genres, languages and ethnicity, and non-verbal communication behavior. S/U or letter grading.

**252B. Ethnographic Methods in Language, Interaction, and Culture. (4)** Seminar, three hours. Requisite: course 252A or Sociology 244A. Ethnographic approaches to recording and analyzing communicative events and practices in their sociocultural context, involving student-initiated fieldwork in community setting. Emphasis on hands-on activities within theoretical frameworks that consider language as social and cultural practice. Devoted to skills related to collecting socially and culturally meaningful data. Letter grading.

**253. Language Ideologies: Political Economy of Language Beliefs and Practices. (4)** Lecture, three hours. Language ideological research problematizes fundamental assumptions about speakers' use of language and communicative practices: (1) speakers' awareness of these structures and processes and (2) relationship of this consciousness to speakers' political economic perspectives and to actual communicative conduct. S/U or letter grading.

**254. Discourse Laboratory. (2)** Seminar, two hours. Interdisciplinary discussion group around in-progress research projects, talks, published articles, and methodological and professional development in linguistic anthropology. S/U grading.

**M255. Native American Languages and Discourses of Indigeneity. (4)** (Same as American Indian Studies M208.) Seminar, three hours. Preparation: prior coursework in anthropology, linguistics, or American Indian studies. Close reading and discussion of books and articles on topics relating to Native American languages and discourse of indigenous communities. Topics include critical language documentation, multilingualism, indigenous language practices, language ideologies, policies and practices of publication and concealment, language revitalization, language and identity, language and construction of place, storytelling and performance, community/academic collaboration, language as intellectual property, linguistic expressions of indigeneity, and cultural sovereignty. Offers resources to understand situation of indigenous languages in wide range of Native American communities. Students perform variety of roles in discussions, an develop book reviews, grant proposals, critical essays, and—where appropriate—sections of their theses and dissertations. S/U or letter grading.

**M256. Language, Culture, and Education. (4)** (Same as Education M286.) Seminar, three hours. Examination of ongoing movement to reclaim and reimagine schooling as site to sustain indigenous, Black, Latinx, Asian and Pacific Islander communities, including ways these identities/memberships intersect with gender identity and expression, sexuality, disability, language, migration, place, class, and more. For centuries of teaching and learning, communities have sought to push against ways nation-state schools have devalued communities, their lifeways, and their lives. Most recently, this movement is indebted to several decades of research, theory, and practice in asset or strength-based pedagogy tradition. Work on culturally sustaining pedagogy (CSP) has joined these decades (and centuries) of work to offer vision of school that seeks to perpetuate and foster—to sustain—linguistic, literate, and cultural pluralism as part of schooling for positive social transformation and revitalization. S/U or letter grading.

**257. Topics in Semantics and Pragmatics. (4)** Seminar, four hours. Detailed examination of specialized topics in semantics and pragmatics. Topics vary from year to year and may include metaphor, theories of reference and denotation, honorific speech, evidentiality, reported speech, etc. May be repeated for credit with topic change. S/U or letter grading.

**C257P. Language and Politics. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 4. Use of recent political events to collect, learn how to analyze, and write up short pieces on political talk, primarily in U.S. Concurrently scheduled with course C157P. S/U or letter grading.

**258. Language Socialization. (4)** Seminar, four hours. Exploration of process of socialization through language and socialization to use language across lifespan, across communities of practice within single society, and across different ethnic and socioeconomic groups. Ways in which verbal interaction between novices and experts is structured linguistically and culturally. S/U or letter grading.

**259. Selected Topics in Linguistic Anthropology. (4)** Seminar, three hours. Problems in relations of language, culture, and society. May be repeated for credit. S/U or letter grading.

## Research Methods

**282. Research Design in Cultural Anthropology. (4)** Lecture, three hours. Primarily designed for graduate students preparing for fieldwork. Unique position of anthropology among sciences and resulting problems for scientific research design. Review of typical research problems and appropriate methods. Students prepare their own research designs and present them for class discussion. S/U or letter grading.

**283. Proposal Writing Seminar. (4)** Seminar, three hours. Introduction to art of proposal writing. Focus on proposal for anthropological fieldwork, with skills

being useful across disciplines and proposal genres. Structured as writing workshop, with weekly writing assignments and group critique. S/U or letter grading.

**284B. Quantitative Research Methodology. (4)** Seminar, three hours. Limited to graduate students. Recommended preparation: research design course. Hands-on approach to qualitative methods used in anthropological research and techniques for analysis of qualitative data. Particular methods depend on and are appropriate to research questions and designs students bring to class. S/U or letter grading.

**M285A. Qualitative Research: Design and Data Collection. (4)** (Formerly numbered M284A.) (Same as Community Health Sciences M216A.) Seminar, three hours; laboratory, one hour. Intensive seminar/field course in qualitative research methodology. Emphasis on using qualitative methods and techniques in research and evaluation related to health care. Letter grading.

**M285B. Qualitative Research: Analysis and Dissemination. (4)** (Same as Community Health Sciences M216B.) Lecture, three hours. Hands-on approach to qualitative data analysis. Students learn how to conduct all steps of thematic analysis, including developing codes and coding schemes, analytic techniques to compare and categorize data, assessing validity and quality of data, as well as summarizing and presenting qualitative findings. Lectures, discussion of readings, and practical exercises by hand and with Dedoose computer software. S/U or letter grading.

**288. Relational Models Theory and Research Design. (4)** Seminar, three hours. Relational models theory (RMT) posits that people in all cultures use combinations of just four relational models (RMs) to organize most aspects of most social coordination: communal sharing, authority ranking, equality matching, and market pricing. Exploration of how people use these RMs to motivate, generate, constitute, coordinate, judge, and sanction social interaction. RMT aims to account for what is universal and what varies across cultures, positing necessity for cultural complements that specify how and with whom each relational model operates. Readings may include RMT research in social anthropology, archaeology, social theory, semiotics, linguistics, developmental, cognitive, social, political, moral, clinical, and cultural psychology, neuroscience, evolution, sociology, family studies, philosophy, management, marketing, and consumer psychology, economics, justice, public health, public policy, and international development. S/U or letter grading.

## Specialized Studies

**294. Human Complex Systems Forum. (1)** Seminar, 90 minutes every other week. Interdisciplinary seminar series to provide students with exposure to current research in understanding nature of human societies from complexity and multiagent perspective. May be repeated for credit. S/U grading.

**295. Phenomenological Anthropology. (4)** Seminar, three hours. Enforced prerequisites: courses 203A, 203B, and 203C, or 204A and 204B. Introduction to European phenomenology and its relevance for anthropological research. Exploration of problem of intersubjectivity in its existential, semiotic, and linguistic dimensions. Key topics include human intentionality, consciousness, empathy, agency, cooperation, experience, and embodiment. S/U or letter grading.

**299. Selected Topics in Anthropology. (4)** Seminar, three hours. Designed for graduate students. Study of selected topics of anthropological interest. Consult Schedule of Classes for topics and instructors. May be repeated for credit. S/U or letter grading.

## Special Studies

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Anthropology. (2 to 4)** Seminar/workshop, three hours. Designed for graduate students. Required of all new teaching assistants. Workshop/seminar in teaching techniques, including evaluation of each student's own performance as teaching assistant. Four-day workshop precedes beginning of term, followed by 10-week seminar during term designed to deal with problems and techniques of teaching anthropology. Unit credit may be applied toward full-time equivalence but not toward nine-course requirement for MA. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Individual Studies for Graduate Students. (2 to 8)** Tutorial, to be arranged. Directed individual studies. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. S/U grading.

**598. Research for and Preparation of MA Capstone Report or Thesis. (2 to 8)** Tutorial, to be arranged. Preparation of research data and writing of MA capstone report or thesis. S/U grading.

**599. Research for PhD Dissertation. (2 to 12)** Tutorial, to be arranged. PhD dissertation research or writing. Students must have completed qualifying examinations and ordinarily take no other coursework. S/U grading.

## APPLIED LINGUISTICS

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Linguistics

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Linguistics e-mail

Kie R. Zuraw, PhD, *Director of Graduate Studies*

## Overview

The UCLA Academic Senate approved the disestablishment of the Department of Applied Linguistics; the discontinuance of the graduate degree and certificate programs, Language Teaching minor, and African Languages BA; and the transfer of the Applied Linguistics BA to the Department of Linguistics effective winter quarter 2015. Students currently enrolled in any of the programs may complete them under current requirements.

## Undergraduate Study

The Applied Linguistics BA was transferred to the [Linguistics](#) Department effective winter quarter 2015.

## Graduate Study

The Department of Applied Linguistics offers Master of Arts (MA), Candidate in Philosophy (CPhil), and Doctor of Philosophy (PhD) degrees in Applied Linguistics. However, the UCLA Academic Senate approved the discontinuance of the graduate degree and certificate programs effective winter quarter 2015. Students

currently enrolled in any of the programs may complete them under current requirements.

## Applied Linguistics

### Lower-Division Course

**30W. Language and Social Interaction. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 30. Exploration of range of topics related to study of language and social interaction in both mundane and professional settings, particularly how language affects social lives and how social organization affects use of language. Topics include different approaches to study of language in social interaction (theories and research methodologies), issues regarding language and social identity (such as socioeconomic status, race, gender, and situational identity), and issues concerning language and culture (such as cross-cultural misunderstanding and language socialization). Satisfies Writing II requirement. Letter grading.

### Graduate Courses

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study. (2 to 12)** Tutorial, to be arranged. Limited to MA and PhD students. Independent study in one area of applied linguistics. May not be applied toward MA course requirements. Up to 8 units may be applied toward PhD course requirements. May be repeated for credit. S/U or letter grading.

**597. Preparation for PhD Candidacy Examination. (4 to 8)** Tutorial, to be arranged. Preparation: completion of at least six courses of 32-unit requirement for PhD. May not be applied toward 32-unit requirement. May be repeated for credit. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (4 to 16)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Required of all PhD candidates each term they are registered and engaged in dissertation preparation. May be repeated for credit but may not be applied toward PhD course requirements. S/U grading.

## ARCHAEOLOGY

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College of Letters and Science

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Archaeology

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Stephen B. Acabado, PhD, *Chair*

## Faculty Committee

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Hans Barnard, MD, PhD (*Near Eastern Languages and Cultures*)

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P. Jeffrey Brantingham, PhD (*Anthropology, Mathematics*)

Aaron A. Burke, PhD (*Near Eastern Languages and Cultures*)

Meredith M. Cohen, PhD (*Art History*)

Kathlyn (Kara) M. Cooney, PhD (*Near Eastern Languages and Cultures*)

Jason P. De Léon, PhD (*Anthropology, Chicana/o and Central American Studies*)

Justin P. Dunnivant, PhD (*African American Studies, Anthropology*)

Sharon E.J. Gerstel, PhD (*Art History*)

Ioanna Kakoulli, DPhil (*Materials Science and Engineering*)

Richard G. Lesure, PhD (*Anthropology*)

Min Li, PhD (*Anthropology, Asian Languages and Cultures*)

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Stella E. Nair, PhD (*Art History*)

John K. Papadopoulos, PhD (*Classics*)

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Monica L. Smith, PhD (*Anthropology, Environment and Sustainability*)

Lothar von Falkenhausen, PhD (*Art History*)

Thomas A. Wake, PhD (*Anthropology*)

Willeke Z. Wendrich, PhD (*Near Eastern Languages and Cultures*)

Glenn Wharton, PhD (*Art History*)

Gregory D. Woolf, PhD (*Classics, History*)

## Overview

The Archaeology Interdepartmental Program brings together interests and specialties represented by those departments offering courses in archaeology, as well as others offering courses relevant to archaeology.

## Mission

The primary purpose of the program is to train scholars in archaeology for university-level teaching and research and other professional aims. Its resources are intended for those archaeology students whose academic goals cannot be met within any single department and who, consequently, require an individually designed plan of study combining academic preparation in two or more departments. Applications are especially encouraged from students whose interests may form bridges with disciplines and departments not offering archaeology (e.g., botany, chemistry, geology, mathematics, statistics, and zoology). There are opportunities for participation in a variety of field, laboratory, and computer studies.

## Graduate Major

### Archaeology MA, CPhil, PhD

The program does not encourage applicants who seek only an MA degree.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

# Archaeology

## Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**30. Science in Archaeology. (4)** Lecture, three hours; discussion, one hour. Archaeology is rapidly developing due to ongoing introduction of new hardware, software, and information dissemination technology. It is multidisciplinary field of study, combining its own research methods and technologies with elements from geology, history, ethnography, geography, material science, statistics, biology, biochemistry, medicine, and others, presenting opportunities not only to obtain new scholarly insights, but also to provide integrated instruction in science, technology, engineering, and mathematics (STEM) skills. Use of archaeological data as paradigm in STEM education. Instant practical application of mathematics during surveying, geology during ceramic analysis or geophysical research, biochemistry during archaeological residue analysis, or biology during zooarchaeological or paleoethnobotanical research offers point of departure for instructors as well as motivation to students. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**C110. Archaeological Materials Identification and Characterization. (4)** Lecture, one hour; laboratory, two hours. Laboratory-oriented introduction for archaeologists to identification and quantitative description of solid materials, especially metals, ceramics, and other inorganic and some organic substances. Concurrently scheduled with course C210. P/NP or letter grading.

**M112. Archaeology and Art of Christian and Islamic Egypt. (4)** (Same as Art History M119D, Islamic Studies M112, and Middle Eastern Studies M112.) Lecture, three hours. Culture of Egypt transformed gradually after Muslim conquest in mid-7th century CE. According to material evidence such as ceramics, textiles, architectural forms, and building techniques, it is functionally impossible to separate pre-Islamic Christian Egypt from early Islamic Egypt. Although population may have become largely Muslim by 10th century, Egypt remained Coptic in many senses even to 14th century and retains sizeable Christian minority to present. Survey of archaeological remains and standing architecture of Egypt from 6th to 19th century, charting changes and continuities in material culture and shifts in human geography and land use. P/NP or letter grading.

**C120. Special Topics in Archaeology. (2 or 4)** Lecture, three hours. Designed for juniors/seniors. Special topics on theoretical subjects in archaeology such as new strategies, regional synthesis, or current work by core program faculty or special visiting scholars. May be repeated for credit with topic change. Concurrently scheduled with course C220. Final project or paper required if taken for 4 units (P/NP or letter grading); 2-unit course has P/NP grading.

**C159. Fieldwork in Archaeology. (2 to 12)** Fieldwork, to be arranged. Participation in archaeological field excavations or museum research under supervision of staff archaeologists at UCLA. Minimum of one month of field time away from campus required. May be repeated for credit with consent of adviser. Concurrently scheduled with course C259. P/NP or letter grading.

**C180. Ancient and Historic Metals: Corrosion, Technology, and Microstructure. (6)** Seminar, four hours; laboratory, four hours. Overview of technology of ancient metals, aspects of extraction and alloying, corrosion that ancient metals undergo, and how this impacts their preservation. Exploration of knowledge and research work of last two decades that has substantially advanced understanding of processes of extraction, alloying, surface patination, metallic coatings, corrosion, and microstructure. Laboratory work in preparation and examination of metallic samples under microscope, as well as lectures on technology of metallic works of art. Discussion of phase and stability diagrams of common alloying systems and environments. Metallographic study samples represent Bronze Age Europe, Renaissance Europe, China from Warring States to Tang dynasty, Japanese sword-making, Indian high-tin bronze alloys, bronzes, Peruvian, Colombian, Costa Rican, and Panamanian copper and gold-copper alloys. Concurrently scheduled with course C280. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Graduate Courses

**M201A-M201B. Graduate Core Seminars: Archaeology. (4-4)** (Same as Anthropology M201A-M201B.) Seminar, three hours. Required of all students. Seminar discussions based on carefully selected list of 25 major works related to development of archaeology in social sciences (M201A) and humanities (M201B). Compulsory core seminars provide students with foundation in breadth of knowledge required of professional archaeologists. Archaeological historiography, survey of world archaeology, and archaeological techniques. Emphasis on appreciation of multidisciplinary background of modern archaeology and relevant interpretative strategies. May be repeated for credit with consent of adviser. S/U or letter grading.

**M201C. Archaeological Research Design. (4)** (Same as Ancient Near East M201 and Anthropology M201C.) Seminar, three hours. Requisites: courses M201A, M201B. How to design archaeological projects in preparation for MA thesis or PhD phase. Students do exploratory research to select subject, then write research design that could form basis for extensive paper, grant application, or oral examination. Students work closely with faculty members and report weekly on their progress. Preparation of at least two oral progress-report presentations, one on theoretical framework and one on practical aspects of project. Final written research design that incorporates theo-

retical and practical aspects of research and formulates bridging arguments required. S/U or letter grading.

**M205A. Selected Laboratory Topics in Archaeology. (4)** (Same as Anthropology CM217.) Lecture, one hour; laboratory, two hours. Designed for graduate students in archaeology or in other departments. Specialized analysis of particular classes of cultural remains. Topic may be one of following: zooarchaeology, paleoethnobotany, ceramics, lithic analysis, rock art. Laboratory experience with collections and data. May be repeated for credit with topic change. S/U or letter grading.

**205B. Intensive Laboratory Training in Archaeology. (6)** Lecture, three hours; laboratory, two hours minimum. Advanced laboratory training for graduate students with extended laboratory hours. Special laboratory-based topics, including but not limited to lithic analysis, ceramic analysis, zooarchaeology, and paleoethnobotany. May be repeated for credit with topic change. S/U or letter grading.

**C210. Archaeological Materials Identification and Characterization. (4)** Lecture, one hour; laboratory, two hours. Laboratory-oriented introduction for archaeologists to identification and quantitative description of solid materials, especially metals, ceramics, and other inorganic and some organic substances. Concurrently scheduled with course C110. S/U or letter grading.

**C220. Special Topics in Archaeology. (2 or 4)** Lecture, three hours. Special topics on theoretical subjects in archaeology such as new strategies, regional synthesis, or current work by core program faculty or special visiting scholars. May be repeated for credit with topic change. Concurrently scheduled with course C120. Final project or paper required if taken for 4 units (S/U or letter grading); 2-unit course has S/U grading.

**C259. Fieldwork in Archaeology. (2 to 12)** Fieldwork, to be arranged. Participation in archaeological field excavations or museum research under supervision of staff archaeologists at UCLA. Minimum of one month of field time away from campus required. May be repeated for credit with consent of adviser. Concurrently scheduled with course C159. S/U or letter grading.

**M265. Depositional History and Stratigraphic Analysis. (4)** (Same as Ancient Near East M265.) Lecture, two hours. Theoretical understanding of depositional processes (laws) which lead to site formation and of stratigraphic procedures to be used in recovery of embedded cultural materials. Study of issues covered in literature, with specific test cases from actual excavations and site reports. Coverage of theoretical implications of such disciplines as surveying and pedology with help of specialists. S/U or letter grading.

**C280. Ancient and Historic Metals: Corrosion, Technology, and Microstructure. (6)** Seminar, four hours; laboratory, four hours. Overview of technology of ancient metals, aspects of extraction and alloying, corrosion that ancient metals undergo, and how this impacts their preservation. Exploration of knowledge and research work of last two decades that has substantially advanced understanding of processes of extraction, alloying, surface patination, metallic coatings, corrosion, and microstructure. Laboratory work in preparation and examination of metallic samples under microscope, as well as lectures on technology of metallic works of art. Discussion of phase and stability diagrams of common alloying systems and environments. Metallographic study samples represent Bronze Age Europe, Renaissance Europe, China from Warring States to Tang dynasty, Japanese sword-making, Indian high-tin bronze alloys, bronzes, Peruvian, Colombian, Costa Rican, and Panamanian copper and gold-copper alloys. Concurrently scheduled with course C180. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.



**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Individual Studies for Graduate Students. (2 to 12)** Tutorial, to be arranged. May be repeated for credit with consent of adviser. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. Preparation: completion of formal coursework, passing of language examinations before enrollment. May be repeated for credit with consent of adviser. S/U grading.

**598. MA Paper Preparation. (2 to 12)** Tutorial, to be arranged. May be repeated for credit with consent of adviser. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 12)** Tutorial, to be arranged. May be repeated for credit with consent of adviser. S/U grading.

## ARCHITECTURE AND URBAN DESIGN

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Sylvia Lavin, PhD

Robin S. Liggett, PhD

Mark H. Mack, MArch

Thom Mayne, MA

Murray A. Milne, MArch

Barton Myers, MArch

George Rand, PhD

Dagmar E. Richter, DiplArch

Richard Schoen, MArch

Thomas R. Vreeland, Jr., MArch

### Associate Professors

A. Kutan Ayata, MArch

Georgina Huljich, MArch

Mariana Ibañez, MArch

Ayala Levin, PhD

Michael Osman, PhD

Jason K. Payne, MArch

### Assistant Professors

Cristóbal Amunátegui, PhD

Miroslava Brooks, MArch

### Adjunct Professors

Kevin M. Daly, MArch

Jeffrey N. Inaba, MArch, MA

Alan Locke, MSc

Roger Sherman, MArch

### Adjunct Associate Professors

Julia Koerner-Al-Rawi, MSc

Mohamed Sharif, MS

### Adjunct Assistant Professor

Natasha S. Sandmeier, MA

## Overview

The Department of Architecture and Urban Design at UCLA offers a Bachelor of Arts (BA) degree in Architectural Studies and four graduate degree programs tailored to the needs of different groups of students: Master of Architecture (MArch); Master of Arts (MA) and Doctor of Philosophy (PhD) in Architecture; and Master of Science (MS) in Architecture and Urban Design.

## Accreditation

In the U.S. most state registration boards require a degree from an accredited professional degree program as a requisite for licensure. The National Architectural Accrediting Board (NAAB), the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes two types of degrees: Bachelor of Architecture and Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established standards. Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

## Undergraduate Major

### Architectural Studies BA

The BA in Architectural Studies is a two-year program with focus on the built environment. The curriculum visualizes architecture as a cultural, creative, and technical practice and a discipline with direct social impact. Within the context of a liberal arts education, a finely balanced set of architecture and urban design courses, ranging from the history and theory of design to contemporary building technologies, provides students with a diverse foundation of knowledge in the field of architecture and prepares them for graduate school and/or careers in a wide range of fields.

## Learning Outcomes

The Architectural Studies major has the following learning outcomes:

- Demonstrated competence in representational techniques including physical and digital modeling, drawing, and analytical diagramming
- Use of representational techniques to document design concepts, organization, spatial order, and scale
- Ability to compile portfolio of original architectural and three-dimensional design proposals
- Familiarity with historical and contemporary precedents in the field
- Demonstrated written awareness of the historical, technological, and cultural significance of precedent works
- Familiarity with, and presentation and discussion of, concepts related to form, organization, and space making
- Delivery of oral and graphic presentations of design concepts and proposals
- Reception of and response to design criticism, and reflection of this response in revised design documentation, as an integral part of the design process

## Entry to the Major

### Admission

Students are admitted for fall quarter only. Admission is highly competitive, and only a limited number of students are admitted each year. UCLA students may apply for admission in fall quarter of their second year in residence, must have at least a 3.0 cumulative grade-point average, and are required to complete the preparation for the major courses, with grades of B or better, before applying for admission. Transfer students must have at least a 3.0 cumulative GPA and are expected to complete the preparation for the major courses during their first year in residence. All applicants must submit a statement of interest and a three- to six-page PDF of creative work. For more information, consult with the undergraduate adviser.

## Requirements

### Preparation for the Major

*Required:* Architecture and Urban Design 10A, 10B, 30.

### The Major

*Required:* Architecture and Urban Design 121, 122, 123, 131, 132, 133, 141, 142, 143.

## Graduate Majors

### Architecture MA, PhD

The MA and PhD degree programs offer opportunities to pursue research and scholarship in the field of architecture. Graduates typically pursue academic or applied research and consulting careers.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA](#)



**graduate degrees**, available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Architecture and Urban Design MS

The Architecture and Urban Design MS is an advanced self-supporting professional degree program for students who already hold a first professional degree in architecture. The program offers opportunities for intensive concentration in a variety of areas of professional specialization.

### Requirements

Official, specific degree requirements are detailed in **program requirements for UCLA graduate degrees**, available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Master of Architecture

MArch is a three-year first professional degree program accredited by the **NAAB**. It does not assume any prior background in architecture. Students who do have some prior architecture background (e.g., a four-year undergraduate degree) may also enter the program and may petition to waive certain required courses and substitute more advanced electives in their place. MArch graduates normally pursue professional careers in architectural practice.

### Requirements

Official, specific degree requirements are detailed in **program requirements for UCLA graduate degrees**, available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Architecture/Master of Urban and Regional Planning

## Architecture and Urban Design

### Lower-Division Courses

**1. Introduction to Design. (2 or 3)** Studio/lecture/field trips, 40 hours. Limited to high school students. Two- or three-week intensive summer course in architectural design, with focus on developing design skills through space making and its representation. Exposure to contemporary architectural practices through studio work, lectures and presentations, field trips, and final demonstration, critique, and exhibition of student work. Offered only as part of Teen Arch Studio summer program. P/NP grading.

**10A. Histories of Architecture and Urbanism I. (5)** Lecture, three hours; discussion, one hour; outside study, 11 hours. Exploration of developments in global architecture and urban design from prehistory to 1600 and critical reflection on terms such as building, architecture, city, history, and culture. Focus on world context, construction and technology, and history of architectural ideas. P/NP or letter grading.

**10B. Histories of Architecture and Urbanism II. (5)** Lecture, three hours; discussion, one hour; outside study, 11 hours. Survey of architectural and urban history from 1600 to present in global context. Exploration of buildings, cities, spaces, artifacts, landscapes, and ideas through their relation to geopolitical conditions and through their relation to theories of design. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**30. Introduction to Architectural Studies. (5)** Lecture, three hours; discussion, one hour; outside study, 11 hours. Exploration of role of built environment in social, cultural, and political life: how buildings are constructed, what they mean, effects they have on world, and ways they imagine new futures and shape private and public life. Focus on series of contemporary case studies for what each reveals about new possibilities for shaping world in which we live, with emphasis on how architecture extends to cities, roads, books, and films. Consideration of historical context and cultural genealogy of particular buildings and environments, material and economic conditions of building, and more. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**102. Introduction to Representation. (2)** Studio, four hours; outside study, two hours. Limited to currently enrolled college/university students and graduates of colleges/universities. Introduction to techniques of spatial representation as they relate to architectural design. How to communicate using two- and three-dimensional drawing and modeling. Analog and digital techniques and opportunity afforded by moving between both. Analog techniques include orthographic and axonometric projection. Digital techniques focus on computer graphics fundamentals, including bit map and vector graphic imaging using Adobe suite and modeling using Rhinoceros. Offered in summer only. Letter grading.

**103. Introduction to Architectural Design. (6)** Studio, 18 hours. Limited to currently enrolled college/university students and graduates of colleges/universities. Introduction to basic architectural design principles and problem solving. How to control point, line, surface, and volume to shape spaces for human use. Visual analysis as tool for discussing and understanding organization. Techniques of repetition, variation, order, scale, and rhythm. Use of case-study analysis to uncover disciplinary issues within design problems and production of individual solutions to problems. Offered in summer only. Letter grading.

**121. Studio I. (6)** Studio, eight hours; outside study, 10 hours. Limited to Architectural Studies majors. Introduction to basic architectural design principles and problem solving: how to control point, line, surface, and volume to shape spaces for human use. Visual

analysis as tool for discussing and understanding organization. Techniques of repetition, variation, order, scale, and rhythm. Use of case-study analysis to uncover disciplinary issues within design problems, as well as to produce individual solutions to those problems. Letter grading.

**122. Studio II. (6)** Studio, eight hours; outside study, 10 hours. Enforced requisite: course 121. Limited to Architectural Studies majors. Issues of inhabitation, domesticity, and program. Architectural precedents and principles of spatial organization. Relationship of architectural form to human body and role of architectural space in choreography of human activity. Understanding and application of knowledge of architectural tectonics, structure, and measurement. Letter grading.

**123. Studio III. (6)** Studio, eight hours; outside study, 10 hours. Enforced requisites: courses 121, 122. Limited to Architectural Studies majors. Introduction to disciplinary issues, techniques, and organizations of landscape and how those can influence design of building and site. Development of material and temporal characteristics of architecture relative to role those play in landscape. Introduction to issues of accessibility and egress as systems of movement. Structure as serial component that relates to site, construction, topography, climatology, accessibility, and their mutual interaction. Letter grading.

**M125B. Digital Cultural Mapping Core Course B: Google Earth, Geographic Information Systems, Hypercities, and Timelines. (4)** (Same as Ancient Near East M125B.) Laboratory, three hours; discussion, one hour. Enforced requisite: Ancient Near East 125A. Hands-on laboratory-based investigation of emerging digital mapping technologies, including instruction in Web-based mapping applications, virtual globes, and geographic information systems (GIS). Critique and creation of maps of cultural phenomena, applying skills students learned in Ancient Near East 125A to real-world data sets in humanities and social sciences. By mastering emerging technologies in field of digital cultural mapping, students take part in evaluation and production of sophisticated visual representations of complex data, becoming active participants in development of this new field. How to use suite of GIS and neogeography tools. Fostering of creative approaches to and engagement with mapping technologies: What new questions can be asked and answered using these technologies? How does one reason, argue, and solve real-world problems through digital cultural mapping? Design, development, and implementation of student mapping-based research projects. Part of Digital Cultural Mapping Project supported by W.M. Keck Foundation. P/NP or letter grading.

**M125C. Digital Cultural Mapping Core Course C: Summer Research. (4)** (Same as Ancient Near East M125C.) Laboratory, three hours; fieldwork, one hour. Enforced requisite: course M125B or Ancient Near East M125B. Participation in collaborative geographic information systems (GIS) research project in humanities or social sciences using skills learned in courses 125A and M125B. Gathering and input of datasets from real-world sources, creating visual representations of data through production of digital maps, and performing analysis of larger dataset to answer specific research questions. Final oral presentation required that details student work and provides critical analysis of source material and technological/methodological issues inherent to type of GIS used for investigation. Part of Digital Cultural Mapping Project supported by W.M. Keck Foundation. Offered in summer only. P/NP or letter grading.

**CM130. Space and Place. (4)** (Same as World Arts and Cultures CM130.) Lecture, three hours. Survey of array of spaces and places from cross-cultural or comparative perspective and with performance emphasis, with focus on mutual interaction of human beings and their created environments. Emphasis on common, ordinary, anonymous, or vernacular nonbuilt and built environments, which are built and used by members of small-scale, traditional, and transitional communities around world. Concurrently scheduled with course CM230. P/NP or letter grading.

**131. Issues in Contemporary Design. (5)** Lecture, three hours; outside study, 12 hours. Limited to Architectural Studies majors. How global design culture

today operates as part of set of spatial, economic, political, and social discourses. From development of cities to new formal languages in architecture, consequences of fact that great percentage of our lives is spent in controlled designed environments, including role that research and interdisciplinarity play today in influencing design ideas and processes, as well as how design is influenced by technology and new urban conditions. Letter grading.

**132. Histories of Housing and Domesticity: 19th Century to the Present. (5)** Lecture, three hours; outside study, 12 hours. Limited to Architectural Studies majors or with consent of instructor. Investigation of relationship between architecture, political economy, and the environment through the medium of housing, from 19th-century philanthropy to cooperative, municipal, and national enterprise. Focus on worldwide examples spanning two centuries, study connects politics, law, industry, and finance to better identify the role of architecture in the materialization of housing. Letter grading.

**133. Modernism and Metropolis. (5)** Lecture, three hours; outside study, 12 hours. Limited to Architectural Studies majors. Introduction to emergence of contemporary metropolis through series of comparative urban explorations that begin in Los Angeles and extend to engage range of cities, including key examples from Asia to South America. Modern project can be seen in myriad forms across globe, so that city and suburb, taken together, exist in complex commingling of aesthetic, political, spatial, economic, technological, and social issues. Letter grading.

**141. Technology I: Projections. (5)** Laboratory, four hours; outside study, 11 hours. Limited to Architectural Studies majors. Introduction to techniques of spatial representation as they relate to architectural design. How to communicate using two- and three-dimensional drawing and modeling. Analog and digital techniques and opportunity afforded by moving between both. Analog techniques include orthographic and axonometric projection. Digital techniques focus on computer graphics fundamentals, including bit map and vector graphic imaging using Adobe suite and modeling using Rhinoceros. Letter grading.

**142. Technology II: Building Materials and Methods. (5)** Laboratory, four hours; outside study, 11 hours. Limited to Architectural Studies majors. Introduction to construction systems and materials in relation to design, such as framed, bearing wall, or hybrid systems. Graphic conventions and organization of construction documents. Letter grading.

**143. Technology III: Digital Technology. (5)** Laboratory, four hours; outside study, 11 hours. Limited to Architectural Studies majors. Overview of three-dimensional computer-aided visualization concepts, teaching applications of AutoCAD and Maya and their use relative to process of design and visual communication. Basic representation methods and tools and introduction to additional concepts required to dynamically interact with computer and to explore and understand communicative capacities of different methods of representation. Explanation of bitmap versus vector graphics, typography basics, and color output and integration for print and Web, and introduction to three-dimensional digital modeling and fabrication. Letter grading.

**CM153. Introduction to Sustainable Architecture and Community Planning. (4)** (Same as Environment M153.) Lecture, three hours. Relationship of built environment to natural environment through whole systems approach, with focus on sustainable design of buildings and planning of communities. Emphasis on energy efficiency, renewable energy, and appropriate use of resources, including materials, water, and land. Concurrently scheduled with course CM247A. Letter grading.

**C188CS. Special Topics in Architecture and Urban Design—Critical Studies. (4)** Lecture, three hours. Limited to seniors in good academic standing. Special topics in critical studies in architectural culture. May be repeated for credit. Concurrently scheduled with course C289CS. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**C188T. Special Topics in Architecture and Urban Design—Technology. (4)** Lecture, three hours. Limited to seniors in good academic standing. Special topics in technologies used in architecture. May be repeated for credit. Concurrently scheduled with course C289T. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**191. Interventions: Urban humanities in Action (Capstone Studio). (4)** Seminar, four hours; studio, two hours. Requisites: Digital Humanities 30, 151. Using Los Angeles as laboratory, students address issues of spatial justice through scholarly and practical urban interventions. Projects deploy spatial technologies introduced in Digital Humanities 30 and theoretical knowledge learned in Digital Humanities 151 to create urban humanist action-projects. Letter grading.

**199. Directed Research or Senior Project in Architecture and Urban Design. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M201. Theories of Architecture. (4)** (Same as Urban Planning M201.) Lecture, three hours. Exploration of conceptual and historical structures that shape current issues in architectural theory. Readings in primary texts serve as framework for understanding nature of speculative inquiry in architectural context. Letter grading.

**220. Introduction to Computers. (2)** Lecture, 90 minutes; laboratory, 90 minutes; outside study, three hours. Introduction to basic concepts, skills, and theoretical aspects of computer-aided architecture design microcomputer skills. Applications selected are commonly found in professional offices. Two- and three-dimensional representation (i.e., painting, drafting, multimedia, hypermedia, and modeling). Letter grading.

**221. Architectural Mediation I. (2)** Lecture, two hours; laboratory, 90 minutes; outside study, three hours. Introduction to concepts, techniques, and theoretical discourses of digital modeling/drawing interfaces. Digital applications explored are broadly utilized in professional practices across all scales. Two- and three-dimensional output (i.e., drawing, models, multimedia, laser-cutting, computer numerical control milling). Letter grading.

**222. Architectural Mediation II. (2)** Lecture, two hours; laboratory, 90 minutes; outside study, three hours. Exploration of visual concepts and techniques in architectural image-making in context of its discursive

histories and contemporary trajectories. Two-dimensional output (i.e., collaged/montaged/drawn/rendered images). Letter grading.

**223. Architectural Mediation III. (2)** Lecture, two hours; laboratory, 90 minutes; outside study, three hours. Exploration of advanced digital interfaces such as parametric software, and coding towards exploration of interactive mapping, analysis, time/behavior-based simulations, and fabrications. Two- and three-dimensional output (i.e., animations, animation stills, multimedia, 3D printing, computer numerical control (CNC) milling). Letter grading.

**226C. Computer Visualization. (4)** Lecture, three hours. Designed for graduate students. Concept and techniques of computer visualization of artifacts, including realistic rendering and animation. Letter grading.

**227D. Design and Building Models. (4)** Lecture, three hours. Review of range of information and knowledge potentially used in design. Knowledge representation, abstractions, and constructs. Logical structure of design information. Development of knowledge used in areas of design, how it can be identified, analyzed, and structured. Letter grading.

**CM230. Space and Place. (4)** (Same as World Arts and Cultures CM230.) Lecture, three hours. Survey of array of spaces and places from cross-cultural or comparative perspective and with performance emphasis, with focus on mutual interaction of human beings and their created environments. Emphasis on common, ordinary, anonymous, or vernacular nonbuilt and built environments, which are built and used by members of small-scale, traditional, and transitional communities around world. Concurrently scheduled with course CM130. S/U or letter grading.

**CM247A. Introduction to Sustainable Architecture and Community Planning. (4)** (Same as Urban Planning M291.) Lecture, three hours. Relationship of built environment to natural environment through whole systems approach, with focus on sustainable design of buildings and planning of communities. Emphasis on energy efficiency, renewable energy, and appropriate use of resources, including materials, water, and land. Concurrently scheduled with course CM153. Letter grading.

**M271. Elements of Urban Design. (4)** (Same as Urban Planning M292.) Lecture, three hours. Introduction of basic knowledge of elements and methods of urban design. Multidisciplinary approach leading to understanding of political, socioeconomic, and technological framework of urban systems and its dynamic interrelations. S/U or letter grading.

**M272. Introduction to Market-Rate Real Estate Development and Finance. (4)** (Same as Urban Planning M272.) Lecture, two hours; workshop, two hours; outside study, eight hours. Requisite: Urban Planning 220A. Introduction to real estate development process specifically geared to students in planning, architecture, and urban design. Financial decision model, market studies, designs, loan packages, development plan, and feasibility studies. Lectures and projects integrate development process with proposed design solutions that are interactively modified to meet economic feasibility tests. S/U or letter grading.

**286. Roman Architecture and Urbanism. (4)** Lecture, three hours. Examination of architectural and urban developments during Roman period, from archaic age to late Empire. Built environments of ancient world investigated from various perspectives, with consideration to programming, symbolism, and viewing, as well as to technological, aesthetic, and political factors. S/U or letter grading.

**288. Renaissance Architecture and Urbanism. (4)** Lecture, three hours. Examination of architectural developments from 15th to 17th century. Primary focus on Italian peninsula, and extending to entire Mediterranean basin. Analysis of individual structures, cities, and landscape designs to reveal changing cultural and theoretical values, as well as specific aesthetic and iconographic content. S/U or letter grading.

**289. Special Topics in Architecture and Urban Design. (2 to 4)** Lecture, two hours; discussion, two hours. Selected academic topics initiated by students, student teams, or faculty and directed by faculty member. May be repeated for credit. S/U or letter grading.

**C289CS. Special Topics in Architecture and Urban Design—Critical Studies. (4)** Lecture, three hours. Special topics in critical studies in architectural culture. May be repeated for credit. Concurrently scheduled with course C188CS. Letter grading.

**C289T. Special Topics in Architecture and Urban Design—Technology. (4)** Lecture, three hours. Special topics in technologies used in architecture. May be repeated for credit. Concurrently scheduled with course C188T. Letter grading.

**290. Special Topics in Critical Studies in Architectural Culture. (5)** Lecture, three hours; discussion, one hour; outside study, 11 hours. Designed for graduate students. Exploration of how architecture operates in relation to wider cultural, historical, and theoretical issues. May be repeated for maximum of 30 units. Letter grading.

**291. Theory of Architectural Programming. (4)** Lecture, three hours. Exploration of concepts and methods of architectural programming and its interrelation to design process; planning of design process; various techniques for determination of program contents, basic conditions, resources, and constraints; identification of solution types for given situations. S/U or letter grading.

**M293. Politics, Ideology, and Design. (4)** (Same as Urban Planning M293.) Lecture, three hours. Exploration of cultural and political context of architecture and planning work. Examination of theory and practice from variety of perspectives applied to set of varied physical environments and to set of current spatialized concepts. Consideration of theoretical propositions that are shaping present urban and architectural debate and concrete case studies where politics and ideology shape design process. Letter grading.

**294A–294B. Environmental Psychology. (4–4)** Lecture, three hours. Introduction to models, concepts, and theories concerning impact of environment on human behavior, perception, and thought. Review of research results concerning space perception, cognitive mapping, preferences and attitudes toward environment, effects of crowding and stress, personal space and territoriality. S/U or letter grading.

**M295. Introduction to Urban Humanities. (4)** (Same as Urban Planning M295.) Seminar, six hours; studio, six hours. Core introduction to urban humanities. Analytical and descriptive methods of humanities paired with speculative and projective methods of architectural and urban design to better understand contemporary state of human environment. Focus on Los Angeles, with concepts seminar, methods laboratory, projects studio, and site visit components. Offered in summer only. S/U or letter grading.

**296. Proseminar: Critical Studies in Architectural Culture. (4)** Seminar, three hours. Orientation for PhD students to tradition of architectural theory, scholarship, and research and to current research directions and questions, through intensive reading and critical discussion. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**401. Advanced Topics Studio. (6)** Studio, 12 hours; outside study, six hours. Preparation: satisfactory completion of intermediate-level studios (courses 412, 413, 414) or MArch II student. Students may choose (through lottery) from several different projects focusing on special topics in architectural and urban design to be offered by faculty members. May be repeated for credit. Letter grading.

**402. Final Advanced Topics Studio. (6)** Studio, 12 hours; outside study, six hours. Preparation: satisfactory completion of intermediate- and advanced-level studios for MArch I students; satisfactory completion

of advanced-level studios and fourth-term standing for MArch II students. Students may choose (through lottery) from several different advanced studio projects focusing on special topics in architectural and urban design to be offered by faculty members. Exit document (analytic paper with graphic component that critically examines final student design work) required at completion of course. Letter grading.

**403A–403B–403C. Research Studios. (2–2–6)** For courses 403A, 403B: seminar, three hours; outside study, three hours; for course 403C: studio, 12 hours; outside study, six hours. Preparation: satisfactory completion of intermediate-level studios (courses 412, 413, 414, 415) or MArch II student. Course 403A is requisite to 403B, which is requisite to 403C. In-depth research phase (courses 403A, 403B) and advanced studio project (course 403C), with focus on number of different special topics in architecture and urban design. In Progress (403A, 403B) and letter (403C) grading.

**M404. Joint Planning/Architecture Studio. (4)** (Same as Urban Planning M404.) Lecture, one hour; discussion, one hour; studio, four hours. Opportunity to work on joint planning/architecture project for client. Outside speakers; field trips. Examples of past projects include Third Street Housing, Santa Monica; New American House for nontraditional households; Pico-Aliso Housing, Boyle Heights; working with resident leaders at Los Angeles City public housing developments. S/U or letter grading.

**411. Introductory Design Studio. (6)** Studio, 12 hours; outside study, six hours. Introduction to sketching, drawing, perspectives, CAD. Architectural composition is initially studied in terms of its separate elements. After each is studied by means of manipulative exercise that allows for experimentation of its intrinsic possibilities, students undertake series of closely controlled exercises dealing with combining elements and then design small buildings. Letter grading.

**412. Building Design Studio. (6)** Studio, 12 hours; outside study, six hours. Requisite: course 411. Concentration on basic skills, leading to projects exploring architectural program in relation to design process and, particularly, implications of program on architectural forms and concepts. In second phase, introduction of structural elements to fulfill program requirements and to support and further develop intended forms and concepts. Letter grading.

**413. Building Design with Landscape Studio. (6)** Studio, 12 hours; outside study, six hours. Requisite: course 412. Introduction to theoretical and technical issues such as site planning, urban design, landscape design, building typology. Building design and site planning in relation to water, landforms, and plants in natural light, heat, and ventilation. Letter grading.

**414. Major Building Design Studio. (6)** Studio, 12 hours; outside study, six hours. Requisite: course 413. Designed for second-year graduate students. Introduction to issues such as programming and program manipulation, site planning, urban design, and integration of technical systems and architectural expression. Emphasis either on treatment in breadth of large-scale projects or exploration in depth and detail of smaller-scale projects. Students learn to integrate structure and environmental control and to present their ideas in graphic or model form. Letter grading.

**415. Comprehensive Studio. (6)** Studio, 12 hours; outside study, six hours. Requisite: course 414. Culmination of core sequence (courses 411 through 414), with focus on development phase of project. Technical concerns such as lighting, material innovation, sustainability, construction documents, and building envelopes to be considered critical to generation of architectural form, integrated in design of single building project. Letter grading.

**431. Structures I. (4)** Lecture, three hours. Preparation: basic algebra, geometry, trigonometry. Introduction to structural behavior and structural statics. Operations with forces and factors, both algebraically and graphically. Equilibrium of force systems; polygon of forces and funicular polygon. Internal actions; axial force and bending moment. Reactions, stability, and statical determinacy. Determinate frames. Plane trusses; analysis and design. S/U or letter grading.

**432. Structures II. (4)** Lecture, three hours. Requisite: course 431. Mechanics of structures and structural elements. Elastic materials: stress, strain, and stress-strain relations. Theory of bending: curvature, stress and strain distributions, centroid, moments of inertia, resisting and plastic moments. Design of beams for bending, shear, and deflections. Torsion members. Instability and design of columns. Design for combined bending and compression. Tensile structures; cables, pneumatic structures. Slabs and plates; shells and folded plates. S/U or letter grading.

**433. Structures III. (4)** Lecture, three hours. Requisite: course 432. Introduction to statically indeterminate analysis. Structural materials and loads. Wind loads: distribution with height, design for comfort, structure behavior under lateral loads. Steel construction and concepts for high-rise structures. Structural case studies in timber and steel. Introduction to earthquakes: seismology, magnitude, intensity, history. Seismic instrumentation. Case studies of recent earthquakes and damage. Earthquake design concepts and seismic code requirements. S/U or letter grading.

**436. Introduction to Building Construction. (2)** Laboratory, two hours; outside study, four hours. Introduction to construction techniques. Study of physical principles and materials for making architecture through series of exercises and field trips. Letter grading.

**437. Building Construction. (4)** Laboratory, four hours; outside study, eight hours. Principles of structure and enclosure, with focus on production and materials research. Exploration of building elements for formal and functional properties; in addition, design development of project in previous studio may be developed in detail with integration of range of technical systems. Letter grading.

**441. Environmental Control Systems. (4)** Lecture, four hours. Design of mechanical systems necessary for functioning of large buildings: air handling, fire and life safety, plumbing, vertical and horizontal circulation, communication and electrical power distribution, analysis of interaction of these systems and their integrated effects on architectural form of building. S/U or letter grading.

**442. Building Climatology. (4)** Lecture, four hours. Preparation: basic physics. Design of buildings that specifically respond to local climate; utilization of natural energies, human thermal comfort; sun motion and sun control devices; use of plant materials and landform to modify microclimate. S/U or letter grading.

**461. Architectural Practice. (4)** Lecture, three hours. Historical development of profession; role of architect in contemporary society, current forms of practice and emerging trends. Contractual relationships, ethical responsibility, office management and promotion. Case studies of practical process. S/U or letter grading.

**495. Teaching Architectural History, Theory, and Criticism. (2)** Seminar, three hours. Offers guidance and support to first-time teaching assistants (TAs) in Department of Architecture and Urban Design. Covers topics which include teaching philosophies, teaching methodologies, assessment/evaluation/grading practices, and professional development specific to academic professions in the field of architecture. Readings and assignments to develop fundamental teaching principles and provide methods with which to design course syllabi and evaluate/gather resources for course content. S/U grading.

**496. Special Projects in Architecture. (2 to 8)** Tutorial, to be arranged. Projects initiated either by individual students or student teams and directed by faculty member. May be repeated for credit. S/U or letter grading.

**497. Special Projects in Urban Design. (2 to 8)** Tutorial, to be arranged. Projects initiated either by individual students or student teams and directed by faculty member. May be repeated for credit. S/U or letter grading.

**498. Comprehensive Examination Seminar. (4)** Seminar, three hours; outside study, nine hours. Seminar intended to begin process of developing independent proposal with related research and documentation that moves toward production of final document or book for each project. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Research and Study in Architecture and Urban Design. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**597. Preparation for Comprehensive Examination or PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**598. Preparation in Architecture/Urban Design for Master's Thesis. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**599. PhD Dissertation Research in Architecture. (2 to 8)** Tutorial, to be arranged. Limited to doctoral students. May be repeated for credit. S/U grading.

## ART

*School of the Arts and Architecture*

2275 Broad Art Center  
Box 951615  
Los Angeles, CA 90095-1615

### Art

310-825-3281

[Department e-mail](#)

Rodney T. McMillian, MFA, *Chair*

## Faculty Roster

### Professors

Andrea Fraser  
Rodney T. McMillian, MFA  
Rebecca J. Morris, MFA  
Catherine S. Opie, MFA (*Lynda and Stewart Resnick Endowed Professor of Art*)  
Hirsch Perlman, BA  
Cauleen Smith, MFA  
Patty A. Wickman, MFA

### Professors Emeriti

Jennifer Bolande, BFA  
Raymond B. Brown, MA  
Barbara Drucker, MFA  
Russell Ferguson, MA  
Roger R. Herman, MFA  
Mary Kelly, MA  
Barbara Kruger  
Paul D. McCarthy, MFA  
Lari G. Pittman, MFA  
Charles R. Ray, MFA  
Nancy J. Rubins, MFA  
Adrian A. Saxe, BFA  
James Welling, MFA

### Associate Professors

Candice C. Lin, MFA  
Anna M. Sew Hoy, MFA  
Rodrigo A. Valenzuela, MFA

### Assistant Professors

Vishal Jugdeo, MFA  
Cosmo D. Whyte, MFA

## Overview

The Department of Art offers professional art training with an emphasis on interdisciplinary experimentation, equity, and inclusion in art.

The core studio curriculum is supported by courses in art history, theory, and criticism, and empowers students to reshape their worlds through critical inquiry and transformative creativity. Student are exposed to a broad range of approaches to making and interpreting art, as well as diverse perspectives on the role of art and artists in society. Bachelor of Arts (BA) degree coursework and Master of Fine Arts (MFA) areas of study include ceramics, interdisciplinary studio, new genres, painting and drawing, photography, and sculpture. Students are encouraged to work intensively within and across these areas of study to find their own voices and craft their own practices. Art majors have access to departmental labs in each area of study as well as a digital studio. Additionally, the Hammer Museum and the Fowler Museum at UCLA are among the many arts resources available to students, both on campus and in the Los Angeles community.

The Art Department reserves the right to use documentation and reproductions of student art work from studio courses, student exhibitions, and other records of creative work in publications including, but not limited to, the undergraduate and graduate brochures and publications, department and school websites, social media, and presentations and events related to student recruitment and outreach.

## Undergraduate Major

### Art BA

#### Capstone Major

The Art major is a designated capstone major. As part of the upper-division advanced studio requirements, all undergraduate students are required to complete a senior studio course that emphasizes analysis and criticism of individual creative work and ideas. Students develop and present a body of creative work in which they exhibit familiarity with and competence in a range of techniques and media, and a level of proficiency in utilizing particular media appropriate to advanced-level studio projects. Graduates are expected to demonstrate familiarity with global historical precedents for and issues in contemporary art, to understand terms and concepts relevant to contemporary art discourse, and to have the ability to effectively articulate analysis of works of art to participate in a studio critique.

### Learning Outcomes

The Art major has the following learning outcomes:

- Familiarity with and competency in multiple techniques and media, and a level of proficiency utilizing particular media appropriate to advanced studio projects
- Development of a body of original artwork
- Familiarity with global historical precedents for, and issues in, contemporary art
- Understanding of terms and concepts relevant to contemporary art discourse
- Ability to effectively analyze works of art through studio critique

## Requirements

### Preparation for the Major

*Required:* Art 1A, 1B, 11A, 11B, 11D, 11E, 31A, 31B, 31C, and one course from Art History 20 through 31.

### The Major

*Required:* A minimum of nine upper-division courses, including Art 132, six courses from at least four of the following studio areas of which at least one must be designated with an A: 130 or 130A, 133 or 133A, 137 or 137A, 140, 145 or 145A, 147 or 147A, 148 or 148A, 149 or 149A, one course from Art History M110A through 185, one capstone senior studio course (Art 150), and 8 units of art electives.

### Policies

#### The Major

Each course applied toward major requirements must be taken for a letter grade, with the exception of Art 190, 193, and 195, which are offered only on a Passed/Not Passed grading basis. Of those, no more than 4 units total may be applied toward the upper-division art elective requirement.

## Graduate Major

### Art MFA

The MFA curriculum fosters the development of a sustained artistic practice through exploration, experimentation, and intensive studio work and study. Opened in Fall 2019, the UCLA Margo Leavin Graduate Art Studios provide individual and communal work spaces for MFA art students with a flexible design that considers the nature of contemporary artistic practice. The six areas of study—ceramics, interdisciplinary studio, new genres, painting and drawing, photography, and sculpture—are supplemented by contemporary critical theory seminars. Students are encouraged to work across areas of study within the department.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

Additional guidelines are outlined on the [Art Department website](#).

## Art

### Lower-Division Courses

**1A. Drawing. (4)** Studio, eight hours; five hours arranged. Course in basic drawing skills intended as preparation for work in variety of media. P/NP or letter grading.

**1B. Sculpture. (4)** Studio, eight hours; five hours arranged. Introduction to concepts and forms of contemporary sculpture to become familiar with tools and



material to enable students to visually manifest their individual ideas. Presentation of work of contemporary artists. P/NP or letter grading.

**11A. Painting. (4)** Studio, eight hours; five hours arranged. Basics of painting: introduction to technical procedures, tools, and materials. Discussion of fundamental conceptual and formal concerns. P/NP or letter grading.

**11B. Photography. (4)** Studio, eight hours; five hours arranged. Fundamentals in technique, with emphasis on individual projects. Varied approaches, processes, and applications of photographic medium within context of art, supported by studies in theory, aesthetics, and history of photography. P/NP or letter grading.

**11C. Printmaking. (4)** Studio, eight hours; five hours arranged. Introductory survey of various technical and conceptual concerns in variety of printmaking media as preparation for more focused study in particular media at upper-division level. P/NP or letter grading.

**11D. New Genres. (4)** Studio, eight hours; five hours arranged. Introduction to projects in installation, performance, video, film, intermedia, and other nontraditional media and processes. P/NP or letter grading.

**11E. Ceramics. (4)** Studio, eight hours; five hours arranged. Introduction to ceramic materials and processes, with emphasis on personal and cultural expression in ceramic media. Discussion of ceramics in contemporary artistic practice and social history of ceramic art. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Production. (2)** Studio, four hours. Limited to Art majors. Instruction in production techniques and processes, including basics of recording still images, moving images, and sound. Discussion of professional setups and standard practices as well as alternatives. Editing of still images, moving images, and sound. Review of use of tools, software, workflow, storage, and output modalities. Letter grading.

**21A. Production: Photographic Print. (2)** Studio, four hours. Requisite: course 11B. Limited to Art majors. Not open for credit to students with credit for course 20. Techniques and processes, including basics of shooting, editing, and output for still images and photographs. Professional setups and standard practices as well as alternatives. Review of use of tools, software, workflow, storage, and output modalities. Instruction in postproduction skills and tools for editing and altering images and producing high-quality printed images. Letter grading.

**21B. Production: Moving Image and Sound. (2)** Studio, four hours. Limited to Art majors. Not open for credit to students with credit for course 20. Moving image and sound production and post-production techniques, tools, and processes, including instruction in basics of shooting, editing, output, and display. Familiarization with production skills, equipment, setups, and standard practices used in creation of moving image and/or sound works. Instruction in use of cameras, lights, and microphones, and shooting and recording setups and techniques, including handheld, fig-rig, dolly-shots, and green screens. Introduction to and development of familiarity with post-production software and processes of editing, animating, exporting, and presenting high-quality sound and moving image works. Letter grading.

**31A. Rise of Modernism in Global Context. (5)** Lecture, three hours; discussion, one hour; field trips, three hours. Examination of global forces underlying development of modernist thought on art and society from mid-19th through early-20th centuries. Exploration of origins, development, theory, and practice of modernism in context of colonialism and industrialization. Letter grading.

**31B. Global Modernism. (5)** Lecture, three hours; discussion, one hour; field trips, three hours. Art majors should complete courses 31A, 31B, and 31C in sequence in first year. Continuation of impact of modernist ideas through mid-20th century, with focus primarily on work made from 1920s to 1960s globally. Examination of how modernist ideas and practices

were influenced by industrialization, urbanization, colonialism, world wars, and emancipatory movements. Letter grading.

**31C. Modernism and Its Discontents. (5)** Lecture, three hours; discussion, one hour; field trips, three hours. Art majors should complete courses 31A, 31B, and 31C in sequence in first year. Continued impact of modernist ideas from 1960s to present, covering shift from modernist to postmodernist practices and theories. Examination of critiques of modernism drawing from emancipatory movements and poststructuralist, feminist, queer, performance, postcolonial, and critical race theory. Letter grading.

**70. Summer Art Institute: Special Topics in Studio. (3)** Studio/lecture/field trips, 45 hours. Limited to high school students in Summer Art Institute. Two-week intensive in studio art covering range of media and contemporary art practices and combination of focused studio work, lecture/presentations, field trips, critiques, and final exhibition of student work. Offered only as part of Summer Institute. May be repeated once for credit. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Issues in Contemporary Art. (5)** Lecture, three hours; discussion, one hour; screenings/research, 11 hours. Requisites: courses 31A, 31B, 31C. Selected topics in theoretical, critical, aesthetic, and historical studies and their relevance to practicing artists. May be repeated for maximum of 20 units. Letter grading.

**130. Advanced Drawing. (5)** Studio, eight hours; seven hours arranged. Requisite: course 1A. Drawing as both independent expressive medium and as means of visualization. May be repeated for maximum of 20 units. Letter grading.

**130A. Advanced Drawing: Topics in Anti-Racism, Equity, Diversity, and Inclusion. (5)** Studio, eight hours; seven hours arranged. Requisite: course 1A. Varied approaches to drawing media and content to develop students' technical, expressive, and conceptual tools to understand and explore anti-racism, equity, diversity, and inclusion. Combination of courses 130 and 130A may be repeated for maximum of 20 units. Letter grading.

**132. Survey of Critical Thought. (5)** Lecture, three hours; discussion, one hour; screenings/research, 11 hours. Requisites: courses 31A, 31B, 31C. Overview of premodern, modern, and postmodern theory as reflected in critical writing and artistic frameworks from late 19th century to present. Introduction to elements of Marxism, critical theory, feminist and queer theory, indigenous critique, disability studies, black radical tradition, decolonial and postcolonial writings. Specific topics may vary. May be repeated for maximum of 20 units. Letter grading.

**133. Advanced Painting. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11A. Varied media and subjects to further develop students' technical and expressive means to implement their ideas. May be repeated for maximum of 20 units. Letter grading.

**133A. Advanced Painting: Topics in Anti-Racism, Equity, Diversity, and Inclusion. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11A. Varied approaches to painting media and content to develop students' technical, expressive, and conceptual tools to understand and explore anti-racism, eq-

uity, diversity, and inclusion. Combination of courses 133 and 133A may be repeated for maximum of 20 units. Letter grading.

**137. Advanced New Genres. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11D. Emphasis to be selected by faculty members from one or more of following media: installation, performance, video, film, other nontraditional media and processes. May be repeated for maximum of 20 units. Letter grading.

**137A. Advanced New Genre: Topics in Anti-Racism, Equity, Diversity, and Inclusion. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11D. Varied approaches to new genres media and content to develop students' technical, expressive, and conceptual tools to understand and explore anti-racism, equity, diversity, and inclusion. Combination of courses 137 and 137A may be repeated for maximum of 20 units. Letter grading.

**140. Advanced Printmaking. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11C. Selected studies in fine printmaking, historical and contemporary: woodcut, etching and engraving, lithography, silk screen, mixed media. May be repeated for maximum of 20 units. Letter grading.

**145. Advanced Sculpture. (5)** Studio, eight hours; seven hours arranged. Requisite: course 1B. Selected studies in sculpture, historical and contemporary: modeling, carving, casting, welding, and other media; forms in space, including installations and nonstudio pieces. May be repeated for maximum of 20 units. Letter grading.

**145A. Advanced Sculpture: Topics in Anti-Racism, Equity, Diversity, and Inclusion. (5)** Studio, eight hours; seven hours arranged. Requisite: course 1B. Varied approaches to historical and contemporary sculpture that highlights its social impact and cultural content. Themed lectures and studio assignments develop students' technical, expressive, and conceptual tools to understand and explore anti-racism, equity, diversity, and inclusion as expressed in objects, sculpture, and built environment. Combination of courses 145 and 145A may be repeated for maximum of 20 units. Letter grading.

**147. Advanced Photography. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11B. Selected projects in photography and related media, concentrating on development of individual students' artwork. Studio emphasis with special topics in theory and critical analysis. May be repeated for maximum of 20 units. Letter grading.

**147A. Advanced Photography: Topics in Anti-Racism, Equity, Diversity, and Inclusion. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11B. Varied approaches to photography's history, media, and content to develop students' technical, expressive, and conceptual tools to understand and explore anti-racism, equity, diversity, and inclusion. Combination of courses 147 and 147A may be repeated for maximum of 20 units. Letter grading.

**148. Advanced Ceramics. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11E. Selected studies in ceramics, with emphasis on individualized creative experimentation with materials and techniques introduced in course. Methods and processes to be selected from range of possibilities, including handforming and modeling, preparation and use of molds, slipcasting, and use of potter's wheel. May be repeated for maximum of 20 units. Letter grading.

**148A. Advanced Ceramics: Topics in Anti-Racism, Equity, Diversity, and Inclusion. (5)** Studio, eight hours; seven hours arranged. Requisite: course 11E. Varied approaches to clay media and content to develop students' technical, expressive, and conceptual tools to understand and explore anti-racism, equity, diversity, and inclusion. Combination of courses 148 and 148A may be repeated for maximum of 20 units. Letter grading.

**149. Advanced Interdisciplinary Studio. (5)** Studio, eight hours; seven hours arranged. Requisites: courses 31A, 31B, 31C. Varied project-based studies in conceptually-driven approaches to art making in which students' core concerns and aims determine all



aspects of projects, including medium, method, and presentational context. Combination of courses 149 and 149A may be repeated for maximum of 20 units. Letter grading.

**149A. Advanced Interdisciplinary Studio: Topics in Anti-Racism, Equity, Diversity, and Inclusion. (5)** Studio, eight hours; seven hours arranged. Prerequisites: courses 31A, 31B, 31C. Varied project-based studies in conceptually-driven approaches to art making that advance anti-racism, equity, diversity, and inclusion. Students' core concerns and aims determine all aspects of projects, including medium, method, and presentational context. Combination of courses 149 and 149A may be repeated for maximum of 20 units. Letter grading.

**150. Senior Studio. (5)** Studio, eight hours; seven hours arranged. Limited to seniors. Advanced studio projects, with emphasis on analysis and criticism of individual creative work and ideas. Letter grading.

**170. Special Topics in Studio. (2 to 4)** Studio/museum visits, four to eight hours; two to four hours arranged. Current themes in art theory, practice, and criticism, offering students opportunity to explore these issues in studio context through critique of work and discussion of recommended readings. May be repeated for maximum of 16 units. P/NP or letter grading.

**C180. Seminar: Art. (4)** Seminar, three hours. Limited to junior/senior Art majors. Advanced topics in critical theory and study of contemporary art, with emphasis on individuals, issues, and methodologies. Possible areas of study from structuralism, deconstruction, feminist and psychoanalytic theory, commodification, and censorship. May be repeated for credit. Concurrently scheduled with course C280. Letter grading.

**C181. Exhibition and System. (4)** Seminar, four hours. Preparation: at least one course from 100 through 150. Examination of temporary exhibition and its associated field of publications as intertextual system of meaning, beginning with individual works and proceeding to on-site analysis of current exhibitions. Concurrently scheduled with course C281. Letter grading.

**C182. Exhibitions and Public Programs. (4)** Seminar, four hours. Preparation: at least one course from 100 through 150. Introduction to principles of program planning and community development in relation to visual arts and work of art museums. Concurrently scheduled with course C282. Letter grading.

**C183. Special Topics in Art. (2 or 4)** Seminar, six hours (2-unit course) or 12 hours (4-unit course). Preparation: at least one course from 100 through 150. Selected topics in art explored through variety of approaches that may include projects, readings, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for credit. Concurrently scheduled with course C283. Letter grading.

**M184. Chicana Art and Artists. (4)** (Same as Chicana/o and Central American Studies M175 and World Arts and Cultures M128.) Lecture, four hours. Introduction to Chicana art and artists. Examination of Chicana aesthetic. Chicana artists have developed unique experience and identity as artists and Chicanas. Letter grading.

**M185. Whose Monument Where: Course on Public Art. (4)** (Same as Chicana/o and Central American Studies M185 and World Arts and Cultures M126.) Lecture, four hours. Recommended corequisite: course M186A, M186B, or M186C. Examination of public monuments in U.S. as basis for cultural insight and critique of American values from perspective of artist. Use of urban Los Angeles as textbook in urban space issues such as who is public, what is public space at end of 20th century, what defines neighborhoods, and do different ethnic populations use public space differently. P/NP or letter grading.

**M186A. Beyond Mexican Mural: Beginning Muralism and Community Development. (4)** (Same as Chicana/o and Central American Studies M186A and World Arts and Cultures M125A.) Studio/lecture, four hours. Corequisite: course M186AL. Investigation of muralism as method of community education, development, and empowerment. Exploration of issues

through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. P/NP or letter grading.

**M186AL-M186BL-M186CL. Beyond Mexican Mural: Muralism and Community Laboratory. (4-4-2)** (Same as Chicana/o and Central American Studies M186AL-M186BL-M186CL and World Arts and Cultures M125AL-M125BL-M125CL.) Course M186AL is requisite to M186BL, which is requisite to M186CL. Mural and Digital Laboratory is art studio housed at Social and Public Art Resource Center in Venice, CA, where students work in community-based setting. Open to students during scheduled hours with laboratory tech support, it offers instruction as students independently and in collaborative teams research, design, and produce large-scale painted and digitally generated murals to be placed in community setting. P/NP or letter grading. **M186AL.** Beginning. Laboratory, four hours. Corequisite: course M186A; **M186BL.** Intermediate. Laboratory, four hours. Prerequisites: courses M186A, M186AL. Corequisite: course M186B; **M186CL.** Advanced. Laboratory, two hours. Corequisite: course M186C.

**M186B. Beyond Mexican Mural: Intermediate Muralism and Community Development. (4)** (Same as Chicana/o and Central American Studies M186B and World Arts and Cultures M125B.) Studio/lecture, four hours. Prerequisites: courses M186A, M186AL. Corequisite: course M186BL. Continuation of investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. Continuation of project through states of production to full scale and community approval. P/NP or letter grading.

**M186C. Beyond Mexican Mural: Advanced Muralism and Community Development. (4)** (Same as Chicana/o and Central American Studies M186C and World Arts and Cultures M125C.) Studio/lecture, six hours. Prerequisites: courses M186B, M186BL. Corequisite: course M186CL. Continuation of investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. Continuation of project through installation, documentation, and dedication, with work on more advanced independent projects. P/NP or letter grading.

**C187. Contemporary Art Collections in Los Angeles. (2)** Seminar, three hours; outside study, three hours. Limited to junior/senior Art majors. Exploration of critical issues regarding concept of collections and collecting. Visits to institutions and collections and discussion of vision, goals, and scope of collections, as well as individual works. Concurrently scheduled with course C287. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**190. Studio/Research Colloquia in Art. (1)** Seminar, three hours. Corequisite: course 197 or 198. Limited to juniors/seniors. Designed to bring together students undertaking supervised tutorial studio projects or research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for maximum of 4 units. P/NP grading.

**193. Journal Club Seminars: Current Topics in Art. (1)** Seminar, three hours. Limited to junior/senior Art majors. Discussion of selected current exhibitions, visiting artist lectures, screenings, and readings in field. May be repeated for credit. P/NP grading.

**195. Community Internships in Art. (2 to 4)** Tutorial, six to 12 hours. Limited to juniors/seniors. Art-related internship in supervised setting in community agency, business, or institution. Students meet on regular basis with instructor and provide periodic reports of their experience. Only 4 units may be applied toward upper-division art elective major requirement. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP grading.

**197. Individual Studies in Art. (2 to 4)** Tutorial, to be arranged. Preparation: 3.0 grade-point average in major. Corequisite: course 190. Limited to junior/senior Art majors. Individual intensive studio project or study, with scheduled meetings to be arranged between faculty member and student. Tangible evidence of project or mastery of subject matter required. May be repeated for maximum of 8 units. Individual contract required. Letter grading.

**198. Honors Research in Art. (2 to 4)** Tutorial, to be arranged. Preparation: 3.0 grade-point average overall, 3.5 grade-point average in major. Corequisite: course 190. Limited to junior/senior Art majors. Development and completion of comprehensive research or studio project under direct supervision of faculty member. May be repeated for maximum of 8 units. Individual contract required. Letter grading.

## Graduate Courses

**271. Graduate Painting. (2 to 8)** Studio, eight hours. Study in painting and associated media. May be repeated for credit with consent of adviser. Letter grading.

**272. Graduate Printmaking. (2 to 8)** Studio, eight hours. Studies in traditional and experimental printmaking. Selected studies in intaglio, lithograph, woodcut, silk screen, photo printmaking, and mixed media. May be repeated for credit with consent of adviser. Letter grading.

**273. Graduate Sculpture. (2 to 8)** Studio, eight hours. Studies in sculpture with specific attention to ongoing nature, specificity, and approach to each student's particular discipline. Individual studio visits and consultation. May be repeated for credit with consent of adviser. Letter grading.

**274. Graduate Photography. (2 to 8)** Studio, eight hours. Studies concentrating on development of individual students' artwork. Studio emphasis with adjacent studies in theoretical and critical analysis. Specific attention to original, expressive, social, and humanistic values of art. May be repeated for credit with consent of adviser. Letter grading.

**275. Graduate New Genres. (2 to 8)** Studio, eight hours. Studies in alternative media, including installation, performance, video, film, and other nontraditional media and processes. May be repeated for credit with consent of adviser. Letter grading.

**276. Graduate Group Critique. (4)** Discussion, four hours; tutorial, to be arranged. Group critique/discussion of students' research. Additional tutorial meetings by arrangement with instructor. May be repeated for credit. Letter grading.

**277. Graduate Ceramics. (2 to 8)** Studio, eight hours. Studies in ceramics and art with investigation of traditional and experimental processes and intellectual approaches to art practice utilizing ceramic media. Emphasis on development of significant body of original work reflecting student's expressive and theoretical concerns. May be repeated for credit. Letter grading.

**278. Interdisciplinary Studio. (2 to 8)** Studio, eight hours. Tutorial focused on directed research, studio visits, and group discussions of recommended readings. May be repeated for credit. S/U or letter grading.

**279. Open Area Studio. (2 to 8)** Studio, 12 hours. Limited to Art MFA students. Non-medium-specific course in which students work to establish, expand, and deepen their studio practices, including technical and research methods, to develop significant body of original artwork that reflects their concerns and furthers their artistic goals. May be repeated for credit. Letter grading.

**C280. Seminar: Art. (4)** Seminar, three hours. Advanced topics in critical theory and study of contemporary art, with emphasis on individuals, issues, and methodologies. Possible areas of study from structuralism, deconstruction, feminist and psychoanalytic theory, commodification, and censorship. May be repeated for credit. Concurrently scheduled with course C180. Letter grading.

**C281. Exhibition and System. (4)** Seminar, four hours. Examination of temporary exhibition and its associated field of publications as intertextual system of meaning, beginning with individual works and proceeding to on-site analysis of current exhibitions. May be repeated for credit. Concurrently scheduled with course C181. Letter grading.

**C282. Exhibitions and Public Programs. (4)** Seminar, four hours. Introduction to principles of program planning and community development in relation to visual arts and work of art museums. May be repeated for credit. Concurrently scheduled with course C182. Letter grading.

**C283. Special Topics in Art. (2 or 4)** Seminar, six hours (2-unit course) or 12 hours (4-unit course). Selected topics in art explored through variety of approaches that may include projects, readings, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for credit. Concurrently scheduled with course C183. Letter grading.

**284. Special Topics Technical Studio. (2 to 4)** Studio, three hours; outside study, three to nine hours. Limited to Art MFA students. Selected topics in techniques related to advanced studio projects. May be repeated for credit. Letter grading.

**C287. Contemporary Art Collections in Los Angeles. (2)** Seminar, three hours; outside study, three hours. Exploration of critical issues regarding concept of collections and collecting. Visits to institutions and collections and discussion of vision, goals, and scope of collections, as well as individual works. Concurrently scheduled with course C187. Letter grading.

**375. Teaching Apprentice Practicum (1 to 4).** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400A-400B. Visiting Artists Studio. (2-2)** Studio, six hours. Designed for MFA students. Introduction to visiting artists in their area of study, with focus on one-on-one critiques with wide range of practitioners. In Progress (400A) and S/U (400B) grading.

**400C. Visiting Artists Studio. (4)** Studio, 12 hours. Limited to graduate art students. Introduction to visiting artists in their area of study, with focus on one-on-one critiques with wide range of practitioners. S/U grading.

**401. MFA Working Groups. (2)** Research group meeting, two hours. Limited to MFA students. Three or more MFA candidates propose research and/or studio topic and invite Art Department faculty member to mentor group/topic. May be repeated for credit. S/U grading.

**495. Teaching Assistant Training Practicum. (2)** Seminar, three hours; outside study, three hours. Forum for first-year teaching assistants for discussion and exploration of teaching pedagogy and classroom mechanics. Problems and practices of teaching art at college level, as well as role of teaching assistants within department. Designed to help new teaching assistants develop teaching skills and to orient them to department and University policies and resources. May not be applied toward degree requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. May be repeated for credit with consent of adviser. S/U or letter grading.

**597. Preparation for Master's Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. May not be applied toward MA or MFA course requirements. May be repeated. S/U grading.

## ART HISTORY

*College of Letters and Science*

100 Dodd Hall  
Box 951417  
Los Angeles, CA 90095-1417

**Art History**  
310-206-6905

Saloni Mathur, PhD, *Chair*

## Faculty Roster

### Professors

George T. Baker, PhD  
Charlene Villaseñor Black, PhD  
Sharon E. Gerstel, PhD (*George P. Kolovos Family Centennial Term Professor of Hellenic Studies*)  
Hui-Shu Lee, PhD  
Saloni Mathur, PhD  
Lothar von Falkenhausen, PhD  
Glenn Wharton, PhD (*Lore and Gerald Cunard Professor of UCLA/Getty Conservation*)  
Bronwen Wilson, PhD (*Edward W. Carter Professor of European Art*)

### Professors Emeriti

Robert L. Brown, PhD  
Susan B. Downey, PhD  
Burglind Jungmann, PhD  
Cecelia F. Klein, PhD  
David M. Kunzle, PhD  
Miwon Kwon, PhD (*Walter Hopps Professor Emerita of Modern and Contemporary Art*)  
Steven D. Nelson, PhD  
David A. Scott, PhD  
Debora L. Silverman, PhD (*Presidential Professor Emerita of Modern European History, Art, and Culture*)  
Dell Upton, PhD  
Anthony Vidler, DiplArch

### Associate Professors

Lamia Balafrej, PhD  
Meredith M. Cohen, PhD  
Stella E. Nair, PhD

### Assistant Professors

Tiffany E. Barber, PhD  
Zirwat Chowdhury, PhD  
Kristopher W. Kersey, PhD  
Thiago Sevilhano Puglieri, PhD

### Adjunct Professor

John M.D. Pohl, PhD

### Adjunct Assistant Professor

Gregory T. Harwell, PhD

## Overview

The Department of Art History endorses an interdisciplinary and intercultural approach to art history of all periods and places. By thinking across current categories and boundaries and even critically interrogating art history itself, students are encouraged to question the canon, rethink the relationship between margins and centers, and practice a socially and politically responsible art history.

The rich and varied art resources available at UCLA and throughout Southern California offer students extraordinary opportunities to supplement the formal curriculum.

## Undergraduate Major

### Art History BA

#### Capstone Program

The Art History major is a designated capstone program. Students have options for completing a senior honors thesis, a directed independent study, an advanced undergraduate seminar, a museum studies internship, a research assistantship, or a faculty-approved upper-division course that includes additional coursework culminating in the completion of a capstone paper. Through their capstone work, students are expected to conceive and execute a research or creative project; identify and evaluate documentation relevant to the discipline; develop an enhanced capacity for writing and research, critical and analytical thinking, and competent familiarity with art historical methodologies; and identify and articulate these arguments within art historical discourse and areas of specialization. The capstone experience also enables students to develop an enriched understanding of the foundations of the discipline, as well as the current landscape of the field.

#### Learning Outcomes

The Art History major has the following learning outcomes:

- Accurate identification of major works of art within periods, cultures, or genres comprising various art history subfields
- Analysis of individual works of art using appropriate art history terminology; and placement of them in their aesthetic, historical, and cultural contexts

- Identification and characterization of significant artistic traditions from chronologically and culturally disparate societies
- Conduct original research, employing appropriate art history theories and methods, and critical use of primary and secondary sources
- Formulation of effective and convincing written and oral arguments, and placement of them within the larger interpretive traditions of the field

## Entry to the Major

### Transfer Students

Transfer applicants to the Art History major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two art history courses in ancient, Renaissance and baroque, medieval, or modern art and two courses in African, Asian, or pre-Columbian art.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

**Required:** Two courses from Art History 20 through 25 and two courses from 27 through 31. It is strongly recommended that the courses be taken prior to enrollment in upper-division courses. Some of these courses serve as prerequisites to certain upper-division courses.

### The Major

**Required:** Eleven upper-division art history courses as follows:

1. One course from each of the following three historical periods; (a) *ancient/medieval before 1400*—Art History M110A, M110B, M110C, M111, M112A through M112D, M113A, M113B, M114A through C114D, CM115A through C115F, C116A, C116B, C117A, C117B, M118A, 119A, 119B, CM139A, C148A, C148B, 154A, (b) *early modern, 1400 to 1700*—courses 121A through 121D, 124, C125A, 125B, C126, C139B, C139C, CM141, C148C, C148E, C152B, C152C, 154B, and (c) *modern/contemporary, 1700 to present*—courses M118B, 127A, 127B, M127C, C128A, C128B, C128C, C129A, C129B, C129C, 130, C131A, C131B, C131C, 132, C133A through 133E, CM135A, CM135B, C136A, C142A, C142B, C145B, C148D, 154D, C160, C170A
2. Three courses from at least three of the following five geographic regions: (a) *Africa*—Art History C145A, C145B, C146A, (b) *Asia*—courses C148A through C148E, C149, 150A, C150B, C151, 152A through C152D, C153, 154A through 154D, C155, 156, C158A, (c) *Europe and U.S.*—courses C115B through C115F, 121A through 121D, 124, C125A, 125B, C126, 127A, 127B, M127C, C129A, C129B, C129C, C131A, C131B, C131C, C133A through 133E, CM135A, CM135B, 137, C170A, (d) *Latin America and Caribbean*—courses CM139A, C139B, C139C, C140, CM141, C142A, C142B, 143, 144, and (e) *Mediterranean, Middle East, and Near East*—courses M110A, M110B, M110C, M111, M112A through M112D, M113A, M113B, M114A, M114B, M114C, CM115A, 119A, 119B

119A, 119B

3. Additional art history electives selected from courses 100 through 185 (20 units minimum); courses 196, 197A, and 197B may also be included. With prior approval of the undergraduate adviser, one of these courses may be taken in another department

While the department does not require language training beyond the College requirement, Art History majors, particularly those planning graduate work, are strongly encouraged to study foreign languages beyond what is required by the College.

## Honors Program

The honors program is designed for Art History majors who are interested in carrying out an independent research project that culminates in a departmental honors thesis of approximately 30 pages. The program gives qualified students the opportunity to work closely with individual professors on an in-depth supervised research and writing project.

Students must complete Art History 198A and 198B.

## Policies

### The Major

Each course must be taken for a letter grade.

### Honors Program

All senior Art History majors who have completed a minimum of six upper-division art history courses with a departmental grade-point average of 3.5 or better and an overall GPA of 3.0 or better are eligible to apply. Consult the art history student affairs officer no later than the beginning of fall quarter of the senior year.

To qualify for graduation with honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses in the department and an overall GPA of 3.0 or better, and (3) complete Art History 198A and 198B with grades of A– or better.

To qualify for graduation with highest honors, students must (1) complete all requirements for the major, (2) have a cumulative GPA of 3.85 or better in upper-division courses in the department and an overall GPA of 3.65 or better, and (3) complete courses 198A and 198B with grades of A.

## Undergraduate Minor

### Art History Minor

The Art History minor is designed for students who wish to augment their major with a series of courses that analyze the history, theory, and criticism of diverse visual traditions in world culture. On the lower-division level, the minor exposes students to overviews of these traditions in broad time periods from ancient to modern, from the regional to the global, as well as to courses that trace the historical significance of art in the context of specific thematic and media concerns. upper-division courses

offer more specialized content that explores crucial episodes or areas with more intense and rigorous theoretical and methodological strategies.

## Admission

To enter the minor students must be in good academic standing with an overall grade-point average of 2.0 or better, have completed 45 units, and file a petition with the student affairs officer in 206B Dodd Hall, 310-825-3992. Students are advised to declare the minor early and meet with the student affairs officer to plan a coherent program.

## The Minor

**Required Lower-Division Courses (15 units):** Three courses selected from Art History 20, 21, 22, 23, 24, 25, 27, 28, 29, 30, 31.

**Required Upper-Division Courses (20 units):** Five art history courses as follows:

1. Two courses from at least two of the following three historical periods; (a) *ancient/medieval before 1400*—Art History M110A, M110B, M110C, M111, M112A through M112D, M113A, M113B, M114A through C114D, CM115A through C115F, C116A, C116B, C117A, C117B, M118A, 119A, 119B, CM139A, C148A, C148B, 154A, (b) *early modern, 1400 to 1700*—courses 121A through 121D, 124, C125A, 125B, C126, C139B, C139C, CM141, C148C, C148E, C152B, C152C, 154B, and (c) *modern/contemporary, 1700 to present*—courses M118B, 127A, 127B, M127C, C128A, C128B, C128C, C129A, C129B, C129C, 130, C131A, C131B, C131C, 132, C133A through 133E, CM135A, CM135B, C136A, C142A, C142B, C145B, C148D, 154D, C160, C170A
2. Two courses from at least two of the following five geographic regions: (a) *Africa*—Art History C145A, C145B, C146A, (b) *Asia*—courses C148A through C148E, C149, 150A, C150B, C151, 152A through C152D, C153, 154A through 154D, C155, 156, C158A, (c) *Europe and U.S.*—courses C115B through C115F, 121A through 121D, 124, C125A, 125B, C126, 127A, 127B, M127C, C129A, C129B, C129C, C131A, C131B, C131C, C133A through 133E, CM135A, CM135B, 137, C170A, (d) *Latin America and Caribbean*—courses CM139A, C139B, C139C, C140, CM141, C142A, C142B, 143, 144, and (e) *Mediterranean, Middle East, and Near East*—courses M110A, M110B, M110C, M111, M112A through M112D, M113A, M113B, M114A, M114B, M114C, CM115A, 119A, 119B
3. One additional art history elective selected from courses 100 through 185; course 197A may also be included

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

By petition, one upper-division course with substantial art historical content and methodology applied toward the students' majors may also be applied toward this minor.



Each minor course must be taken for a letter grade (unless the course is graded only on a P/NP basis), and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Art History MA, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Art History

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Ancient Art. (5)** Lecture, three hours; quiz, one hour; museum field trips. Prehistoric, Egyptian, Mesopotamian, Aegean, Greek, Hellenistic, and Roman art and architecture. P/NP or letter grading.

**21. Medieval Art. (5)** Lecture, three hours; quiz, one hour. Early Christian, Byzantine, Islamic, Carolingian, Ottonian, Romanesque, and Gothic art and architecture. P/NP or letter grading.

**22. Renaissance and Baroque Art. (5)** Lecture, three hours; discussion, one hour. Survey of Renaissance and baroque art. P/NP or letter grading.

**23. Modern Art. (5)** Lecture, three hours; discussion, one hour; museum field trips. History of modern art from 1860s to 1960s, from Manet and impressionists to pop art and minimalism. Study of origins and social functions, as well as aesthetic innovations and philosophical dilemmas of modernism. P/NP or letter grading.

**24. Architecture in Modern World. (5)** Lecture, three hours; discussion, one hour. Introduction to study of architectural history through examination of built world of past two centuries. Building technologies and forms of economic, social, and political life have produced modern built environment that is both diverse and increasingly connected. Focus on factors that have affected architecture globally and those that give regions, cultures, and historical periods their particular qualities. Topics include architectural and urban ramifications of modern self-consciousness, nationalism and internationalism, industrialism, colonialism and anticolonialism, and new art and architectural theories. P/NP or letter grading.

**25. Museum Studies. (5)** Lecture, three hours; discussion, one hour; museum field trips. General introduction to study of museums in their social and historical contexts. Examination of debates about museum's role in society through case studies and analysis of exhibitions in range of museums including art, history, and ethnographic museums. P/NP or letter grading.

**27. Art and Architecture of Ancient Americas. (5)** Lecture, three hours; discussion, one hour; museum field trips. Introduction to art, architecture, and urbanism of Americas (North to South) from earliest settlement until AD 1450. Analysis of variety of media within their historical and cultural context. P/NP or letter grading.

**28. Arts of Africa. (5)** Lecture, three hours; discussion, one hour; museum field trips. Introduction to arts and architecture of Africa. Examination of social and historical contexts of their production. Introduction to body of information within framework of conceptual problem through series of case studies. P/NP or letter grading.

**29. Chinese Art. (5)** Lecture, three hours; discussion, one hour; museum field trips. General introduction to Chinese art, covering all major periods from Neolithic to modern age. Presentation of monuments as well as artifacts in variety of media in their social and historical contexts. P/NP or letter grading.

**30. Arts of Japan. (5)** Lecture, three hours; discussion, one hour; museum field trips. General introduction to art, architecture, and material culture of Japan, from earliest records to present. P/NP or letter grading.

**31. Art of India and Southeast Asia. (5)** Lecture, three hours; discussion, one hour; museum field trips. Discussion of selection of monuments and objects from Indian subcontinent and Southeast Asia using key historical, cultural, and religious concepts. Analysis of each monument or object in detail, with their relationships compared and contrasted. P/NP or letter grading.

**88. Lower-Division Seminars. (4)** Seminar, three hours. Limited to freshmen. Variable topics; consult Schedule of Classes or department for topics to be offered in specific term. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Art Historical Theories and Methodologies. (4)** Seminar, three hours. Requisites: three courses from 20 through 31. Critical examination of history of discipline of art history, with studies of various theoretical, critical, and methodological approaches to visual arts. Letter grading.

**M110A. Art and Architecture of Ancient Egypt, Predynastic Period to New Kingdom. (4)** (Same as Ancient Near East CM101A.) Lecture, three hours. Study of architecture, sculpture, painting, and minor arts during Predynastic period and Old Kingdom. May be repeated for credit with consent of instructor. P/NP or letter grading.

**M110B. Art and Architecture of Ancient Egypt, New Kingdom to Greco-Roman Period. (4)** (Same as Ancient Near East CM101B.) Lecture, three hours. Study of architecture, sculpture, painting, and minor arts from New Kingdom to Greco-Roman period. P/NP or letter grading.

**M110C. Ancient Egyptian Temple and City of Thebes. (4)** (Same as Ancient Near East M101C.) Lecture, four hours; fieldwork, one hour. Focus on ancient temples of city of Thebes (modern day Luxor). Theban temples are some of best-preserved cult buildings in all of Egypt, and their study illuminates traditions of artistic representation, architectural development, and

social and political transformations echoed throughout all of ancient Egypt. Investigation of ritual linking of temples on Nile's eastern and western banks through festival processions, chronological changes in function and form of Theban temples through time, and statuary program of individual temples. P/NP or letter grading.

**M110D. Art and Death in Ancient Egypt. (4)** (Same as Ancient Near East M166.) Lecture, four hours. Ways of death, burial, funerary ritual, and afterlife beliefs in ancient Egypt, as well as in ancient Near East and Nubia, with focus on ancient visual materials—both objects and architecture—from Predynastic to Roman periods. P/NP or letter grading.

**M111. Minoan Art and Archaeology. (4)** (Same as Classics M153A.) Lecture, three hours. Requisite: course 20 or Classics 10 or 51A. Study of development of art and architecture in Minoan Crete from circa 3000 to 1000 BC. P/NP or letter grading.

**M112A. Mycenaean Art and Archaeology. (4)** (Same as Classics M153B.) Lecture, three hours. Requisite: course 20 or Classics 10 or 51A. Study of development of art and architecture in Mycenaean Greece from circa 2000 to 1000 BC. P/NP or letter grading.

**M112B. Archaic Greek Art and Archaeology. (4)** (Same as Classics M153C.) Lecture, three hours. Requisite: course 20 or Classics 10 or 51A. Study of development of art and architecture of Greek world from approximately 800 through 490 BC. P/NP or letter grading.

**M112C. Classical Greek Art and Archaeology. (4)** (Same as Classics M153D.) Lecture, three hours. Requisite: course 20 or Classics 10 or 51A. Study of development of art and architecture of Greek world from approximately 490 through 350 BC. P/NP or letter grading.

**M112D. Hellenistic Greek Art and Archaeology. (4)** (Same as Classics M153E.) Lecture, three hours. Requisite: course 20 or Classics 10 or 51A. Study of development of art and architecture of Greek world from middle of 4th century BC., including transmittal of Greek art forms to Romans. P/NP or letter grading.

**M113A. Etruscan Art and Archaeology. (4)** (Same as Classics M153F.) Lecture, three hours. Requisite: course 20 or Classics 20 or 51B. Arts of Italic peninsula from circa 1000 BC. to end of Roman Republic. P/NP or letter grading.

**M113B. Roman Art and Archaeology. (4)** (Same as Classics M153G.) Lecture, three hours. Requisite: course 20 or Classics 20 or 51B. Art and architecture of Rome and its Empire from circa 300 BC to AD 300. P/NP or letter grading.

**M113C. Late Roman Art. (4)** (Same as Classics M153H.) Lecture, three hours. Requisite: course 20 or Classics 20 or 51B. Art of Roman Empire from 2nd through 4th century (AD). P/NP or letter grading.

**M114A-M114B-M114C. Classical Archaeology. (4-4-4)** (Same as Classics M153I-M153J-M153K.) Lecture, three hours. Requisite: one course from 20, Classics 10, 20, 51A, 51B, or History 1A. Knowledge of Greek and Latin not required. General introduction to study of Aegean, Greek, and Roman architecture, sculpture, and painting. May be repeated for credit with department consent. P/NP or letter grading.

**M114A. Greco-Roman Architecture; M114B. Greco-Roman Sculpture; M114C. Greco-Roman Painting. (4)** (Same as Classics M153L.) Lecture, three hours. Requisite: course 20 or Classics 10 or 51A. Knowledge of Greek and Latin not required. General introduction to study of Aegean, Greek, and Roman architecture, sculpture, and painting. May be repeated for credit with department consent. P/NP or letter grading.

**C114D. Selected Topics in Ancient Art. (4)** Lecture, three hours. Variable topics in ancient art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C214D. P/NP or letter grading.

**CM115A. Late Antique Art and Architecture. (4)** (Same as Classics M153L.) Lecture, three hours. Art and architecture of late Roman Empire and early Christian world. Concurrently scheduled with course C215A. P/NP or letter grading.

**C115B. Early Medieval Art and Architecture. (4)** Lecture, three hours. Requisite: course 21. Art and architecture of Western Europe from Migration period until AD 1000. Concurrently scheduled with course C215B. P/NP or letter grading.

**115C. Romanesque Art and Architecture. (4)** Lecture, three hours. Requisite: course 21. Art and architecture of Western Europe in 11th and 12th centuries. P/NP or letter grading.

**C115D. Gothic Art and Architecture. (4)** Lecture, three hours. Art and architecture of Europe in 13th century. Concurrently scheduled with course C215D. P/NP or letter grading.

**115E. Late Gothic Art and Architecture. (4)** Lecture, three hours. Strongly recommended preparation: course 21. Art and architecture of Europe in 14th and early 15th centuries. P/NP or letter grading.

**C115F. Medieval Paris. (4)** Lecture, three hours. Enforced requisite: course 21. Material culture, art, architecture, and history of city of Paris to circa 1500. Concurrently scheduled with course C215F. P/NP or letter grading.

**C116A. Middle Byzantine Art and Architecture. (4)** Lecture, three hours. Requisite: course 21. Theory and development of Byzantine art from iconoclastic controversy to 1204. Concurrently scheduled with course C216A. P/NP or letter grading.

**C116B. Late Byzantine Art and Architecture. (4)** Lecture, three hours. Theory and development of Byzantine art from 1204 to 1453. Concurrently scheduled with course C216B. P/NP or letter grading.

**C117A. Medieval Archaeology. (4)** Lecture, three hours. Archaeology of medieval world. Concurrently scheduled with course C217A. P/NP or letter grading.

**C117B. Selected Topics in Medieval Art. (4)** Lecture, three hours. Variable topics in medieval art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C217B. P/NP or letter grading.

**M118A. Medieval Armenian Art. (4)** (Same as Armenian M172.) Lecture, three hours. Examination of cultural and historical impact of Armenian miniature paintings. P/NP or letter grading.

**M118B. Armenian Painting, 17th to 20th Century. (4)** (Same as Armenian M173.) Lecture, three hours. Overview of development of modern Armenian painting out of its matrix in 17th and 18th centuries. P/NP or letter grading.

**C118C. Selected Topics in Armenian Art. (4)** Lecture, three hours. Variable topics in Armenian art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C218. P/NP or letter grading.

**119A. Western Islamic Art. (4)** Lecture, three hours. From Tigris and Euphrates Rivers to Spain, 7th to 16th century. P/NP or letter grading.

**119B. Eastern Islamic Art. (4)** Lecture, three hours. From Tigris and Euphrates Rivers through Afghanistan and parts of central Asia; Ottoman Empire. P/NP or letter grading.

**M119C. Introduction to Islamic Archaeology. (4)** (Same as Islamic Studies M111 and Middle Eastern Studies M111.) Lecture, three hours. From earliest monuments of Islam in Arabia and Jerusalem to humble remains of small Egyptian port, broad focus on archaeological and standing remains in central Islamic lands (primarily Syria, Egypt, and Iraq), Turkey, Iran, North Africa, and Spain. Profound cultural transformations occurred from birth of Islam in 7th century to early Ottoman period in 16th and 17th centuries, which are traceable in material records. Assessment of effectiveness of tools afforded by historical archaeology to aid understanding of past societies. P/NP or letter grading.

**M119D. Archaeology and Art of Christian and Islamic Egypt. (4)** (Same as Archaeology M112, Islamic Studies M112, and Middle Eastern Studies M112.) Lecture, three hours. Culture of Egypt transformed gradually after Muslim conquest in mid-7th century CE. According to material evidence such as ceramics, textiles, architectural forms, and building techniques, it is functionally impossible to separate pre-Islamic Christian Egypt from early Islamic Egypt. Although population may have become largely Muslim by 10th century, Egypt remained Coptic in many senses even to 14th century and retains sizeable Christian minority

to present. Survey of archaeological remains and standing architecture of Egypt from 6th to 19th century, charting changes and continuities in material culture and shifts in human geography and land use. P/NP or letter grading.

**C120. Selected Topics in Islamic Art. (4)** Lecture, three hours. Variable topics in Islamic art and architecture that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C220A. P/NP or letter grading.

**121A. Italian Renaissance Art of 14th Century. (4)** Lecture, three hours. Art and architecture of 14th century. P/NP or letter grading.

**121B. Italian Renaissance Art of 15th Century. (4)** Lecture, three hours. Art and architecture of 15th century. P/NP or letter grading.

**121C. Italian Renaissance Art of 16th Century. (4)** Lecture, three hours. Art and architecture of 16th century. P/NP or letter grading.

**121D. Late Renaissance Art: Counter-Reformation. (4)** Lecture, three hours. Requisite: course 22. Painting, sculpture, and architecture of late 16th and early 17th centuries considered in context of Counter-Reformation. P/NP or letter grading.

**124. Northern Renaissance Art. (4)** Lecture, three hours. Requisite: course 22. Painting and sculpture in Northern Renaissance. P/NP or letter grading.

**C125A. Southern Baroque Art. (4)** Lecture, three hours. Art and architecture of Spain or Italy, 16th to late 17th century. Concurrently scheduled with course C225. P/NP or letter grading.

**125B. Northern Baroque Art. (4)** Lecture, three hours. Requisite: course C125A. Art and architecture of Northern Europe, 16th to late 17th century. P/NP or letter grading.

**C126. Selected Topics in Early Modern Art. (4)** Lecture, three hours. Variable topics in early modern art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C226. P/NP or letter grading.

**127A. European Art of 17th and 18th Centuries. (4)** Lecture, three hours. Requisite: one course from course 20 through 31. Examination of art and visual culture of 17th and 18th centuries in light of political and intellectual developments. Special emphasis on effects of royal courts, colonialism, and revolution. P/NP or letter grading.

**127B. European Art of 19th Century. (4)** Lecture, three hours. Requisite: course 23. Neoclassicism and Romanticism, with emphasis on France—development and influence of David, Ingres, and Delacroix. P/NP or letter grading.

**M127C. Cultural and Intellectual History of Modern Europe, 19th Century. (4)** (Same as History M122E.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Climates of taste and climates of opinion. Educational, moral, and religious attitudes; art, thought, and manners of time in historical context. P/NP or letter grading.

**C128A-C128B-C128C. History of Photography. (4-4-4)** Concurrently scheduled with courses C228A-C228B-C228C. P/NP or letter grading. **C128A.** 1839 to 1910. Lecture, three hours. Study of origin, social functions, and development of photography in 19th and early 20th centuries, from Niépce to Atget.

**C128B.** 1910 to Present. Lecture, three hours; discussion, one hour. History of photography in 20th century, with special attention to photography's entrance into project of avant-garde and its role in formation of postmodern aesthetic. **C128C.** Selected Topics. Lecture, three hours. Variable topics in history of photography that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit.

**C129A. Modern Art, 1900 to 1950. (4)** Lecture, three hours. Inquiry into 20th-century modernism from Fauvism to abstract expressionism. Topics include primitivism, gender, and sexuality in modernist art; origins of abstraction, collage, photomontage, and ready-made; rise of automatism and chance procedures; art, utopia, and political revolution; antimodernism and

fascism; mass culture, machine paradigm, and work of art in age of mechanical reproduction. Concurrently scheduled with course C229A. P/NP or letter grading.

**C129B. Dada, 1915 to 1923. (4)** Lecture, three hours; discussion, one hour (when scheduled). Introduction to modernism and historical avant-garde of early 20th century, tracing in detail emergence of Dada avant-garde in its various geographical locales during and after World War I. Visual art, literature, film, and performance addressed, with special attention to invention of series of avant-garde strategies crucial to Dada: ready-made, chance procedures, mechanical drawing, and photomontage. Concurrently scheduled with course C229B. P/NP or letter grading.

**C129C. Surrealism, 1924 to 1939. (4)** Lecture, three hours; discussion, one hour (when scheduled). Study of art, literature, and film associated with surrealist movement in France, with special attention to dissident surrealism of writer and philosopher Georges Bataille, as well as to challenge to art history posed by surrealism's engagement with lessons of psychoanalysis. Concurrently scheduled with course C229C. P/NP or letter grading.

**130. Selected Topics in Modern Art. (4)** Lecture, three hours. Requisite: course 23. Changing topics in modern art (post-1780) that reflect interests of individual regular and visiting faculty members. May be repeated once for credit. P/NP or letter grading.

**C131A. Contemporary Art, 1940s to 1950s. (4)** Lecture, three hours. Requisite: course 23. Study of major artistic and cultural trends following World War II in U.S. and Europe, covering abstract expressionism to pop art. Concurrently scheduled with course C231A. P/NP or letter grading.

**C131B. Contemporary Art, 1960s to 1970s. (4)** Lecture, three hours. Requisite: course 23. Study of ambitions and contexts of pop art, minimalism, conceptual art, feminist art, performance, land art, and more. Concurrently scheduled with course C231B. P/NP or letter grading.

**C131C. Contemporary Art, 1980s to 1990s. (4)** Lecture, three hours; discussion, one hour. Requisite: course 23. Study of politics of representation at end of century, covering dominant strategies and trends in postmodernist art. Concurrently scheduled with course C231C. P/NP or letter grading.

**132. Selected Topics in Contemporary Art. (4)** Lecture, three hours. Requisite: course 23. Changing topics in contemporary art (post-1945) that reflect interests of individual regular and/or visiting faculty members. May be repeated once for credit. P/NP or letter grading.

**C133A. American Art before Civil War. (4)** Lecture, three hours. Painting, sculpture, and architecture in U.S. from Colonial period through Civil War. Concurrently scheduled with course C233A. P/NP or letter grading.

**C133B. American Art in Gilded Age, 1860 to 1900. (4)** Lecture, three hours. Painting, sculpture, and architecture in U.S. from Civil War to turn of century. Concurrently scheduled with course C233B. P/NP or letter grading.

**C133C. American Art, 1900 to 1945. (4)** Lecture, three hours. Painting, sculpture, and photography in U.S. from 1900 to 1945. Concurrently scheduled with course C233C. P/NP or letter grading.

**133D. Architecture in U.S. (4)** Lecture, three hours; discussion, one hour. Introduction to architecture built in U.S. over last 5,000 years. Architecture as vehicle for political and cultural authority, citizenship, ethnic and social identity; its role in defining place and our relationship to natural environment and as vehicle for asserting human control over natural world; its place in world of work and commerce; and its status as professional and aesthetic pursuit. P/NP or letter grading.

**133E. American Houses. (4)** Lecture, three hours. Many historians consider single-family houses to be one of two most American contributions to world architecture (next to skyscrapers). Examination of this claim critically by placing single-family houses in broader context of varied dwellings built and occupied by residents of present-day U.S. over last 500 years, including both aesthetically ambitious houses and ordinary (or vernacular) ones, houses of indigenous



groups and those of immigrants of many sorts, urban and rural houses, and single-family houses and multiple dwellings of all sorts. Offers ways to think about houses we occupy and to understand how they relate to major themes in history of American architecture. P/NP or letter grading.

**CM135A. African American Art before 1900. (4)** (Same as African American Studies CM135A.) Lecture, three hours. Detailed inquiry into work to circa 1900 of African American artists whose works provide insightful and critical commentary about major features of American life and society. Concurrently scheduled with course CM235A. P/NP or letter grading.

**CM135B. African American Art, 1900 to 1963. (4)** (Same as African American Studies CM135B.) Lecture, three hours. Detailed inquiry into work of African American artists from Columbian Exposition to 1963 March on Washington within context of social, political, and cultural engagement, as well as in codification of modern black life in U.S. Concurrently scheduled with course CM235B. P/NP or letter grading.

**C136A. Selected Topics in African American Art. (4)** Lecture, three hours. Variable topics in African American art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C236A. P/NP or letter grading.

**137. Arts of Native North America. (4)** Lecture, three hours. Survey of painting, sculpture, and other arts from Inuit to peoples of Caribbean and Southwestern U.S. P/NP or letter grading.

**CM139A. Maya Art and Architecture. (4)** (Same as Chicana/o and Central American Studies M137.) Lecture, three hours. Requisite: course 27. Study of art of selected Maya-speaking cultures of southern Mesoamerica from circa 2000 BC to Conquest, with particular emphasis on history and iconography. Concurrently scheduled with course C239A. P/NP or letter grading.

**C139B. Aztec Art and Architecture. (4)** Lecture, three hours. Requisite: course 27. Painting, sculpture, architecture, and other arts of Nahuatl-speaking peoples of central Mexico, with emphasis on their social and historical context and major scholarly debates. Concurrently scheduled with course C239B. P/NP or letter grading.

**C139C. Inca Art and Architecture. (4)** Lecture, three hours. Exploration of art, architecture, and urbanism of Incas from their empire's height in late 15th century to their political and cultural fragmentation during Spanish occupation of Andes (1532 to 1824). Concurrently scheduled with course C239C. P/NP or letter grading.

**C140. Selected Topics in Arts of Indigenous Americas. (4)** Lecture, three hours. Variable topics in artistic production of Native people across Americas that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C240A. P/NP or letter grading.

**CM141. Colonial Latin American Art. (4)** (Same as Chicana/o and Central American Studies M187B.) Lecture, three hours; discussion, one hour (when scheduled). Art and architecture of colonial Americas from 16th to 18th century. Concurrently scheduled with course C241. P/NP or letter grading.

**C142A. Mexican Art in Modern Age. (4)** Lecture, three hours. Mexican art of 19th and 20th centuries, from foundation of academy in 1785 to present day. Study of art and revolution, muralism, surrealism, indigenism, postcolonialism, and postmodernism in painting, sculpture, prints, photography, and architecture. Concurrently scheduled with course C242A. P/NP or letter grading.

**C142B. Latin American Art of 20th Century. (4)** Lecture, three hours; discussion, one hour (when scheduled). Mainstream modern and contemporary art and architecture of selected Latin American countries, including both modernist and postmodernist forms, considered in context of social and political concerns, both national and international. Concurrently scheduled with course C242B. P/NP or letter grading.

**143. Selected Topics in Latin American Art. (4)** Lecture, three hours. Variable topics in Latin American art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. P/NP or letter grading.

**144. Caribbean Art. (4)** Lecture, three hours. Cultural history of Caribbean. P/NP or letter grading.

**C145A. Architecture and Urbanism in Africa. (4)** Lecture, three hours. Survey of African built environment at various moments and in different places from about 200 CE to present, with emphasis on cultural, social, and historical contexts of architecture, gender, and space, and contemporary African cities. Concurrently scheduled with course C245A. P/NP or letter grading.

**C145B. Contemporary Arts of Africa. (4)** Lecture, three hours; discussion, one hour (when scheduled). Survey of African visual practices since mid-20th century, with special emphasis on changing meaning of art object, status of African artist, global reception of contemporary African art, and very definitions of contemporary African art. Concurrently scheduled with course C245B. P/NP or letter grading.

**C146A. Selected Topics in African Art. (4)** Lecture, three hours. Variable topics in African art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C246A. P/NP or letter grading.

**147. Arts of Oceania. (4)** Lecture, three hours. Requisite: course 28. Survey of arts of major island groupings of Pacific, emphasizing style-regions and broad historical relationships. P/NP or letter grading.

**C148A. Art and Material Culture, Neolithic to 210 BC. (4)** Lecture, three hours; discussion, one hour. Genesis of Chinese civilization in light of new archaeological finds, including sites and works of art (e.g., ceramics, bronzes, jades). Concurrently scheduled with course C248A. P/NP or letter grading.

**C148B. Art and Material Culture of Early Imperial China, 210 BC. to AD 906. (4)** Lecture, three hours. Palaces and tombs of early imperial dynasties, impact of Buddhist art (cave temples), rise of new media and technologies. Concurrently scheduled with course C248B. P/NP or letter grading.

**C148C. Art and Material Culture of Late Imperial China, 906 to 1911. (4)** Lecture, three hours. Secular and religious (Buddhist and Taoist) architecture, painting, sculpture, and various luxury industries (lacquered, porcelain, textiles, jade, bronze, furniture, wood and bamboo carving, etc.). Concurrently scheduled with course C248C. P/NP or letter grading.

**C148D. Advanced Chinese Art. (4)** Lecture, three hours. Study in Chinese painting and sculpture. Concurrently scheduled with course C248D. P/NP or letter grading.

**C148E. Art in Modern China. (4)** Lecture, three hours. Concentrated look at major schools and masters of Chinese art from turn of 20th century to present, with focus on interaction with foreign cultures and issues of self-identity, assimilation, modernity, tradition, and continuity. Consideration of recent developments in Chinese art in global context. Concurrently scheduled with course C248E. P/NP or letter grading.

**C148F. Advanced Chinese Painting. (4)** Lecture, three hours. Examination of classical painting of imperial China through theory and practice. Concurrently scheduled with course C248F. P/NP or letter grading.

**C148G. Gardens in Chinese Art and Culture. (4)** Lecture, three hours; discussion, one hour. Overview of practice, theory, and representation of Chinese gardens in their historical, philosophical, artistic, social, and cultural contexts through literary writings, paintings, and aspects of material culture. Concurrently scheduled with course C248G. P/NP or letter grading.

**C149. Selected Topics in Chinese Art. (4)** Lecture, three hours. Variable topics in Chinese art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C249A. P/NP or letter grading.

**150A. Japanese Art. (4)** Lecture, three hours. Not open to freshmen. Japanese art from its beginning in prehistory through 19th century. Emphasis on development of Buddhist art and its relationship with culture. P/NP or letter grading.

**C150B. Advanced Japanese Art. (4)** Lecture, three hours. Requisite: course 150A. Study in Japanese painting and sculpture. Concurrently scheduled with course C250. P/NP or letter grading.

**C151. Selected Topics in Japanese Art. (4)** Lecture, three hours; discussion, one hour (when scheduled). Variable topics in Japanese art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C251A. P/NP or letter grading.

**152A. Arts of Korea. (4)** Lecture, three hours; museum field trip. Introduction to arts and archaeology on Korean peninsula from Neolithic beginnings to early 20th century through analysis and discussion of selection of monuments and objects within technological, stylistic, religious, cultural, and sociopolitical contexts. Examination of construction of concepts of history and art under colonial and nationalist perspectives, with regard to historical and contemporary East Asian cultural and political interrelations. P/NP or letter grading.

**C152B. History of Korean Painting. (4)** Lecture, three hours. Limited to juniors/seniors. Korean painting history from Three Kingdoms period to 19th century, examined within cultural and sociopolitical contexts. Special emphasis on diversity of topics and social status of artists during Choson dynasty (1392 to 1910). Concurrently scheduled with course C252A. P/NP or letter grading.

**C152C. History of Korean Ceramics. (4)** Lecture, three hours. Limited to juniors/seniors. History of Korean ceramics from Neolithic period to 19th century, with special emphasis on technological and stylistic developments. Concurrently scheduled with course C252B. P/NP or letter grading.

**C152D. History of Korean Buddhist Art. (4)** Lecture, three hours. Limited to juniors/seniors. History of Korean Buddhist art from Three Kingdoms period to Choson dynasty, with special emphasis on Buddhist iconography and relationship between sculpture, painting, and architecture. Concurrently scheduled with course C252C. P/NP or letter grading.

**C153. Selected Topics in Korean Art. (4)** Lecture, three hours. Limited to juniors/seniors. Variable topics in Korean art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C253A. P/NP or letter grading.

**154A. Early Art of India. (4)** Lecture, three hours. Not open to freshmen. Survey of Indian art from Indus Valley cultures to 10th century. Emphasis on Buddhist and Hindu backgrounds of arts. P/NP or letter grading.

**154B. Later Art of India. (4)** Lecture, three hours. Not open to freshmen. Survey of Indian art from 10th to 19th century. Decline of Buddhist art, last efflorescence of Hindu architecture, Muslim painting and architecture, and Rajput painting. P/NP or letter grading.

**C154C. Advanced Indian Art. (4)** Lecture, three hours. Requisite: course 154A. Study in Indian sculpture and architecture. Concurrently scheduled with course C254A. P/NP or letter grading.

**154D. Modern and Contemporary South Asian Art. (4)** Lecture, three hours; discussion, one hour (when scheduled). Topics in modern and contemporary South Asian art from 1900 to present. P/NP or letter grading.

**C155. Selected Topics in South and Southeast Asian Art. (4)** Lecture, three hours. Variable topics in South and Southeast Asian art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C255A. P/NP or letter grading.

**156. Arts of Southeast Asia. (4)** Lecture, three hours. Not open to freshmen. Southeast Asian art from its beginning in prehistory through 19th century. Study of

art of selected cultures from Burma, Malaysia, Thailand, Cambodia, Vietnam, and Indonesia. P/NP or letter grading.

**C158A. Selected Topics in Asian Arts and Architecture. (4)** Lecture, three hours. Variable topics in Asian arts and architecture that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C258A. P/NP or letter grading.

**C160. Art and Empire. (4)** Lecture, three hours; discussion, one hour (when scheduled). Examination of relationship between art and imperial ideologies and introduction to current issues in colonial studies and postcolonial criticism. Concurrently scheduled with course C260A. P/NP or letter grading.

**161. Cities in History. (4)** Lecture, three hours; discussion, one hour. Examination of history of cities worldwide, locating cities in their aesthetic, social, cultural, and symbolic contexts. History of cities from origins of urbanism to present, with focus on recent centuries. P/NP or letter grading.

**C169. Selected Topics in Architectural History. (4)** Lecture, three hours. Variable topics in architectural history that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C269. P/NP or letter grading.

**C170A. Museum Studies. (4)** Lecture, three hours; discussion, one hour (when scheduled). Introduction to museology as critical practice, with emphasis on history and theory of museums and impact of culture and society on current museum theory and practice. Concurrently scheduled with course C270A. P/NP or letter grading.

**C170B. Museum Studies Practicum. (2 to 4)** Lecture, three hours. On-site examination and discussion of selected artworks, exhibitions, and associated published and distributed materials, and of museum and gallery institutions, practices, and policies. Concurrently scheduled with course C270B. Letter grading.

**C171. Selected Topics in Museum Studies. (4)** Seminar, three hours. Variable topics in museum studies that reflect interests of individual regular and/or visiting faculty members. May be repeated for credit with topic change. Concurrently scheduled with course C271. P/NP or letter grading.

**C172A. Preservation of Art. (4)** Lecture, three hours. Designed for Anthropology and Art History majors and other juniors/seniors. Introduction to preservation of cultural heritage materials, including what should be preserved and why, as well as who should be involved in decision-making process. Discussion of issues of preservation and restoration of these cultural heritage materials both in museum and outdoor environment contexts. Materials and techniques used to make cultural heritage materials, in relation to preservation efforts needed to prevent decay and loss. Introduction to examples of conservation issues related to sites, buildings, monuments, and collections. Ethical and contextual aspects with reference to changing values, illustrating how cultural materials may have been treated differently according to those values. Concurrently scheduled with course C272A. P/NP or letter grading.

**C172B. Art: Fakes, Forgeries, and Authenticity. (4)** Lecture, three hours. Examination of concepts of authenticity, originality, fakes, and forgeries in art. Overview of problems inherent in concept of authenticity and description of many examples of problems related to this concept in series of discussions based on objects from variety of cultures. Introduction to subject of fakes and account of three different areas of connoisseurship that are essential component of production, study, and scientific examination of fakes. Nature of art connoisseurship described in many examples from Renaissance and earlier panel paintings, as well as antiquities and traditional African arts. Background of art restoration and art conservation discussed in relationship to authenticity and technical studies. Scientific tools that form basis of another kind of connoisseurship described in terms of dating techniques that can be applied directly to works of art and technical

methods by which material constituents of works of art are studied. Concurrently scheduled with course C272C. P/NP or letter grading.

**M179. Cultural Heritage and Identity Representation: Creating Fowler and Virtual Exhibit. (4)** (Same as Ancient Near East M179.) Lecture, three hours; discussion, one hour. Exploration of what it takes to run museum and create exhibit. Introduction to different types of museum work, ranging from collecting and curation, to research, conservation, presentation, visitor experience, and management. Students jointly create exhibit based on Fowler Museum collection. Students research and discuss context and different stakeholders that relate to material under consideration. Consideration of narrative exhibit and how objects and their arrangement convey deliberate or accidental messages. Consideration of audiences as well as original context of each object. Focus on people behind objects, technologies, or material characteristics. P/NP or letter grading.

**185. Undergraduate Seminar. (4)** Seminar, three hours. Designed for juniors/seniors. Selected aspects of art history explored through readings, discussion, research papers, and oral presentations. May be repeated twice for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Museum Studies Internship. (3)** Tutorial, five hours; fieldwork, four hours. Requisite: course C170A. Limited to junior/senior Art History majors. Internship in supervised setting at participating host museum at UCLA or in greater Los Angeles area. Participation in ongoing museum projects and operations, with specific work to be determined by host institution in consultation with faculty mentor. Curatorial, educational, communications, public relations, and development work may be included, as well as assistance at public programs and related events. Students meet on regular basis with faculty mentor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty mentor required. P/NP grading.

**196. Research Apprenticeship in Art History. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP or letter grading.

**197A. Individual Studies in Art History. (2 to 4)** Tutorial, to be arranged. Preparation: 3.0 grade-point average in major. Limited to seniors. Individual intensive study for majors, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for maximum of 8 units. Eight units may be applied toward major. Individual contract required. P/NP or letter grading.

**197B. Individual Capstone Studies. (2)** Tutorial, two hours. Limited to departmental junior/senior majors and minors. Guided study led by faculty supervisor. Instructor meets with student to help design culminating capstone project so it conforms to departmental capstone project guidelines. Must be taken in conjunction and concurrently with one upper-division departmental course. May not be repeated for credit. Individual contract required. P/NP or letter grading.

**198A-198B. Honors Research in Art History. (4-4)** Tutorial, to be arranged. Preparation: completion of minimum of four upper-division art history courses with 3.5 departmental grade-point average and overall 3.0 grade-point average. Limited to junior/senior Art History and History/Art History majors. Two-term independent research project under supervision of appropriate faculty member, culminating in departmental honors thesis of approximately 30 pages. Individual contract required. In Progress (198A) and letter (198B) grading.

**199. Directed Research in Art History. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Art Historical Theories and Methodologies. (4)** Seminar, three hours. Critical examination of history of discipline of art history, with studies of various theoretical, critical, and methodological approaches to visual arts from antiquity to present. May be repeated for credit with consent of adviser. S/U or letter grading.

**201. Topics in Historiography of Art History. (4)** Seminar, three hours. Critical examination of historiographic traditions of specific areas and fields within discipline of art history, concentrating on particular time periods, geographical areas, artistic traditions, or work of one or more authors. May be repeated for credit with consent of adviser. S/U or letter grading.

**202. Topics in Theory and Criticism in Art History. (4)** Seminar, three hours. Focused studies of various theoretical and critical traditions within art history, concentrating on particular issues, authors, or methodologies either within or across historical and cultural areas. May be repeated for credit with consent of adviser. S/U or letter grading.

**203. Topics in Architectural History and Theory. (4)** Seminar, three hours. Focused studies of various theoretical and critical traditions within architectural history, concentrating on particular issues, authors, or methodologies either within or across historical, geographic, and cultural areas. May be repeated for credit with consent of adviser. S/U or letter grading.

**207. Consortium Scholar Seminar at Getty Research Institute. (4)** Seminar, three hours. Intramural graduate seminar at Getty Museum in collaboration with Getty Research Institute. Instructors, topics, and format vary. S/U or letter grading.

**210. Egyptian Art. (4)** Seminar, two hours. Requisites: courses M110A, M110B, M111. Art in Egypt during Late period and Greco-Roman period. Students should be ready to prepare for every meeting briefing of topic from archaeological memoirs, not to exceed 10 minutes. Some lectures. May be repeated for credit with consent of adviser. S/U or letter grading.

**212A. Topics in Aegean Art. (4)** Seminar, two hours. Prerequisites: courses M111, M112A. Art and architecture of Aegean Bronze Age (3000 to 1000 BC). Monuments or theoretical problems related to art and culture of Crete, Greece, Cyclades, or Western Anatolia. May be repeated for credit with consent of adviser. S/U or letter grading.

**212B. Topics in Classical Art. (4)** Seminar, two to three hours. Studies in Parthian art. Site-by-site survey of Near East (Afghanistan, Iran, Iraq, Syria) during period of Greek and Parthian control. May be repeated for credit with consent of adviser. S/U or letter grading.

**212C. Classical Art. (4)** Seminar, two hours. Studies in Greco-Roman art and archaeology. Studies of specific periods, sites, or artistic media. May be repeated for credit with consent of adviser. S/U or letter grading.

**C214D. Selected Topics in Ancient Art. (4)** Lecture, three hours. Variable topics in ancient art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C114D. S/U or letter grading.

**C215A. Late Antique Art and Architecture. (4)** Lecture, three hours. Art and architecture of late Roman Empire and early Christian world. Concurrently scheduled with course CM115A. S/U or letter grading.

**C215B. Early Medieval Art and Architecture. (4)** Lecture, three hours. Prerequisite: course 21. Art and architecture of Western Europe from Migration period until AD 1000. Concurrently scheduled with course C115B. S/U or letter grading.

**C215D. Gothic Art and Architecture. (4)** Lecture, three hours. Art and architecture of Europe in 13th century. Concurrently scheduled with course C115D. S/U or letter grading.

**C215F. Medieval Paris. (4)** Lecture, three hours. Enforced prerequisite: course 21. Material culture, art, architecture, and history of city of Paris to circa 1500. Concurrently scheduled with course C115F. S/U or letter grading.

**C216A. Middle Byzantine Art and Architecture. (4)** Lecture, three hours. Prerequisite: course 21. Theory and development of Byzantine art from iconoclastic controversy to 1204. Concurrently scheduled with course C116A. S/U or letter grading.

**C216B. Late Byzantine Art and Architecture. (4)** Lecture, three hours. Theory and development of Byzantine art from 1204 to 1453. Concurrently scheduled with course C116B. S/U or letter grading.

**C217A. Medieval Archaeology. (4)** Lecture, three hours. Archaeology of medieval world. Concurrently scheduled with course C117A. S/U or letter grading.

**C217B. Selected Topics in Medieval Art. (4)** Lecture, three hours. Variable topics in medieval art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C117B. S/U or letter grading.

**217C. Medieval Art. (4)** Seminar, two hours. Studies in selected topics in Byzantine and European medieval art. May be repeated for credit with consent of adviser. S/U or letter grading.

**217D. Byzantine Art, Architecture, and Archaeology. (4)** Seminar, two hours. Selected topics in Byzantine art and architecture. May be repeated for credit with consent of adviser. S/U or letter grading.

**C218. Selected Topics in Armenian Art. (4)** Lecture, three hours. Variable topics in Armenian art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C118C. S/U or letter grading.

**C220A. Selected Topics in Islamic Art. (4)** Lecture, three hours. Variable topics in Islamic art and architecture that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C120. S/U or letter grading.

**220B. Advanced Studies in Islamic Art. (4)** Seminar, three hours. Monuments or theoretical problems related to Islamic culture and artistic production. May be repeated for credit with consent of adviser. S/U or letter grading.

**222A. Italian Renaissance Art. (4)** Seminar, two hours. Preparation: knowledge of Italian. Study of various aspects of Leonardo's theoretical approach to art in terms of sources and impact on followers. May be repeated for credit with consent of adviser. S/U or letter grading.

**224A. Northern Renaissance Art. (4)** Seminar, two hours. Preparation: knowledge of German. Emphasis on selected topic (e.g., particular artist, trend, or problem). Research papers and oral reports required. May be repeated for credit with consent of adviser. S/U or letter grading.

**C225. Southern Baroque Art. (4)** Lecture, three hours. Art and architecture of Spain or Italy, 16th to late 17th century. Concurrently scheduled with course C125A. S/U or letter grading.

**225B. Early Modern Art. (4)** Seminar, three hours. Emphasis on selected topic (e.g., particular artist, trend, or problem). Research papers and oral reports required. Language requirements depend on area of focus. May be repeated for credit with consent of adviser. S/U or letter grading.

**C226. Selected Topics in Early Modern Art. (4)** Lecture, three hours. Variable topics in early modern art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C126. S/U or letter grading.

**C228A-C228B-C228C. History of Photography. (4-4-4)** Concurrently scheduled with courses C128A-C128B-C128C. S/U or letter grading. **C228A.** 1839 to 1910. Lecture, three hours. Study of origin, social functions, and development of photography in 19th and early 20th centuries, from Niépce to Atget. **C228B.** 1910 to Present. Lecture, three hours; discussion, one hour. History of photography in 20th century, with special attention to photography's entrance into project of avant-garde and its role in formation of postmodern aesthetic. **C228C.** Selected Topics. Lecture, three hours. Variable topics in history of photography that reflect interests of individual regular and/or visiting faculty members.

**228D. History and Theory of Photography. (4)** Seminar, three hours. Selected topics in photography history, criticism, and theory. S/U or letter grading.

**C229A. Modern Art, 1900 to 1950. (4)** Lecture, three hours; discussion, one hour. Inquiry into 20th-century modernism from Fauvism to abstract expressionism. Topics include primitivism, gender, and sexuality in modernist art; origins of abstraction, collage, photomontage, and ready-made; rise of automatism and chance procedures; art, utopia, and political revolution; antimodernism and fascism; mass culture, machine paradigm, and work of art in age of mechanical reproduction. Concurrently scheduled with course C129A. S/U or letter grading.

**C229B. Dada, 1915 to 1923. (4)** Lecture, three hours; discussion, one hour (when scheduled). Introduction to modernism and historical avant-garde of early 20th century, tracing in detail emergence of Dada avant-garde in its various geographical locales during and after World War I. Visual art, literature, film, and performance addressed, with special attention to invention of series of avant-garde strategies crucial to Dada: ready-made, chance procedures, mechanical drawing, and photomontage. Concurrently scheduled with course C129B. S/U or letter grading.

**C229C. Surrealism, 1924 to 1939. (4)** Lecture, three hours; discussion, one hour (when scheduled). Study of art, literature, and film associated with surrealist movement in France, with special attention to dissident surrealism of writer and philosopher Georges Bataille, as well as to challenge to art history posed by surrealism's engagement with lessons of psychoanalysis. Concurrently scheduled with course C129C. S/U or letter grading.

**230A. European Art, 1700 to 1900. (4)** Seminar, two hours. May be repeated for credit with consent of adviser. S/U or letter grading.

**M230B-M230C. Seminars: Modern European History. (4-4)** (Same as History M230A-M230B.) Seminar, three hours. Course M230B is enforced prerequisite to M230C. May be repeated for credit with consent of adviser. In Progress (M230B) and letter (M230C) grading.

**230D. Modern Art. (4)** Seminar, two hours. Changing topics in modern art (including illustration and other popular forms) that reflect interests of particular faculty members. Political and economic factors affecting arts of France and Germany at various times. May be repeated for credit with consent of adviser. S/U or letter grading.

**C231A. Contemporary Art, 1940s to 1950s. (4)** Lecture, three hours. Prerequisite: course 23. Study of major artistic and cultural trends following World War II in U.S. and Europe, covering abstract expressionism to pop art. Concurrently scheduled with course C131A. S/U or letter grading.

**C231B. Contemporary Art, 1960s to 1970s. (4)** Lecture, three hours. Prerequisite: course 23. Study of ambitions and contexts of pop art, minimalism, conceptual art, feminist art, performance, land art, and more. Concurrently scheduled with course C131B. S/U or letter grading.

**C231C. Contemporary Art, 1980s to 1990s. (4)** Lecture, three hours; discussion, one hour. Prerequisite: course 23. Study of politics of representation at end of century, covering dominant strategies and trends in postmodernist art. Concurrently scheduled with course C131C. S/U or letter grading.

**232. Contemporary Art. (4)** Seminar, three hours. Selected topics in contemporary art, criticism, and theory. S/U or letter grading.

**C233A. American Art before Civil War. (4)** Lecture, three hours. Painting, sculpture, and architecture in U.S. from Colonial period through Civil War. Concurrently scheduled with course C133A. S/U or letter grading.

**C233B. American Art in Gilded Age, 1860 to 1900. (4)** Lecture, three hours. Painting, sculpture, and architecture in U.S. from Civil War to turn of century. Concurrently scheduled with course C133B. S/U or letter grading.

**C233C. American Art, 1900 to 1945. (4)** Lecture, three hours. Painting, sculpture, and photography in U.S. from 1900 to 1945. Concurrently scheduled with course C133C. S/U or letter grading.

**234. American Art. (4)** Seminar, two hours. Prerequisite: course C233A or C233B or C233C, depending on topic. Topics in American art from Colonial period to present. Discussion of weekly readings, student oral presentations, and papers. May be repeated for credit with consent of adviser. S/U or letter grading.

**CM235A. African American Art. (4)** (Same as African American Studies CM235A.) Lecture, three hours. Detailed inquiry into work to circa 1900 of African American artists whose works provide insightful and critical commentary about major features of American life and society. Concurrently scheduled with course CM135A. S/U or letter grading.

**CM235B. African American Art, 1900 to 1963. (4)** (Same as African American Studies CM235B.) Lecture, three hours. Detailed inquiry into work of African American artists from Columbian Exposition to 1963 March on Washington within context of social, political, and cultural engagement, as well as in codification of modern black life in U.S. Concurrently scheduled with course CM135B. S/U or letter grading.

**M236. Topics in African American Art. (4)** (Same as African American Studies M256.) Seminar, three hours. Prerequisite: course CM235A or CM235B. Topics in African American art from 18th century to present. May be repeated for credit with consent of graduate adviser. S/U or letter grading.

**C236A. Selected Topics in African American Art. (4)** Lecture, three hours. Variable topics in African American art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C136A. S/U or letter grading.

**237. Native North American Art. (4)** Seminar, three hours. Studies in selected topics in art of American Indians. May be repeated for credit with consent of adviser. S/U or letter grading.

**C239A. Maya Art and Architecture. (4)** Lecture, three hours. Requisite: course 27. Study of art of selected Maya-speaking cultures of southern Mesoamerica from circa 2000 BC to Conquest, with particular emphasis on history and iconography. Concurrently scheduled with course CM139A. S/U or letter grading.

**C239B. Aztec Art and Architecture. (4)** Lecture, three hours. Requisite: course 27. Painting, sculpture, architecture, and other arts of Nahuatl-speaking peoples of central Mexico, with emphasis on their social and historical context and major scholarly debates. Concurrently scheduled with course C139B. S/U or letter grading.

**C239C. Inca Art and Architecture. (4)** Lecture, three hours. Exploration of art, architecture, and urbanism of Incas from their empire's height in late 15th century to their political and cultural fragmentation during Spanish occupation of Andes (1532 to 1824). Concurrently scheduled with course C139C. S/U or letter grading.

**C240A. Selected Topics in Arts of Indigenous Americas. (4)** Lecture, three hours. Variable topics in artistic production of Native people across Americas that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C140. S/U or letter grading.

**240B. Art and Architecture of Indigenous Americas. (4)** Seminar, three hours. Studies in selected topics in artistic production of Native people across Americas. May be repeated for credit with consent of adviser. S/U or letter grading.

**C241. Colonial Latin American Art. (4)** Lecture, three hours; discussion, one hour (when scheduled). Art and architecture of colonial Americas from 16th to 18th century. Concurrently scheduled with course CM141. S/U or letter grading.

**C242A. Mexican Art in Modern Age. (4)** Lecture, three hours. Mexican art of 19th and 20th centuries, from foundation of academy in 1785 to present day. Study of art and revolution, muralism, surrealism, indigenism, postcolonialism, and postmodernism in painting, sculpture, prints, photography, and architecture. Concurrently scheduled with course C142A. S/U or letter grading.

**C242B. Latin American Art of 20th Century. (4)** Lecture, three hours; discussion, one hour (when scheduled). Mainstream modern and contemporary art and architecture of selected Latin American countries, including both modernist and postmodernist forms, considered in context of social and political concerns, both national and international. Concurrently scheduled with course C142B. S/U or letter grading.

**M243. Hemispheric and Transnational Approaches to Contemporary Art in Americas. (4)** (Same as Chicana/o and Central American Studies M237.) Seminar, three hours. Maps current state and future of research, teaching, and museum practice in contemporary art of Americas, with focus on hemispheric and transnational approaches. Study of influential theoretical texts from literary studies and critical examination of recent publications in arts, including museum exhibition catalog, as hemispheric and transnational approach to contemporary Latinx and Latin American arts is posited. Focus intersects with other related topics, including art post-1968; comparative indigenities in Americas; art, globalism, and biennials; decolonial turn; transnational feminisms; and New American counter narratives. S/U or letter grading.

**C245A. Architecture and Urbanism in Africa. (4)** Lecture, three hours. Survey of African built environment at various moments and in different places from about 200 CE to present, with emphasis on cultural, social, and historical contexts of architecture, gender, and space, and contemporary African cities. Concurrently scheduled with course C145A. S/U or letter grading.

**C245B. Contemporary Arts of Africa. (4)** Lecture, three hours; discussion, one hour (when scheduled). Survey of African visual practices since mid-20th cen-

tury, with special emphasis on changing meaning of art object, status of African artist, global reception of contemporary African art, and very definitions of contemporary African art. Concurrently scheduled with course C145B. S/U or letter grading.

**246. African Art. (4)** Seminar, three hours. Studies in selected topics in art of sub-Saharan Africa. May be repeated for credit with consent of adviser. S/U or letter grading.

**C246A. Selected Topics in African Art. (4)** Lecture, three hours. Variable topics in African art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C146A. S/U or letter grading.

**247. Oceanic Art. (4)** Seminar, three hours. Studies in selected topics in art of Pacific islands. May be repeated for credit with consent of adviser. S/U or letter grading.

**C248A. Art and Material Culture, Neolithic to 210 BC. (4)** Lecture, three hours; discussion, one hour. Genesis of Chinese civilization in light of new archaeological finds, including sites and works of art (e.g., ceramics, bronzes, jades). Concurrently scheduled with course C148A. S/U or letter grading.

**C248B. Art and Material Culture of Early Imperial China, 210 BC to AD 906. (4)** Lecture, three hours. Palaces and tombs of early imperial dynasties, impact of Buddhist art (cave temples), rise of new media and technologies. Concurrently scheduled with course C148B. S/U or letter grading.

**C248C. Art and Material Culture of Late Imperial China, 906 to 1911. (4)** Lecture, three hours. Secular and religious (Buddhist and Taoist) architecture, painting, sculpture, and various luxury industries (lacquer, porcelain, textiles, jade, bronze, furniture, wood and bamboo carving, etc.). Concurrently scheduled with course C148C. S/U or letter grading.

**C248D. Advanced Chinese Art. (4)** Lecture, three hours. Study in Chinese painting and sculpture. Concurrently scheduled with course C148D. S/U or letter grading.

**C248E. Art in Modern China. (4)** Lecture, three hours. Concentrated look at major schools and masters of Chinese art from turn of 20th century to present, with focus on interaction with foreign cultures and issues of self-identity, assimilation, modernity, tradition, and continuity. Consideration of recent developments in Chinese art in global context. Concurrently scheduled with course C148E. S/U or letter grading.

**C248F. Advanced Chinese Painting. (4)** Lecture, three hours. Examination of classical painting of imperial China through theory and practice. Concurrently scheduled with course C148F. S/U or letter grading.

**C248G. Gardens in Chinese Art and Culture. (4)** Lecture, three hours. Overview of practice, theory, and representation of Chinese gardens in their historical, philosophical, artistic, social, and cultural contexts through literary writings, paintings, and aspects of material culture. Concurrently scheduled with course C148G. S/U or letter grading.

**C249A. Selected Topics in Chinese Art. (4)** Lecture, three hours. Variable topics in Chinese art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C149. S/U or letter grading.

**249B. Chinese Art. (4)** Seminar, three hours. Advanced studies in secular and religious artistic traditions of China. May be repeated for credit with consent of adviser. S/U or letter grading.

**C250. Advanced Japanese Art. (4)** Lecture, three hours. Requisite: course 150A. Study in Japanese painting and sculpture. Concurrently scheduled with course C150B. S/U or letter grading.

**C251A. Selected Topics in Japanese Art. (4)** Lecture, three hours; discussion, one hour (when scheduled). Variable topics in Japanese art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C151. S/U or letter grading.

**251B. Japanese Art. (4)** Lecture, three hours. Advanced studies in secular and religious artistic traditions of Japan. May be repeated for credit with consent of adviser. S/U or letter grading.

**C252A. History of Korean Painting. (4)** Lecture, three hours. Korean painting history from Three Kingdoms period to 19th century, examined within cultural and sociopolitical contexts. Special emphasis on diversity of topics and social status of artists during Choson dynasty (1392 to 1910). Concurrently scheduled with course C152B. S/U or letter grading.

**C252B. History of Korean Ceramics. (4)** Lecture, three hours. History of Korean ceramics from Neolithic period to 19th century, with special emphasis on technological and stylistic developments. Concurrently scheduled with course C152C. S/U or letter grading.

**C252C. History of Korean Buddhist Art. (4)** Lecture, three hours. History of Korean Buddhist art from Three Kingdoms period to Choson dynasty, with special emphasis on Buddhist iconography and relationship between sculpture, painting, and architecture. Concurrently scheduled with course C152D. S/U or letter grading.

**C253A. Selected Topics in Korean Art. (4)** Lecture, three hours. Variable topics in Korean art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C153. S/U or letter grading.

**253B. Selected Topics in Korean Art. (4)** Lecture, three hours. Studies of Korean art under different art-historical perspectives, methods, and theories. Individual studies, with emphasis on professional presentation. Group studies may be linked to exhibition projects. May be repeated with consent of instructor. S/U or letter grading.

**C254A. Advanced Indian Art. (4)** Lecture, three hours. Requisite: course 154A. Study in Indian sculpture and architecture. Concurrently scheduled with course C154C. S/U or letter grading.

**254B. Modern and Contemporary South Asian Art. (4)** Lecture, three hours. Topics in modern and contemporary South Asian art from 1900 to present. Letter grading.

**C255A. Selected Topics in South and Southeast Asian Art. (4)** Lecture, three hours. Variable topics in South and Southeast Asian art that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C155. S/U or letter grading.

**255B. Indian Art. (4)** Lecture, two hours. Advanced studies in secular and religious artistic traditions of India. May be repeated for credit with consent of adviser. S/U or letter grading.

**C258A. Selected Topics in Asian Arts and Architecture. (4)** Lecture, three hours. Variable topics in Asian arts and architecture that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C158A. S/U or letter grading.

**M258B. Topics in Asian Archaeology. (4)** (Same as Anthropology M216.) Seminar, three hours. Designed for graduate students. Topics may include identification of ethnic groups in archaeology, archaeology of religion, archaeological reflections of commerce and trade and their influence on social development, archaeology of language dispersal, cultural contact and nature of cultural influence. S/U or letter grading.

**258C. Fieldwork in Archaeology. (2 to 8)** Fieldwork, to be arranged. Participation in archaeological excavations or other archaeological research under supervision of staff. May be repeated for credit with consent of adviser. S/U or letter grading.

**C260A. Art and Empire. (4)** Lecture, three hours; discussion, one hour (when scheduled). Examination of relationship between art and imperial ideologies and introduction to current issues in colonial studies and postcolonial criticism. Concurrently scheduled with course C160. S/U or letter grading.

**260B. Problems in Postcolonial Criticism. (4)** Seminar, three hours. Advanced study of current theoretical debates concerning colonial and postcolonial history and society. Letter grading.

**C269. Selected Topics in Architectural History.** (4) Lecture, three hours. Variable topics in architectural history that reflect interests of individual regular and/or visiting faculty members. May be repeated twice for credit. Concurrently scheduled with course C169. S/U or letter grading.

**C270A. Museum Studies.** (4) Lecture, three hours; discussion, one hour (when scheduled). Introduction to museology as critical practice, with emphasis on history and theory of museums and impact of culture and society on current museum theory and practice. Concurrently scheduled with course C170A. S/U or letter grading.

**C270B. Museum Studies Practicum.** (2 to 4) Lecture, three hours. On-site examination and discussion of selected artworks, exhibitions, and associated published and distributed materials, and of museum and gallery institutions, practices, and policies. Concurrently scheduled with course C170B. Letter grading.

**C271. Selected Topics in Museum Studies.** (4) Seminar, three hours. Variable topics in museum studies that reflect interests of individual regular and/or visiting faculty members. May be repeated for credit with topic change. Concurrently scheduled with course C171. S/U or letter grading.

**C272A. Preservation of Art.** (4) Lecture, three hours. Designed for anthropology, archaeology, and art history graduate students. Introduction to preservation of cultural heritage materials, including what should be preserved and why, as well as who should be involved in decision-making process. Discussion of issues of preservation and restoration of these cultural heritage materials both in museum and outdoor environment contexts. Materials and techniques used to make cultural heritage materials, in relation to preservation efforts needed to prevent decay and loss. Introduction to examples of conservation issues related to sites, buildings, monuments, and collections. Ethical and contextual aspects with reference to changing values, illustrating how cultural materials may have been treated differently according to those values. Concurrently scheduled with course C172A. S/U or letter grading.

**M272B. Principles, Practice, and Ethics in Conservation of Cultural Heritage.** (4) (Formerly numbered 272B.) (Same as Conservation M221.) Seminar, three hours. Introduction to preservation of cultural heritage materials, including what should be preserved and why, as well as who should be involved in decision-making process. Use of several examples of issues and problems involved in preservation of works of art, from L.A. Murals to Sistine Chapel, from ancient wall paintings to Statue of Liberty. Discussion of issues of preservation and restoration of these cultural heritage materials both in museum and outdoor environment contexts. Materials and techniques used to make cultural heritage materials, in relation to preservation efforts needed to prevent decay and loss. Introduction to examples of conservation issues related to sites, buildings, monuments, and collections. Ethical and contextual aspects with reference to changing values in conservation of cultural materials, illustrating how cultural materials may have been treated differently according to those values. S/U or letter grading.

**C272C. Art: Fakes, Forgeries, and Authenticity.** (4) Lecture, three hours. Examination of concepts of authenticity, originality, fakes, and forgeries in art. Overview of problems inherent in concept of authenticity and description of many examples of problems related to this concept in series of discussions based on objects from variety of cultures. Introduction to subject of fakes and account of three different areas of connoisseurship that are essential component of production, study, and scientific examination of fakes. Nature of art connoisseurship described in many examples from Renaissance and earlier panel paintings, as well as antiquities and traditional African arts. Background of art restoration and art conservation discussed in relationship to authenticity and technical studies. Scientific tools that form basis of another kind of connoisseurship described in terms of dating techniques that can be applied directly to works of art and technical methods by which material constituents of works of art are studied. Concurrently scheduled with course C172B. S/U or letter grading.

**273. Studies in Materials and Production of Artworks.** (4) Seminar, three hours. Designed to expose students to material properties and technical production issues related to making of artworks. Introduction to processes of construction, fabrication, maintenance, preservation, and more. Hands-on demonstrations and workshops to deepen understanding of significance of choices that artists make in choice of materials. Processes of making that can impact final physical forms as well as aesthetic meanings that can attach to it. Combination of theoretical, ethical, and practical questions that confront conservators as well as those specializing in technical art history. S/U or letter grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Art History.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Designed for graduate students. Required of all new teaching assistants during Fall Quarter of their teaching assistant appointment. Workshop/seminar in teaching techniques and pedagogical issues, consisting of readings, discussions, and guest speakers on selected topics. May not be applied toward MA or PhD course requirements. S/U grading.

**496. Teaching with Technology.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Designed for graduate students. Introduction to technological support available to new departmental teaching assistants. Topics include exploring functions of teaching assistant archive, CCLE, MyUCLA, Gradebook, and Turnitin; and ways to efficiently use these tools. Introduction to lesson planning and ways to establish effective teaching strategies in and out of classroom. May not be applied toward MA or PhD course requirements. S/U grading.

**501. Cooperative Program.** (2 to 8) Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research.** (2 to 8) Tutorial, to be arranged. May be repeated for credit with consent of adviser. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations.** (2 to 12) Tutorial, to be arranged. S/U grading.

**598. Research for and Preparation of MA Thesis.** (2 to 12) Tutorial, to be arranged. S/U grading.

**599. Research for and Preparation of PhD Dissertation.** (2 to 12) Tutorial, to be arranged. S/U grading.

## Arts and Architecture Lower-Division Courses

**10. Arts Encounters: Exploring Arts Literacy in 21st Century.** (5) Lecture, four hours; discussion, one hour; field trips, three hours; outside study, seven hours. Through series of direct encounters with art and artists across global range of practices, course equips students with kinds of critical skills that enhance their understanding of, and sharpen their appetite for, wide range of artistic practices. Attendance at performance/art events outside normal class schedule is mandatory. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Selected Topics in Arts.** (4) Lecture, three to six hours; discussion and/or laboratory, two to three hours (when scheduled); outside study, six to nine hours. Selected topics in arts explored through variety of approaches that may include projects, readings, studio work, performance, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for maximum of 8 units. P/NP or letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

## ARTS AND ARCHITECTURE SCHOOLWIDE PROGRAMS

*School of the Arts and Architecture*

2200 Broad Art Center

Box 951620

Los Angeles, CA 90095-1620

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## ARTS AND ARCHITECTURE

*School of the Arts and Architecture*

2200 Broad Art Center

Box 951620

Los Angeles, CA 90095-1620

**School of the Arts and Architecture**

310-206-3564

**School e-mail**

## Overview

The School of the Arts and Architecture offers courses as part of the schoolwide curriculum.

## Overview

Highly motivated students who find that no single major accommodates their specific interest in a given subject may propose designing their



own major. Proposals are prepared with faculty guidance and sponsorship and are thoroughly examined for cogency, completeness, and academic merit.

## Undergraduate Major

### Individual Field BA in Arts and Architecture

Highly motivated students who find that no single major accommodates their specific interest in a given subject may propose designing their own major. Proposals are prepared with faculty guidance and sponsorship and are thoroughly examined for cogency, completeness, and academic merit.

### Learning Outcomes

The Individual Field major has the following learning outcomes:

- Demonstrated understanding of how the research and creative methodologies of different disciplines can interface with and illuminate the understanding of another
- Design of a course of study that shows a deep understanding of how the disparate disciplines are connected
- Demonstrated ability to read in the scholarly discourse and style of different disciplines
- Development of voice in written thesis for an interdisciplinary audience
- Written thesis that demonstrates mastery of diverse fields as a result of research sources and production of scholarly and creative work outside of traditionally defined academic boundaries
- Production of a final paper or creative project that synthesizes and integrates a principal theme or themes common to coursework and diverse fields of knowledge

## ASIAN AMERICAN STUDIES

*College of Letters and Science*

3332 Rolfe Hall  
Box 957225  
Los Angeles, CA 90095-7225

**Asian American Studies**  
310-267-5592

**Natalie R. Masuoka, PhD, Chair**

## Faculty Roster

### Professors

Keith Lujan Camacho, PhD  
Michelle L. Caswell, PhD  
Mitchell J. Chang, PhD  
C. Cindy Fan, PhD  
Gilbert C. Gee, PhD  
Grace Kyungwon Hong, PhD  
Jerry Kang, JD  
Vinay Lal, PhD  
Anna S. Lau, PhD

Jinqi Ling, PhD  
Purnima Mankekar, PhD  
Valerie J. Matsumoto, PhD (*George and Sakaye Aratani Professor of Japanese American Incarceration, Redress, and Community*)  
Vinit Mukhija, PhD  
Thu-huong Nguyen-vo, PhD  
Kyeyoung R. Park, PhD (*Korea Times–Hankook Ilbo Endowed Professor of Korean American Studies and Law*)  
Shu-mei Shih, PhD (*Irving and Jean Stone Professor*)  
Renee E. Tajima-Peña, BA (*UCLA Alumni and Friends of Japanese Ancestry Professor of Japanese American Studies*)  
Karen N. Umamoto, PhD  
David K. Yoo, PhD  
Min Zhou, PhD

### Professors Emeriti

Marjorie Kagawa-Singer, RN, PhD  
Snehendu B. Kar, DrPH, MSc  
Robert A. Nakamura, MFA (*UCLA Alumni and Friends of Japanese Ancestry Professor Emeritus of Japanese American Studies*)  
Paul M. Ong, PhD

### Associate Professors

Victor Bascara, PhD  
Lucy M. Burns, PhD  
Jennifer J. Chun, PhD  
Evyne Lê Espiritu Gandhi, PhD  
Natalie R. Masuoka, PhD  
Robert Chao Romero, JD, PhD

### Assistant Professors

Juliann T. Anesi, PhD  
Jolie Chea, PhD  
Loubna N. Qutami, PhD  
Cindy C. Sangalang, PhD  
Lee Ann S. Wang, PhD

### Adjunct Professor

Benjamin K.P. Woo, MD

### Adjunct Associate Professor

Tritia Toyota, PhD

## Overview

The Department of Asian American Studies, founded in 2004, promotes the study of Asian and Pacific Islander Americans across a number of fields and disciplines.

Following the tradition of civil rights struggles of the 1960s and 1970s, the department values the social relevance of academy-based knowledge production, as well as the connection between academia, the Asian and Pacific Islander community, and other disadvantaged social groups. Faculty members in the department are likewise committed to offering a broad, inclusive, and flexible curriculum designed to meet maximum student needs, with emphasis on close mentorship, collaborative teaching, and engaged scholarship.

The department offers a Bachelor of Arts (BA) degree, undergraduate minors in Asian American Studies and Pilipino Studies, a Master of Arts (MA) degree, and two concurrent degree programs: Asian American Studies MA/Master of Public Health with the Fielding School of

Public Health Community Health Sciences Department and Asian American Studies MA/Social Welfare MSW with the Luskin School of Public Affairs Social Welfare Department. The Asian American Studies educational program performs the following missions: conducts teaching that enables students to learn, think, and practice in a nurturing and intellectually stimulating environment; equips students with theoretical and practical knowledge, as well as analytical and communicative skills that reflect the excellence of the faculty; and prepares students either for advanced graduate studies or for life after college as artists, citizens, entrepreneurs, political leaders, and professionals.

As an interdisciplinary field, the Asian American Studies curriculum examines the contemporary realities, diverse experiences, and histories of Asian and Pacific Islander Americans. The topical range of such examination includes community work and development, cultural production (including digital media and creative expression), gender, and generational dynamics, immigration and diaspora, political participation, social activism, and transnational encounters.

The teaching and research methods used by faculty members in the department are interdisciplinary and comparative in nature, with a healthy mix of quantitative, qualitative, interpretive, and applied approaches. These methods develop out of dynamic cross-fertilization among faculty expertise that registers both major intellectual shifts in the field and notable trends from disparate disciplines, professional practices, and epistemological traditions.

## Undergraduate Major

### Asian American Studies BA

The BA program in Asian American Studies provides a general introduction for students who anticipate advanced work at the graduate level or careers in research, public service, and community work related to Asian and Pacific Islander Americans.

### Capstone Major

The Asian American Studies major is a designated capstone major. Students are required to complete either a community-based applied team research project or an independent scholarly or creative expression project. Those who select the community-based project are expected to use their scholarly knowledge and analytical skills to examine problems facing Asian and Pacific Islander American populations, think creatively and innovatively about evidence-based solutions, and to produce reports that benefit community stakeholders. Those who select to design and complete an independent scholarly or creative expression project pursue a key idea or theme of personal interest that is related to their prior coursework and to the experiences and realities of Asian and Pacific Islander Americans. Through their capstone work, all students are expected to demonstrate their skills in using and synthesizing knowledge gained in disparate courses and communicating effectively their findings and

conclusions in a final paper, report, or project and in a public forum.

## Learning Outcomes

The Asian American Studies major has the following learning outcomes:

- Development of literacy in foundational histories, emergent and transnational directions, theories, geographies, and ideas of ethnic studies
- Understanding of past and present Asian American and Pacific Islander issues, communities, social movements, geographies, and thought
- Curation of skills in critical and interdisciplinary methodological training in archival research, oral history, ethnography, creative production, data collection and analysis, etc.
- Engagement with pedagogies that examine Asian American and Pacific Islander and ethnic studies decolonial epistemologies and creative expressions
- Centering of the relationship between theory and community engagement, social justice activism, transformative change, and movement building

## Entry to the Major

### Admission

An overall grade-point average of 2.0 or better is required for admission to the major.

### Transfer Students

Transfer applicants to the Asian American Studies major with 90 or more units must complete the following introductory course if possible prior to admission to UCLA: one lower-division Asian American studies course or one course that focuses on Asian Americans.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Two courses from Asian American Studies 10 or 10W, 20 or 20W, 30 or 30W, 40 or 40W, 50 or 50W.

### The Major

*Required:* A total of 12 upper-division courses, including one course from each of the following four categories: (1) *Asian American and Pacific Islander Communities and Social Movements* selected from Asian American Studies M108, 109, 110, 113, M116, M119, 130A, M130B, M130C, 131A, 131B, 131C, 132A, 133, 134, 135, 141AX, 141BX, 143B, M143C, 171F, 177, 187C, 191C; (2) *Global and Transnational Perspectives* selected from Asian American Studies 111, 123, 125, 170, 171A, 171B, 171C, M171D, 171E, 171F, M172A, 172B, 172C, M173, 174B, 175B, 176, 178, M179; (3) *Comparative and Intersectional Ethnic Studies* selected from Asian American Studies 109, 110, M112A, M112B, 113, M114, 115, M117, 118, 122A, M124, 126, M128, M129, M161, M162, M163, M164, M165, M166A, M166B, M166C, 167, M169, 172B, 174A, 175A, M191F; (4) *Methodology,*

*Creative Production, and Community Engagement* selected from Asian American Studies 103, 104A, 104B, 105, 107, 112C, M119, 120, 121, 122B, 140XP, 141AX, 141BX, C142A, C142B, C142C, M143A, M160, M168, 172C, 187A, 191A, 198A, 198B, 198C, 199; two additional courses from any of the four upper-division categories; five elective courses selected from Asian American Studies 103 through 199; and one capstone project course selected from Asian American Studies 185 or 186.

### Honors Program

Through the Asian American Studies honors program, Asian American Studies majors undertake a year-long thesis or its equivalent with the guidance and supervision of a faculty member. Successful completion of the departmental honors program is indicated on the transcript. For additional information about the departmental honors program, contact the undergraduate academic adviser.

Honors students must take the Asian American Studies 198A, 198B, and 198C sequence in which they write a thesis or its equivalent under the direction of a faculty member.

## Policies

### The Major

Courses may only satisfy one of the four upper-division categories in the major at a time. No course may be applied to more than one category.

No more than 4 graded units of courses numbered 192 and 196 may be applied toward the major.

No more than 12 graded units of courses numbered 195, 197, 198, and 199 may be applied toward the major.

Each course applied toward the major must be taken for a letter grade, each must be at least 4 units, and students must have an overall grade-point average of 2.0 or better.

### Honors Program

For additional information about the departmental honors program, contact the undergraduate academic adviser.

### Admission

The honors program is open to junior and senior Asian American Studies majors who have (1) 90 or more total units, (2) a grade-point average of 3.5 or better in upper-division Asian American Studies courses and an overall cumulative GPA of 3.0 or better, and (3) completed two lower-division Asian American Studies courses.

## Undergraduate Minors

### Asian American Studies Minor

The Asian American Studies minor is designed for students who wish to gain understanding of and competence in Asian American Studies.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better, have completed two lower-division Asian American Studies courses, and file a petition with the Asian American Studies student adviser, 3333 Rolfe Hall.

## The Minor

*Required Lower-Division Courses (10 units):* Two courses from Asian American Studies 10 or 10W, 20 or 20W, 30 or 30W, 40 or 40W, 50 or 50W.

*Required Upper-Division Courses (20 units):* A total of five upper-division courses, including one course from each of the following four categories: (1) *Asian American and Pacific Islander Communities and Social Movements* selected from Asian American Studies M108, 109, 110, 113, M116, M119, 130A, M130B, M130C, 131A, 131B, 131C, 132A, 133, 134, 135, 141AX, 141BX, 143B, M143C, 171F, 177, 187C, 191C; (2) *Global and Transnational Perspectives* selected from Asian American Studies 111, 123, 125, 170, 171A, 171B, 171C, M171D, 171E, 171F, M172A, 172B, 172C, M173, 174B, 175B, 176, 178, M179; (3) *Comparative and Intersectional Ethnic Studies* selected from Asian American Studies 109, 110, M112A, M112B, 113, M114, 115, M117, 118, 122A, M124, 126, M128, M129, M161, M162, M163, M164, M165, M166A, M166B, M166C, 167, M169, 172B, 174A, 175A, M191F; (4) *Methodology, Creative Production, and Community Engagement* selected from Asian American Studies 103, 104A, 104B, 105, 107, 112C, M119, 120, 121, 122B, 140XP, 141AX, 141BX, C142A, C142B, C142C, M143A, M160, M168, 172C, 187A, 191A, 198A, 198B, 198C, 199; and one elective course selected from Asian American Studies 103 through M191F, 195, or M195CE.

## Policies

Courses may only satisfy one of the four upper-division categories in the major at a time. No course may be applied to more than one category.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, each must be at least 4 units, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Pilipino Studies Minor

The Pilipino Studies minor produces graduates competent in histories and contemporary experiences of Filipinos in the U.S. and elsewhere in the world. Student understanding of historical and contemporary histories of Filipinos is grounded in questions of equality, social justice, and disparity, which supply a vocabulary and critical thinking skills necessary to engage with issues including class, cultural production,

gender, identity formation, labor, migration, and representation. The minor consists of broad courses that study national and diasporic identities as a social formation rather than an innate and unchanging biological assignment. As an interdisciplinary field, Filipino studies draws from American studies, anthropology, Asian studies, Asian American studies, ethnic studies, history, literary and performance studies, Philippine studies, and sociology.

## Admission

To enter the minor, students must have an overall grade-point average (GPA) of 2.0 or better, have completed the two lower-division minor courses with a GPA of 2.0 or better, and file a petition with the department undergraduate academic adviser, 3339 Rolfe Hall.

## The Minor

*Required Lower-Division Courses (10 units):* One course from Asian American Studies 10 or 10W, 20 or 20W, 30 or 30W, 40 or 40W, 50 or 50W, and one course from Filipino 1, 2, 3, 4, 5, 6, or History 9E.

*Required Upper-Division Courses (20 units):* One course from Asian American Studies 133, M171D, 176; one course from Anthropology 116S, History 176A, 176B, 176C, Filipino 170; three additional upper-division courses from the lists above or from Filipino 152, 155, 170, Geography 145.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

# Graduate Major

## Asian American Studies MA

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Programs

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Asian American Studies MA/Master of Public Health
- Asian American Studies MA/Master of Social Welfare

# Asian American Studies

## Lower-Division Courses

**10. History of Asian Americans. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 10W. Multidisciplinary examination of history of Asians and Pacific Islanders in U.S. P/NP or letter grading.

**10W. History of Asian Americans. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 10. Multidisciplinary examination of history of Asians and Pacific Islanders in U.S. Satisfies Writing II requirement. Letter grading.

**M18. Leadership and Student-Initiated Retention. (2)** (Same as African American Studies M18, American Indian Studies M18, and Chicana/o and Central American Studies M18.) Seminar, two hours. Limited to freshmen/sophomores/first-year transfer students. Not open for credit to students with credit for course M168. Exploration of issues in retention at UCLA through lens of student-initiated and student-run programs, efforts, activities, and services. Focus on populations with historically low graduation rates targeted by Campus Retention Committee. May not be applied toward departmental major or minor elective requirements. May be repeated once for credit. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Contemporary Asian American Communities. (5)** Lecture, three hours; discussion, one hour. Multidisciplinary introduction to contemporary Asian American populations and communities in U.S. Topics include contemporary immigration, demographic trends, sociocultural, economic, and political issues, and interethnic relations. P/NP or letter grading.

**20W. Contemporary Asian American Communities. (5)** Lecture, three hours; discussion, two hours. Requisite: English Composition 3. Not open for credit to students with credit for course 20. Multidisciplinary introduction to contemporary Asian American populations and communities in U.S. Topics include contemporary immigration, demographic trends, sociocultural, economic, and political issues, and interethnic relations. Satisfies Writing II requirement. Letter grading.

**30. Asian American Literature and Culture. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 30W. Multidisciplinary introduction to Asian American literature and cultural production. Exploration of cultural politics and creative expression of Asia Pacific Americans in their own terms and in context of emergence and reception of artistic works—from personal, local, regional, national, and to global/imperial. Implicit and explicit comparison of Asian American cultural production to diverse experiences of other aggregated groupings, historic and emergent. Addresses intersectional issues of gendering, sexuality, non-secularity, and socioeconomic conditions. P/NP or letter grading.

**30W. Asian American Literature and Culture. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: English Composition 3. Not open for credit to students with credit for course 30. Multidisciplinary introduction to Asian American literature and cultural production. Exploration of cultural politics and creative expression of Asia Pacific Americans in their own terms and in context of emergence and reception of artistic works—from personal, local, regional, national, and to global/imperial. Implicit and explicit comparison of Asian American cultural production to diverse experiences of other aggregated groupings, historic and emergent. Addresses intersectional issues of gendering, sexuality, non-secularity, and socioeconomic conditions. Satisfies Writing II requirement. Letter grading.

**40. Asian American Movement. (5)** Lecture, three hours; discussion, one hour. Using Asian American movement of late 1960s and 1970s as lens, introduction to social history methods, including role of oral history, documentary films, and archival history, and analysis of primary and secondary sources. Asian American movement situated within larger frame of social change of era and interpretation of nation and society through lives of ordinary men and women. Exploration of campus- and community-based activism, service learning, and civic engagement. P/NP or letter grading.

**40W. Asian American Movement. (5)** Lecture, three hours; discussion, two hours. Requisite: English Composition 3. Not open for credit to students with credit for course 40. Using Asian American movement of late 1960s and 1970s as lens, introduction to social history methods, including role of oral history, documentary films, and archival history, and analysis of primary and secondary sources. Asian American movement situated within larger frame of social change of era and interpretation of nation and society through lives of ordinary men and women. Exploration of campus- and community-based activism, service learning, and civic engagement. Satisfies Writing II requirement. Letter grading.

**50. Asian American Women. (5)** Lecture, three hours; discussion, one hour. Overview of history of feminist theory and intersection of gender, class, race/ethnicity from cross-cultural perspectives, with focus on Asian American women's lived experiences in U.S. Topics include Asian American women's roles in family life, work, community organization, social change, and cultural creativity. Examination of broader structural forces that affect women in society, such as racialization, immigration, global capitalism, colonialism and postcolonialism, and social movements. P/NP or letter grading.

**50W. Asian American Women. (5)** Lecture, three hours; discussion, two hours. Requisite: English Composition 3. Not open for credit to students with credit for course 50. Overview of history of feminist theory and intersection of gender, class, race/ethnicity from cross-cultural perspectives, with focus on Asian American women's lived experiences in U.S. Topics include Asian American women's roles in family life, work, community organization, social change, and cultural creativity. Examination of broader structural forces that affect women in society, such as racialization, immigration, global capitalism, colonialism and postcolonialism, and social movements. Satisfies Writing II requirement. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics in Asian American Studies. (1 to 2)** Tutorial, one to two hours. Current topics and particular research methods in Asian American studies through readings and other assignments. May be repeated for credit. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.



## Upper-Division Courses

**103. Social Science Research Methods. (4)** Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Introduction to fundamentals of conducting social research on Asian Americans, providing experience in using some research methods and exercises in evaluating nature and quality of scientific research on Asian American issues. P/NP or letter grading.

**104A. Field Studies Methods in Asian Pacific Communities. (4)** Lecture, three hours. Preparation: one course from 101 through M191F. Development of community profiles on Asian Pacific American communities of students' choice, using various field studies techniques of data collection. P/NP or letter grading.

**104B. Special Internships in Asian Pacific Communities. (4)** Fieldwork, eight hours minimum. Requisite: course 104A or another Asian American studies course (except 199). Integrates academic and empirical work by providing students challenge of performing public service and community work in Asian Pacific or other multicultural communities, and of bringing their ongoing internship experiences back to classroom. May be repeated for credit. P/NP or letter grading.

**105. Historical Research Methods. (4)** Seminar, three hours. Requisite: course 10. Introduction to methods used to locate and analyze source materials for research on Asian American history. Historians have used wide range of sources that may include archival materials, oral history, material culture, and more. P/NP or letter grading.

**107. Scholarly and Creative Communication in Asian American Studies. (4)** Lecture, three hours. Designed for advanced junior/senior Asian American Studies majors and minors. Examination of alternative modes of expression to effectively reach academic and nonacademic audiences, including written text, visual materials, and performance. Exploration of scholarly works by looking at how narratives are developed, ideas and values are framed, or knowledge is generated and transmitted, through either traditional or electronic mediums. Investigation of discursive and popular forms, stylistic patterns, and communicative practices. Themes and content vary by term. Independent research related to course objective may be pursued with guidance from instructor. Sharing and critiquing of other student works in progress. P/NP or letter grading.

**M108. Policy, Planning, and Community. (4)** (Same as Urban Planning M122.) Lecture, three hours; field laboratory. Project-oriented methods course on conducting needs assessment in Asian American communities. Geographic information systems to be used to define problems and needs. Letter grading.

**109. Gender Violence, Policing, and Law. (4)** Seminar, three hours. Examination of race, gender, and sexuality in modern American legal punishment, policing, and borders. Draws from feminist of color and indigenous feminist anti-violence theories to trace relationship between protection, rescue, and punishment in Western humanitarianism, liberalism, nation-state building, colonialism, and slavery. Builds on community responses and strategies, creative works, and community alternative. P/NP or letter grading.

**110. American Immigration Policy. (4)** Seminar, three hours. Examination of determinants leading to U.S. immigration policy over time and its implications for demographics and political culture. Survey of issues and policies aimed at citizenship and immigrant integration. P/NP or letter grading.

**111. Asian Americans and War. (4)** Lecture, three hours. Interdisciplinary examination of role that war has played in history and culture of Asian Americans, drawing on diverse set of materials ranging from Asian American literature, Hollywood movies, and wartime propaganda to political speeches, Supreme Court decisions, and protest culture, to evaluate relationship between Asian American communities and geopolitical conflicts from late-19th century to contemporary period. P/NP or letter grading.

**M112A. Historical Survey of Asian American Literature. (5)** (Same as English M102A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3 or 3H. Survey of Asian American literature either produced from or thematically reflecting pre-1980 period. Issues include immigration, diaspora, generational conflict, appropriation of cultural traditions, ethnic/gender formation, interethnic dynamics, and social movement. Works by such authors as Edith Eaton, Younghill Kang, Carlos Bulosan, Hisaye Yamamoto, John Okada, Frank Chin, and Maxine Hong Kingston. P/NP or letter grading.

**M112B. Contemporary Asian American Literary Issues and Criticism. (5)** (Same as English M102B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3 or 3H. Survey of post-1980 Asian American literature that explores key literary and critical issues, such as race and geography, aesthetics and activism, cultural work and immigrant labor, kinship and sexuality, model minority and Orientalism, and meat versus rice, in study of novels, poetry, performance, memoirs, and essays. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**112C. Asian American Creative Writing. (4)** Seminar, four hours. Enforced prerequisite: English Composition 3 or 3H. Designed for juniors/seniors. Examination of margin of geographic and psychic spaces that Asian Americans inhabit outside American mainstream and specific factors, such as generation, ethnicity, gender, class, and sexual orientation, that shape individual's unique margin. Balanced blend of reading and creative writing. P/NP or letter grading.

**113. Asian Americans and Law. (4)** Lecture, four hours. Introduction to Asian American political identity and critical race theory—study of race and representation in making of modern American law and legal meaning. Survey of federal cases, legislation, and regulations pertaining to race, gender, and sexuality in Asian American community formations and relationality towards communities of color and indigenous communities, and making of nation-state. P/NP or letter grading.

**M114. Asian American Education and Schooling. (4)** (Same as Education M103.) Seminar, four hours. Examination of existing body of research from various disciplines on Asian/Pacific American educational experiences. Letter grading.

**115. Women and Community in Asian American Studies. (4)** Lecture, three hours. Condition of Asian women in America. Topics include women in Asian American history, racial and cultural stereotypes, and contemporary issues. Methodological approaches to study of gender issues presented and evaluated. P/NP or letter grading.

**M116. Asian American Social Movements. (4)** (Same as Labor Studies M116.) Lecture, three hours. Designed for juniors/seniors. Examination of several dimensions of Asian American social movements, including grassroots, mass movement character, political and social vision, and social and political relevance to current issues. How movement participants linked struggle for change with own personal transformation and growth. P/NP or letter grading.

**M117. Asian American Personality and Mental Health. (4)** (Same as Psychology M107.) Lecture, three hours. Requisite: Psychology 10. Foundations of personality development and mental health among Asian Americans. Topics include culture, family patterns, achievements, stressors, resources, and immigrant and minority group status. P/NP or letter grading.

**118. Asian American Religious History. (4)** Lecture, four hours. Examination of religion as thematic thread within context of Asian American history, primarily during period before World War II. Basic grounding in early Asian American history through exploration of role of religion in various communities. P/NP or letter grading.

**M119. Asian American and Pacific Islander Labor Issues. (4)** (Same as Labor Studies M119.) Lecture, three hours. Examination of historical and contemporary labor issues in Asian and Pacific Islander American communities, with emphasis on key role that

Asian and Pacific Islander American students can play in supporting labor struggles of low-income immigrants. P/NP or letter grading.

**120. Representation and Resistance: Asian American Independent Cinema. (4)** Lecture/screenings, three hours. Exploration of relationship between content, social context, and production processes in independently produced films and digital media by and about Asian American filmmakers, from social change documentaries to theatrical features and online talent. P/NP or letter grading.

**121. Exploring Asian American Theater. (4)** Lecture, four hours. Study of Asian American plays; students required to compose one act based on their own experience using lessons learned in class. Exploration of scene study and acting exercises. P/NP or letter grading.

**122A. Indigeneity, Empire, and Resistance in Pacific Islands. (4)** Lecture, three hours. Introduction to indigenous and colonial histories of Pacific Islands. Discussions, film screenings, guest speakers, and reading assignments, with focus on issues of cultural survival, empire, indigeneity, migration, resistance, sovereignty, and war. P/NP or letter grading.

**122B. Gender and Film in Pacific. (4)** Lecture, three hours. Requisite: course 122A. Exploration of rise of film in Pacific Islands during 20th century, with attention to politics of gender, history, and representation, to engage students in textual and visual readings of feature-length films about Pacific. Discussions, film screenings, and guest speakers, with focus on aesthetic, cultural, economic, gendered, historical, and political dimensions of films. P/NP or letter grading.

**123. Cultures of/against Empire. (4)** Seminar, three hours. Critical concepts and cultural practices linking Asian American studies to study of U.S. cultures of imperialism. Course begins with premise that Asian American studies contribute distinctly to contemporary scholarship on U.S. Empire. Examination of political and intellectual coalitions toward which Asian American studies critique builds. Emphasis on works that approach study of empire through comparative racial formation, postcolonialism, transnationalism, and studies of migration. P/NP or letter grading.

**M124. Comparative Racialization and Indigeneity. (4)** (Same as African American Studies M124.) Lecture, three hours. Examination of processes and histories of racialization and colonization in U.S. Discussions, film screenings, guest speakers, and reading assignments, with focus on issues of cultural survival, empire, indigeneity, migration, resistance, sovereignty, and war. P/NP or letter grading.

**125. Transpacific Literature and Theory. (4)** Seminar, three hours. Requisite: course 10, 10W, 20, 20W, 30, 30W, 40, 40W, 50, or 50W. In-depth analysis of Asian American and Pacific Islander novels and poetry in transpacific framework. Critical examination of how Asia, Americas, and Pacific Islands are linked through shared histories of U.S. imperialism, Asian migration, and indigenous sovereignty. P/NP or letter grading.

**126. Comparative Race and Indigeneity. (4)** Seminar, three hours. Preparation: one ethnic studies course. Analysis of race and indigeneity within comparative ethnic studies framework. Examination of how Asian, Pacific Islander, Black, indigenous, and Latinx identifiers are formed in relation to one another in U.S. and its territories. Interrogation of how communities are pitted against each other by structural antagonisms—such as war, imperialism, racial capitalism, settler colonialism, white supremacy, and heteropatriarchy—and theorizing of strategies for building solidarities across difference. Intersectional and interdisciplinary analysis of race and indigeneity in relation to gender, sexuality, and class, with texts from ethnic studies, gender studies, anthropology, sociology, history, cultural studies, and literature. P/NP or letter grading.

**M128. Participatory Action Research on Youth Organizing for Racial Justice. (4)** (Same as African American Studies M129B, American Indian Studies M129, Chicana/o and Central American Studies M129B, and Public Affairs M122.) Lecture, four hours. Students are trained to conduct participatory action research on grassroots youth organizing across Cali-

fornia. Students gain historical and theoretical background on multi-racial and inclusive organizing. Students learn how to collect and analyze data pertaining to pressing organizing issues. Study and critical analysis of youth organizing strategies. Weekly training modules on data collection and grassroots organizing strategies that prepare students for internships in grassroots youth organizing groups serving Asian American, Black, Latinx, and Native American communities. P/NP or letter grading.

**M129. Health Issues for Asian Americans and Pacific Islanders: Myth or Model? (4)** (Same as Community Health Sciences M140.) Lecture, three hours; fieldwork, one hour. Introductory overview of mental and physical health issues of Asian Americans and Pacific Islanders; identification of gaps in health status indicators and barriers to both care delivery and research for these populations. Letter grading.

**130A. Chinese American Experience. (4)** Lecture, three hours. Not open to freshmen. Survey of immigration history, settlement patterns, and experiences of Chinese Americans. Examination of historical and contemporary sociocultural, economic, and political issues as they affect status of Chinese Americans and their community. P/NP or letter grading.

**M130B. Chinese Immigrant Literature and Film. (4)** (Same as Chinese M153 and Comparative Literature M171.) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. In-depth look at Chinese immigrant experience by reading literature and watching films. Theories of diaspora, gender, and race to inform thinking and discussion of relevant issues. P/NP or letter grading.

**M130C. Chinese Immigration. (4)** (Same as Sociology M153.) Lecture, three hours; discussion, one hour. Survey of sociological studies of Chinese immigration, with focus on international context, organization, and institutions of Chinese America and its interactions with social environment. P/NP or letter grading.

**131A. Japanese American Experience. (4)** Lecture, three hours. Not open to freshmen. Survey of immigration history, settlement patterns, and experiences of Japanese Americans. Examination of historical and contemporary sociocultural, economic, and political issues as they affect status of Japanese Americans and their community. P/NP or letter grading.

**131B. Japanese Americans and Incarceration. (4)** Seminar, three to four hours. Requisite: course 10 or 10W. Designed for juniors/seniors. In-depth analysis of key literature about mass incarceration of Japanese Americans during 1940s. Immediate and long-range effects of internment. Emphasis on research. Original paper based on primary sources held by University of California required. Letter grading.

**131C. Japanese American Resettlement. (4)** Seminar, three hours. Requisite: course 10. In-depth analysis of key literature about resettlement of Japanese Americans during World War II. Development of original research paper based on primary sources. P/NP or letter grading.

**132A. Korean American Experience. (4)** Lecture, three hours. Not open to freshmen. Survey of immigration history, settlement patterns, and experiences of Korean Americans. Examination of historical and contemporary sociocultural, economic, and political issues as they affect status of Korean Americans and their community. P/NP or letter grading.

**133. Pilipino American Experience. (4)** Lecture, three hours. Not open to freshmen. Survey of immigration history, settlement patterns, and experiences of Pilipino Americans. Examination of historical and contemporary sociocultural, economic, and political issues as they affect status of Pilipino Americans and their community. P/NP or letter grading.

**134. Vietnamese American Experience. (4)** Lecture, three hours. Not open to freshmen. Survey of immigration history, settlement patterns, and experiences of Vietnamese Americans. Examination of historical and contemporary sociocultural, economic, and political issues as they affect status of Vietnamese Americans and their community. P/NP or letter grading.

**135. Southeast Asian Refugee Communities in U.S. (4)** Lecture, three hours. Survey of contemporary Southeast Asian American communities and examination of conditions that led to migration of almost two million people from Laos, Cambodia, and Vietnam with close attention to history of U.S. imperialism and Cold War politics. Screening of fiction and nonfiction films by and/or about Southeast Asian refugees. P/NP or letter grading.

**140XP. Power to People: Asian American and Pacific Islander Community-Based Learning. (4)** (Formerly numbered 140SL.) Lecture, two hours; fieldwork, four hours. Enforced requisite: course 10, 10W, 20, 20W, 30, 30W, 40, 40W, 50, or 50W. Service-learning course to engage and critically examine community organizing and community-based organizations (CBOs) in Asian American and Pacific Islander communities related to issues such as arts and culture, community health, and applied research. P/NP or letter grading.

**141AX. Asian American and Pacific Islander Leadership Development Project Part I: Leadership. (4)** (Formerly numbered 141A.) Lecture, three to four hours. Limited to juniors/seniors. First term of two-term series on leadership development, with focus on intellectual and practical learning of leadership concepts, models, and skills. In Progress grading (credit to be given only on completion of course 141BX).

**141BX. Asian American and Pacific Islander Leadership Development Project Part II: Field Studies. (4)** (Formerly numbered 141B.) Lecture, three hours; fieldwork, three hours. Enforced requisite: course 141AX. Limited to juniors/seniors. Second term of two-term series on leadership development, with focus on Asian American, Pacific Islander, and other ethnic communities in Los Angeles. Examination of different approaches and strategies to community building and maintenance. P/NP or letter grading.

**C142A. Ethnocommunications I: Introduction to Creating Community Media. (4)** Seminar, three hours. Strong verbal communication skills and familiarity with technology required. Introduction to social documentary theory and methodology. Through hands-on production, use of digital video to tell visual stories, reclaim history, and examine social issues related to diverse peoples, cultures, and communities. Viewing of films and interactive media for critique and discussion, guest speakers, basic instruction in use of digital video technology, and group and individual video projects. Concurrently scheduled with course C242A. P/NP or letter grading.

**C142B. Ethnocommunications II: Intermediate Creating Community Media. (4)** Seminar, three hours. Strong verbal communication skills and familiarity with technology required. Intermediate application of social documentary theory and methodology. Use of digital video to create new approaches to visual storytelling, reclaim history, and examine social issues related to diverse peoples, cultures, and communities. Continuing instruction in use of digital technology and concepts. Topics include videography, composition, sound recording, interviewing techniques, editing, and writing treatments. Completion of community-based documentary required. Concurrently scheduled with course C242B. P/NP or letter grading.

**C142C. Ethnocommunications III: Advanced Creating Community Media. (4)** Seminar, three hours. Enforced requisite: course C142B. Advanced application of social documentary theory and methodology. Continuing instruction in use of digital technology and concepts. Intensive instruction in proposal writing, videography, composition, sound recording, interviewing techniques, visual storytelling, and editing. Completion of community-based documentary suitable for public exhibition required. Concurrently scheduled with course C242C. P/NP or letter grading.

**M143A. Fieldwork in Asian American and Pacific Islander Communities. (4)** (Same as Anthropology M138Q.) Lecture, three hours; discussion, one hour. Introduction to qualitative research methods and application of techniques in data collection, analysis, and reporting. Critical reflection of issues related to identity, migration, multiculturalism, tourism, and indige-

nous rights. Field excursions and guest lecturers from local community included. Given in Hawai'i. P/NP or letter grading.

**143B. Politics of Race, Ethnicity, Migration, and Multiculturalism in Hawai'i. (4)** Lecture, three hours; discussion, one hour. Critical examination of historical and contemporary experiences of various people in Hawai'i. Investigation of historical, economic, and political contexts of migration and relations between indigenous peoples, migrants, and existing racial and ethnic groups. P/NP or letter grading.

**M143C. Ethnic Identity and Ethnic Relations in Hawai'i. (4)** (Same as Anthropology M168Q.) Lecture, three hours; discussion, one hour. Continuing construction and expression of ethnic identity in various cultural forms and social contexts in Hawai'i. Overview of theoretical approaches to and basic concepts in study of ethnic identity and ethnic relations. Discussion of historical and contemporary aspects of ethnic identity and ethnic relations in Hawai'i. Given in Hawai'i. P/NP or letter grading.

**M160. Culture, Media, and Los Angeles. (6)** (Same as African American Studies M102 and Honors Collegium M102.) Lecture, four hours; screenings, two hours. Designed for juniors/seniors. Role of media in society and its influence on contemporary cultural environment, specifically in Los Angeles; issues of representation as they pertain to race, ethnicity, gender, and sexuality. P/NP or letter grading.

**M161. Ethnic, Cultural, and Gender Issues in America's Healthcare Systems. (4)** (Same as Health Policy M110.) Lecture, three hours. Designed for juniors/seniors. Introduction to study of gender, ethnicity, and cultural diversity related to health status and healthcare delivery in U.S. Letter grading.

**M162. Class and Gender in Care Work. (4)** (Same as Chicana/o and Central American Studies M128B, Gender Studies M140C, and Labor Studies M143.) Lecture, three hours; discussion, one hour. Examination of how gender, race, class, and citizenship status shape domestic labor in U.S. Examination of domestic worker experiences through film, fiction, and traditional scholarship. Investigation of why domestic work is in high demand, who employs domestic workers, and why immigrants and women of color make up large percentage of this workforce. Exploration of how domestic workers navigate pay and working conditions, and how they build community and family networks in shadows of their privileged employers. P/NP or letter grading.

**M163. Worker Center Movement: Next Wave Organizing for Justice for Immigrant Workers. (4)** (Same as African American Studies M167, Chicana/o and Central American Studies M130, and Labor Studies M167.) Seminar, three hours. Development of theoretical and practical understanding of worker center movement, with focus on historical factors that have led to emergence and growth of worker centers. Role of worker centers in promoting multiethnic and multi-racial campaigns for workplace and economic justice. Transnational cross-border solidarity issues and rights of undocumented workers. P/NP or letter grading.

**M164. Women, Violence, Globalization: India, Philippines, Singapore, Vietnam. (4)** (Same as Gender Studies M164A.) Lecture, four hours. Study of various forms of violence done on women not only in and of themselves but in light of larger systems of oppression, with focus on Pilipino, Vietnamese, Singaporean, and South Asian cultures. Letter grading.

**M165. Race, Gender, Class. (5)** (Same as Comparative Literature M175.) Seminar, three hours. Theoretical and literary readings combined to explore three main aspects of social and cultural experience (race, gender, class) as separate but interconnected spheres affecting both minority and majority populations in U.S. Examination of these issues from comparative perspectives. P/NP or letter grading.

**M166A. Immigrant Rights, Labor, and Higher Education. (4)** (Same as Chicana/o and Central American Studies M156A and Labor Studies M166A.) Lecture, three hours; discussion, one hour. New immigrant rights movement, with particular attention to labor and higher education. Overview of history of immigrant rights movement and examination of development of



coalition efforts between labor movement and immigrant rights movement nationally and locally. Special focus on issue of immigrant students in higher education, challenges facing undocumented immigrant students, and legislative and policy issues that have emerged. Students conduct oral histories, family histories, research on immigration and immigrant rights, write poetry and spoken word about immigrant experience, and work to collectively develop student publication on immigrant students in higher education. P/NP or letter grading.

**M166B. Research on Immigration Rights, Labor, and Higher Education. (4)** (Same as Chicana/o and Central American Studies M156B and Labor Studies M166B.) Seminar, two hours. Prerequisite: course M166A. Expansion of research conducted by students in course M166A involving oral histories, research on immigration/labor/higher education, and evaluation of legislation and legal issues impacting undocumented students. Letter grading.

**M166C. Research on Immigrant Students and Higher Education. (4)** (Same as Chicana/o and Central American Studies M156C and Labor Studies M166C.) Seminar, three hours. Enforced prerequisites: courses M166A, M166B. Expansion of research conducted by students in courses M166A and M166B involving oral histories, research on immigration/labor/higher education, and evaluation of legislation and legal issues impacting undocumented students. Designed around class project, where students work on showcasing all material collected throughout year. Letter grading.

**167. Immigration and New Second Generation. (4)** Lecture, three hours. Study of lived experiences of contemporary immigrants and their children. Examination of socioeconomic circumstances, life chances, and outcomes of new second generation. Review of theoretical literature and empirical research on immigration and immigrant adaptation, comparing historical and contemporary trends of immigration and experiences of adult immigrants. Study of immigrant children's experiences, considering patterns, processes, and mechanisms of growing up American and identity formation. Asian immigration and Asian Americans from comparative perspective. P/NP or letter grading.

**M168. Student-Initiated Retention and Outreach Issues in Higher Education. (4)** (Same as African American Studies M118, American Indian Studies M118, and Chicana/o and Central American Studies M118.) Lecture, four hours. Exploration of issues in outreach and retention of students in higher education, especially through student-initiated programs, efforts, activities, and services, with focus on UCLA as case. May be repeated twice for credit. Letter grading.

**M169. Constructing Race. (4)** (Same as African American Studies M159P and Anthropology M144P.) Lecture, three hours; discussion, one hour (when scheduled). Examination of race, socially constructed category, from anthropological perspective. Consideration of development of racial categories over time and in different regions, racial passing, multiracial identity in U.S., whiteness, race in popular culture, and race and identity. P/NP or letter grading.

**170. Transnational Perspectives on Asian America. (4)** Lecture, three hours. Recommended preparation: background in Asian Pacific American social and legal history. Designed for juniors/seniors. Examination of transformations that have occurred in Asian America in last four decades as consequence of global economic restructuring and new immigration. Introduction to and survey of new frameworks for understanding these changes in postmodern Asian Pacific American communities, using theories of transnationalism and Asian American political and racial history. Readings and discussion on transnational aspects of wide range of historical and contemporary topics in context of Asia/Asian American experience. Building of linkages between roots of social constructions of race and multilayered social processes that now constitute globalizing Asian America. Theoretical readings assigned. P/NP or letter grading.

**171A. Critical Issues in U.S.-China Relations. (4)** Lecture, three hours. Not open to freshmen. Critical examination of U.S. involvement in China, Hong Kong, and Taiwan, including study of historical, cultural, po-

litical, and socioeconomic factors that shape relations between China, Hong Kong, and Taiwan and U.S. Examination of impact of relationships in Pacific Rim and Chinese Americans and their communities. P/NP or letter grading.

**171B. Critical Issues in U.S.-Japan Relations. (4)** Lecture, three hours. Not open to freshmen. Critical examination of U.S. involvement in Japan, including study of historical, cultural, political, and socioeconomic factors that shape relations between Japan and U.S. Examination of impact of relationships in Pacific Rim and Japanese Americans and their communities. P/NP or letter grading.

**171C. Critical Issues in U.S.-Korea Relations. (4)** Lecture, three hours. Not open to freshmen. Critical examination of U.S. involvement in Korea, including study of historical, cultural, political, and socioeconomic factors that shape relations between Korea and U.S. Examination of impact of relationships in Pacific Rim and Korean Americans and their communities. P/NP or letter grading.

**M171D. Critical Issues in U.S.-Philippine Relations. (4)** (Same as History M144C.) Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: History 176A, 176B, 176C. Designed for juniors/seniors. Examination of complex interrelationship between U.S. colonialism, Philippine nationalism, history of Filipino Americans, and Philippine diaspora in 20th century. P/NP or letter grading.

**171E. Critical Issues in U.S.-Vietnam Relations. (4)** Lecture, three hours. Not open to freshmen. Critical examination of U.S. involvement in Vietnam, including study of historical, cultural, political, and socioeconomic factors that shape relations between Vietnam and U.S. Examination of impact of relationships in Pacific Rim and Vietnamese Americans and their communities. P/NP or letter grading.

**171F. U.S. Empire in Southeast Asia. (4)** Seminar, three hours. Limited to juniors/seniors. Interdisciplinary examination of historical trajectory that led U.S. Empire to Southeast Asia and conditions that led to migration of refugees from Laos, Cambodia, and Vietnam to U.S. with focus on settler colonialism, imperialism, and global racial warfare. P/NP or letter grading.

**M172A. Indian Identity in U.S. and Diaspora. (4)** (Same as History M174G.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of overseas Indian communities; transformations of Hinduism in diaspora; emergence of new diasporic art forms such as bhangra rap and chutney music; relations between Indians and other racial and ethnic groups; Indian women as embodiment of Indian culture; diasporic identities. P/NP or letter grading.

**172B. Gender in South Asian Communities at Home and Abroad. (4)** Seminar, three hours. Examination of centrality of gender to histories and identities of men and women of South Asian affiliation across multiple historical and geopolitical contexts. Focus on colonial South Asia, South Asian diasporas in U.K., South Asian Americans in U.S., and transnational South Asian public cultures. Theoretical approaches to study of South Asians in comparative frame and consideration of how transnational perspectives enable revisioning South Asian American experiences and to rethink relationship between Asian American studies, diaspora studies, and area studies. P/NP or letter grading.

**172C. Transnational Bollywood. (4)** (Formerly numbered M172C.) Lecture, three hours. Study of how popular Bollywood cinema materializes colonial and postcolonial formations pertaining to gender, class and caste, sexuality, race, and economic liberalization in South Asia, as well as across South Asian communities in North America, U.K., and Africa. Examination of how complex relationships between Bollywood and transnational South Asian diasporas enable us to better understand South Asian American communities. P/NP or letter grading.

**M173. Topics in Vietnamese Cinema and/or Literature. (4)** (Same as Vietnamese CM155.) Lecture, three hours; discussion, one hour. Knowledge of Vietnamese not required. Critical and historical examina-

tion of literary and/or filmic representations connected to social practices such as empire, nation, diaspora, and globalization. Original language course materials available for interested students. P/NP or letter grading.

**174A. Special Courses in Comparative Race, Ethnicity, Gender, and Sexuality. (4)** Lecture, three hours; discussion, one hour (when scheduled). Limited to juniors/seniors. Variable topics in selected issues on race, ethnicity, gender, and sexuality from comparative perspective. May be repeated for credit with topic change. P/NP or letter grading.

**174B. Special Courses in Transnationalism and Diasporas. (4)** Lecture, three hours; discussion, one hour (when scheduled). Limited to juniors/seniors. Variable topics in selected comparative and international issues pertaining to transnationalism and diasporas. May be repeated for credit with topic change. P/NP or letter grading.

**175A. Topics in Comparative Race, Ethnicity, Gender, and Sexuality. (4)** Seminar, three to four hours. Limited to juniors/seniors. Variable topics in selected issues on race, ethnicity, gender, and sexuality from comparative perspective. May be repeated for credit with topic change. P/NP or letter grading.

**175B. Topics in Transnationalism and Diasporas. (4)** Seminar, three to four hours. Limited to juniors/seniors. Variable topics in selected comparative and international issues pertaining to transnationalism and diasporas. May be repeated for credit with topic change. P/NP or letter grading.

**176. Making Fiction Work: Philippines and Its Elsewheres. (4)** Seminar, three hours. Prerequisite: one course from course 10, 10W, 20, 20W, 30, 30W, 40, 40W, 50, 50W, 123, 133, M171D or History M144C, Filipino 130A, 152, 155, or consent of instructor. Philippines and Filipino global diaspora as launching off point for interdisciplinary study of cultural diversity, national identity formation, global migration, labor, rise of Asia, and borderlands. Critical study of difference, not as identitarian, celebratory approach of sameness; rather focus on shared struggles between minoritized groups in U.S. and shared histories of U.S. territorial possessions. May not be repeated for credit. P/NP or letter grading.

**177. Social Movements in Guam and Pacific. (4)** Lecture, three hours. Survey of immigrant and indigenous histories in Guam, Mariana Islands, and Oceania, emphasis on Asian, Chamorro, and Pacific Islander communities, and feminist, environmental, nationalist, and religious social movements. P/NP or letter grading.

**178. Critical Refugee Studies. (4)** Lecture, three hours. Prerequisite: course 10, 10W, 20, 20W, 30, 30W, 40, 40W, 50, or 50W. Examination of how refugees are represented in government and popular media, and how refugees represent themselves through cultural production. Rather than focus on refugee as victim, study centers refugee as subject of knowledge production for critical analyses of war, empire, militarism, and human rights. P/NP or letter grading.

**M179. Asian Community: Border-Crossing, Diasporic Formation, and Social Transformation. (4)** (Same as Sociology M139.) Lecture, three hours; discussion, one hour. Exploration of critical issues facing broad Asian community, in context of globalization and international migration, through social science lens of migration studies and diaspora studies. Examination of how movements of people, ideas, capital, and goods create new trends and patterns of diasporic formation, integration, and social transformation at individual, group, and societal levels in non-Western contexts. Students engage in intellectually stimulating discussions and debates on immigration and immigrant integration in Asian world; and on anxieties, tensions, conflicts, and accommodation in age of globalization. Students also discuss challenges, possibilities, and opportunities of building cohesive Asian community. P/NP or letter grading.

**185. Capstone Community-Based Research. (4)** Seminar, three hours; fieldwork, three hours. Limited to senior departmental majors and minors. Designed to serve as complement to service learning requirement for major and minor and may be used to fulfill

capstone requirement for major and minor. Students work as research team, are matched with one or more community groups, and must complete minimum of 40 fieldwork hours. Duties and responsibilities collaboratively determined by instructor, students, and sponsoring organizations. Readings determined in consultation with instructor. Letter grading.

**186. Capstone Research Seminar. (4)** Seminar, three hours. Limited to senior departmental majors and minors. Synthesis and application of knowledge students have acquired through prior departmental courses so they can conduct in-depth research or creative-expression project. Themes may vary by instructor and term. Students pursue independent work related to course theme with guidance from instructor, then share and critique other student work in progress. Letter grading.

**187A. Special Courses in Research Methodologies. (4)** Lecture, three hours; discussion, one hour (when scheduled). Limited to juniors/seniors. Variable topics in multidisciplinary research methodologies in Asian American studies. May be repeated for credit with topic change. P/NP or letter grading.

**187B. Special Courses in Asian American Themes. (4)** Lecture, three hours; discussion, one hour (when scheduled). Limited to juniors/seniors. Variable topics in selected Asian American themes, including issues in cultural formation, religion, education, social class, economic development, social movement, politics, and public policy. May be repeated for credit with topic change. P/NP or letter grading.

**187C. Special Courses in Asian American Populations and Communities. (4)** Lecture, three hours; discussion, one hour (when scheduled). Limited to juniors/seniors. Variable topics in historical and contemporary issues pertaining to different Asian-origin subgroups and their respective communities. May be repeated for credit with topic change. P/NP or letter grading.

**188. Special Courses in Asian American Studies. (4)** Seminar, four hours. Program-sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Topics in Research Methodologies. (4)** Seminar, three to four hours. Limited to juniors/seniors. Variable topics in multidisciplinary research methodologies in Asian American studies. May be repeated for credit with topic change. P/NP or letter grading.

**191B. Topics in Asian American Themes. (4)** Seminar, three to four hours. Limited to juniors/seniors. Variable topics in selected Asian American themes, including issues in cultural formation, religion, education, social class, economic development, social movement, politics, and public policy. May be repeated for credit with topic change. P/NP or letter grading.

**191C. Topics in Asian American Populations and Communities. (4)** Seminar, three to four hours. Limited to juniors/seniors. Variable topics in historical and contemporary issues pertaining to different Asian-origin subgroups and their respective communities. May be repeated for credit with topic change. P/NP or letter grading.

**M191F. Topics in Asian American Literature. (5)** (Same as English M191C.) Seminar, three or four hours. Enforced prerequisite: English Composition 3 or 3H. Variable specialized studies course in Asian American literature. Topics may include genres (autobiography, novel, poetry, short fiction, or drama); specific nationalities within Asian American community; themes of transnational migration; cross-cultural, interdisciplinary, or interracial negotiation; and gender and queer politics. Reading, discussion, and development of culminating project. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**192. Undergraduate Practicum in Asian American Studies. (2 or 4)** Seminar, two or four hours. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students in Asian American studies courses. Students assist in preparation of materials and development of innovative programs with guidance of faculty members in small course settings. No more than 4 units may be applied toward major; units applied must be taken for letter grade. May be repeated for credit. P/NP or letter grading.

**195. Community or Corporate Internships in Asian American Studies. (4)** Tutorial, two hours; fieldwork, eight hours. Requisites: courses 10 or 10W, and 20. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195CE. Comparative Approaches to Community and Corporate Internships. (4)** (Same as African American Studies M195CE, American Indian Studies M195CE, Chicana/o and Central American Studies M195CE, and Gender Studies M195CE.) Tutorial, one hour; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Comparative study of race, gender, and indigeneity in relation to contemporary workplace dynamics. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. Individual contract with supervising faculty member required. P/NP or letter grading.

**196. Research Apprenticeship in Asian American Studies. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor to learn skills and techniques. May not be applied toward departmental major or minor requirements. May be repeated for credit. Individual contract required. P/NP or letter grading.

**197. Individual Studies in Asian American Studies. (2 to 4)** Tutorial, three hours. Requisites: course 10 or 10W or 20 or comparable knowledge in Asian American studies, 3.0 grade-point average or better. Limited to juniors/seniors. Directed reading of scholarly work or supervised research between student and faculty member. No original research or project ex-

pected, but tangible evidence of mastery of subject matter required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**198A. Honors Research in Asian American Studies. (4)** Tutorial, three to four hours. Requisites: two courses from 10 (or 10W), 20, and 30 (or 30W) and one course from 104A through M108, 187A, or 191A. Introduction to research techniques and applications of methodologies in study of Asians and Pacific Islanders in U.S. Development of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**198B-198C. Honors Research in Asian American Studies. (4-4)** Tutorial, three hours. Requisite: course 198A. Course 198B is requisite to 198C. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. In Progress (198B) and letter (198C) grading.

**199. Directed Research or Senior Project in Asian American Studies. (2 to 4)** Tutorial, three hours. Preparation: 3.0 overall grade-point average. Requisites: courses 10 (or 10W) and 20 or comparable knowledge in Asian American studies. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating research paper or project report required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Historical Perspectives on Asian American and Pacific Islander American Communities. (4)** Seminar, three hours. Designed for graduate students. Examination of critical issues in Asia and Pacific Islander American history and historiography. Introduction to research in archival and/or oral history methods. S/U or letter grading.

**200B. Critical Approaches to Emerging Issues in Asian and Pacific Islander American Studies. (4)** Seminar, three hours. Designed for graduate students. Examination of emergent issues in Asian and Pacific Islander American communities, using selected theoretical approaches. Introduction to research in social scientific methods such as ethnography, participant observation, interviewing, survey development, or community-based research. S/U or letter grading.

**200C. Critical Issues in Asian and Pacific Islander American Literature and Culture. (4)** Seminar, three hours. Designed for graduate students. Examination of critical questions emerging from Asian and Pacific Islander American literacy and cultural criticism and/or practice. Introduction to research in literary and cultural criticism and/or practice. S/U or letter grading.

**200D. Critical Issues in Asian and Pacific Islander American Studies Methods. (4)** Seminar, three hours. Designed for graduate students. Critical engagements with methodology in Asian and Pacific Islander studies. Students develop their thesis or capstone projects, including identifying and applying appropriate methodological approaches. S/U or letter grading.

**203. Asian American Research Methods. (4)** Seminar, three hours. Introduction to empirical research methods, stressing uses and relevancy in research with ethnic minority populations. Review of characteristics and logical processes of research and applicability of scientific and scholarly inquiry in advancing knowledge. S/U or letter grading.

**M213. Asian-Latinos. (4)** (Same as Chicana/o and Central American Studies M213.) Seminar, three hours. Limited to graduate students. Examination of historical and contemporary populations of Asian-Latinos in Latin America and U.S. Review and critique of nascent literature on Asian-Latinos and analysis of experience of Asian-Latinos utilizing theoretical frameworks of *mestizaje*, critical mixed-race theory, and transnationalism. Coverage of often-overlooked Asian contributions to Latin American and Chicano/Latino

culture and identity and exploration of unique experience of mixed-race Asian-Latinos. S/U or letter grading.

**215A-215B. Asian American Jurisprudence. (215A: 3 or 4/215B: 1 or 2)** Lecture, three hours. Course 215A is enforced requisite to 215B. Designed for graduate students. Through judicial opinions, commentary, and historical readings, examination of how American law has shaped demographics, experiences, and possibilities of Asian Americans and also how they shaped American law as well. Concurrently scheduled with Law 315. In Progress (215A) and S/U or letter (215B) grading.

**222. Colonialism and Law in Pacific. (4)** Seminar, three hours. Reading seminar on broad topics of colonialism and law. Survey of anthropological, historical, and legal studies of ways in which colonialism and law operate as methods of social control, order, and surveillance in Asia and Pacific. S/U or letter grading.

**231. Japanese American Resettlement: Meaning and Methods. (4)** Seminar, three hours. Designed for graduate students. In-depth analysis of multiple dimensions of Japanese American post-World War II resettlement and research methods needed to study resettlement holistically. S/U or letter grading.

**M239. Race, Ethnicity, and Culture as Concepts in Practice and Research. (4)** (Same as Community Health Sciences M239.) Seminar, three hours. Integration of cross-cultural findings in healthcare with current American (U.S.) healthcare system paradigms to facilitate designing culturally based public health programs and train culturally competent practitioners. Letter grading.

**C242A. Ethnocommunications I: Introduction to Creating Community Media. (4)** Seminar, three hours. Strong verbal communication skills and familiarity with technology required. Introduction to social documentary theory and methodology. Through hands-on production, use of digital video to tell visual stories, reclaim history, and examine social issues related to diverse peoples, cultures, and communities. Viewing of films and interactive media for critique and discussion, guest speakers, basic instruction in use of digital video technology, and group and individual video projects. Concurrently scheduled with course C142A. S/U or letter grading.

**C242B. Ethnocommunications II: Intermediate Creating Community Media. (4)** Seminar, three hours. Strong verbal communication skills and familiarity with technology required. Intermediate application of social documentary theory and methodology. Use of digital video to create new approaches to visual storytelling, reclaim history, and examine social issues related to diverse peoples, cultures, and communities. Continuing instruction in use of digital technology and concepts. Topics include videography, composition, sound recording, interviewing techniques, editing, and writing treatments. Completion of community-based documentary required. Concurrently scheduled with course C142B. S/U or letter grading.

**C242C. Ethnocommunications III: Advanced Creating Community Media. (4)** Seminar, three hours. Enforced requisite: course C242B. Advanced application of social documentary theory and methodology. Continuing instruction in use of digital technology and concepts. Intensive instruction in proposal writing, videography, composition, sound recording, interviewing techniques, visual storytelling, and editing. Completion of community-based documentary suitable for public exhibition required. Concurrently scheduled with course C142C. S/U or letter grading.

**M260. Topics in Asian American Literature. (4)** (Same as English M260A.) Seminar, three hours. Graduate seminar that examines and critically evaluates writings of Asian Americans. May be repeated for credit. S/U or letter grading.

**M261. Theorizing Third World. (4)** (Same as Comparative Literature M274.) Seminar, three hours. Investigation of politics of power, gender, and race in complex relationships between so-called First World and Third World, using both theoretical and textual approaches. S/U or letter grading.

**M290Q. Social Welfare Policy in Asian American Communities. (4)** (Same as Social Welfare M290Q.) Seminar, three hours. Overview of social welfare policy in Asian American communities. Introduction to major social welfare policies and programs in U.S. and impact on Asian American communities. Policy development, approaches, processes of implementation, evaluation, and strategies to effect policy. S/U or letter grading.

**297A. Topics in Asian American Studies. (4)** Seminar, three hours. Designed for graduate students. Selected topics in Asian American studies. S/U or letter grading.

**297B. Topics in Asian American Studies: Asian Migration to U.S. (4)** Seminar, three hours. Emphasis on Asia as main regional source for international migrants. Topics include patterns and theories of international migration and their relevance to Asian experience, sending and receiving country perspectives, research and policy issues. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, three hours. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. Unit credit may be applied toward full-time equivalence but not toward 11-course requirement for MA. May be repeated for credit. S/U grading.

**490. Writing Workshop for Graduate Students. (2)** Lecture, one hour; discussion, one hour. Practice in writing reports, grant proposals, abstracts, theses, and article-length research papers. Analyzing rhetorical and stylistic features of essays in various Asian American journals helps students improve both their prose style and editorial abilities. Four units may be applied toward MA degree requirements. May be repeated once for credit. S/U grading.

**495. Supervised Teaching of Asian American Studies. (4)** Seminar, three hours. Preparation: apprentice personnel appointment as teaching assistant in Asian American studies. Designed for graduate students. Required of all new teaching assistants. Special course for teaching assistants designed to deal with problems and techniques for teaching introductory Asian American studies courses. Unit credit may be applied toward full-time equivalence but not toward course requirements for MA. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. S/U or letter grading.

**597. Research for and Preparation of MA Capstone. (2 to 8)** Tutorial, three hours. Limited to graduate students. Preparation and research for MA capstone. May be repeated for credit. S/U grading.

**598. Research for and Preparation of MA Thesis. (2 to 8)** Tutorial, to be arranged. Preparation of research data and writing of MA thesis. S/U grading.

## ASIAN LANGUAGES AND CULTURES

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[Asian Languages and Cultures](#)

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Seiji M. Lippit, PhD, *Chair*

### Faculty Roster

#### Professors

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Torquil Duthie, PhD (*Haruhisa Handa Professor of Shinto Studies*)

George E. Dutton, PhD

Michael D. Emmerich, PhD (*Tadashi Yanai Endowed Chair in Japanese Literature*)

Christopher P. Hanscom, PhD

Stephanie W. Jamison, PhD

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Seiji M. Lippit, PhD

Thu-huong Nguyen-vo, PhD

David C. Schaberg, PhD

Shu-mei Shih, PhD (*Irving and Jean Stone Professor*)

Sung-Ock S. Sohn, PhD

Hongyin Tao, PhD

#### Professors Emeriti

William M. Bodiford, PhD

Robert E. Buswell, Jr., PhD (*Irving and Jean Stone Professor Emeritus*)

John B. Duncan, PhD

Robert C. Epp, PhD

Theodore D. Hutters, PhD

Shoichi Iwasaki, PhD

Peter H. Lee, PhD

Hartmut E.F. Scharfe, PhD

Gregory R. Schopen, PhD

Jonathan A. Silk, PhD

Richard E. Strassberg, PhD

Shirleen S. Wong, PhD

Pauline R. Yu, PhD

#### Associate Professors

Min Li, PhD

Sung-Deuk Oak, ThD (*Dong Soon Im and Mi Ja Im Endowed Professor of Korean Christianity*)

Oona Paredes, PhD

Satoko Shimazaki, PhD

#### Assistant Professors

Stephanie Balkwill, PhD

Diego Loukota Sanclemente, PhD

Huijun Mai, PhD

Hyun Suk Park, PhD

Sixiang Wang, PhD

Yinghui Wu, PhD

Junko Yamazaki, PhD

#### Senior Lecturer SOE

Gyanam Mahajan, PhD

#### Lecturer SOE

Kuo-yi Pao, MA, MS, *Emeritus*

#### Lecturers

Chuc V. Bui, MA

Liancheng Chief, PhD

Jane B. Choi, PhD

Nenita P. Domingo, PhD

Jenjitt Gasigitamrong, PhD

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Hee Ju, PhD

Jennifer J. Jung-Kim, PhD

Yumiko Kawanishi, PhD

Jae-eun I. Mitsunaga, PhD

Thu-Ba Nguyen-Hoai, PhD

Yoko Nogami, MA

Yan Shen, MA

Michelle M. Fu Smith, PhD

Xiaoxin Sun, BA

Asako H. Takakura, EdD

Mai Takeuchi, PhD  
 Juliana Wijaya, PhD  
 Yu-wen Yao, MA  
 Jae-eun Yoon, MA

## Overview

The Department of Asian Languages and Cultures offers a wide range of courses in the languages, literatures, religions, and cultural heritage of China, Japan, and Korea, as well as South and Southeast Asia. The department offers training in many specialized fields such as archaeology, film, folklore, history, linguistics, literature, mythology, religious studies, and cultural studies. Courses prepare students for careers in business, government service, international relations, journalism, law, publishing, teaching, and academic professions.

## Courses for Nonmajors

The department offers many courses in which knowledge of Asian languages is not required. A current list is available on the Registrar's [course descriptions](#) web page.

## Undergraduate Study

For undergraduates, the department offers majors that combine language study with courses taught in English that examine the rich cultural heritage of China, Japan, and Korea, as well as South and Southeast Asia. The majors also offer opportunities for education abroad in an Asian country. The language courses aim to develop the four skills of speaking, aural comprehension, reading, and writing in a balanced and mutually supportive manner. The lecture and seminar courses aim to develop critical thinking and writing skills through in-depth study of a culture within a broader historical and comparative context.

Undergraduate majors who wish to pursue graduate degrees are encouraged to apply for admission to the departmental honors program.

Students considering a major or minor in the department should consult with the departmental undergraduate adviser as soon as possible in their university career, but in no case later than the point at which they are about to begin taking upper-division courses. Students should select courses to fulfill major or minor requirements in consultation with the undergraduate adviser. The approved list of courses for each category of major or minor requirements is available in the department office (290 Royce Hall) and on its [website](#).

## Undergraduate Policies

### Placement in Language Courses

Students are not placed in Chinese, Filipino, Hindi-Urdu, Indonesian, Japanese, Korean, Thai, and Vietnamese language courses automatically according to their years of previous study. Students with any prior knowledge or study of an Asian language who wish to take courses in that language at UCLA are required to take the appropriate departmental language

placement examination (see the [Schedule of Classes](#) or [department website](#) for more information). The examination determines which course is most appropriate for the student's current level of proficiency. Students who have obtained college credit for Asian language courses may not repeat those same courses for credit. Prospective majors who place out of the upper-division modern language requirement are expected to substitute an equivalent number of other units to be selected in consultation with the departmental undergraduate adviser.

### Language Acquisition Courses

No credit is allowed for completing a less advanced course after successful completion of a more advanced Asian language course with focus on conversation, grammar, and/or composition.

## Graduate Study

At the graduate level, the department offers highly selective PhD degree programs that train research scholars for academic careers in various fields of Asian culture, including literature, linguistics, film, religion, and history.

## Undergraduate Majors

### Asian Humanities BA

#### Study Abroad

Early acquisition of Asian language skills aids in the timely completion of major requirements and enriches appreciation of Asian cultures. Students are encouraged, therefore, to complete up to a year of language study in approved programs of study abroad.

### Learning Outcomes

The Asian Humanities major has the following learning outcomes:

- Identification of major elements of cultures in Asia, with particular attention to chosen regions of expertise
- Assessment of the social contours of a given Asian society, and explanation of ways in which dynamics within communities and other social structures shape the course of events
- Understanding of the role that language and literature play in reflecting and influencing Asian societies, across time and different literary genres
- Formulation of effective written and oral arguments that address important themes and issues in Asian arts and cultures, in ways that are historically appropriate and relevant to particular contexts
- Conduct research on Asian languages, literatures, and other cultural elements, making effective and critical use of primary and secondary source materials
- Appreciation of the central place of religion in Asian cultures, with focus on chosen region of expertise and tradition of focus

## Entry to the Major

### Transfer Students

Transfer applicants to the Asian Humanities major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of Chinese, Japanese, Korean, Filipino/Tagalog, Hindi, Indonesian, Thai, or Vietnamese and either one civilization course on Asia or one introduction to Buddhism course or one introduction to Asian religions course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Completion of the intermediate sequence in one Asian language offered by the department (e.g., Chinese 6, 10, Filipino 6, Hindi-Urdu 100C, Indonesian 6, Japanese 6, 10, Korean 6, 10, Thai 6, Vietnamese 6, or equivalent) and Asian 30 or one civilization course (e.g., Chinese 50, Japanese 50, 70, Korean 50) or one introduction to religions course (e.g., Asian M60, M60W, M61, Chinese M60, M60W, Korean M60, South Asian M60, Southeast Asian M60) or one culture course (e.g., Japanese 75, 80, Korean 40, 70, 80) within the department.

#### The Major

*Required:* Three upper-division language courses in one Asian language offered by the department and eight upper-division electives within the department, including at least one course from at least four of the following areas: Asia, China, Japan, Korea, South Asia, or Southeast Asia.

#### Honors Program

The honors program is a three-term sequence (Asian 198A-198B-198C), taken in addition to requirements for the major, that culminates in the submission of a 40- to 60-page thesis. In most circumstances courses 198A-198B-198C are taken in the senior year (fall, winter, and spring quarters), although students also have the option of taking course 198A in spring quarter of their junior year. Students are expected to use an Asian language in their research, with the scope of language work to be determined in consultation with their faculty adviser.

### Policies

#### Honors Program

##### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year and, at the time of admission, must have completed at least two upper-division courses in their major. For application forms and more information, contact the departmental undergraduate adviser.



## Requirements

Highest honors, honors, or no honors are awarded as determined by the faculty thesis director and the departmental honors committee.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Asian 198A-198B-198C.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Asian 198A-198B-198C with a grade of A in each course.

## Asian Languages and Linguistics BA

### Study Abroad

Early acquisition of Asian language skills aids in the timely completion of major requirements and enriches appreciation of Asian cultures. Students are encouraged, therefore, to complete up to a year of language study in approved programs of study abroad.

### Learning Outcomes

The Asian Languages and Linguistics major has the following learning outcomes:

- Identification of major linguistic features of Asian languages, with attention to chosen region of expertise
- Demonstrated working knowledge of one or two Asian languages
- Demonstrated competency in fieldwork with Asian languages in their natural social and cultural contexts
- Demonstrated familiarity with current theories of language pedagogy with practical skills in classroom teaching of an Asian language
- Understanding of the interdependency and dynamic relationship between language, society, culture, and social interaction in the context of Asian languages across time and different modes of communication
- Conduct research and formulate effective written and oral arguments that address important themes and issues in languages and cultures of Asia

### Entry to the Major

#### Transfer Students

Transfer applicants to the Asian Languages and Linguistics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of Chinese, Japanese, Korean, Filipino/Tagalog, Hindi, Indonesian, Thai, or Vietnamese and either one Asian languages and culture course or one civilization course on Asia or one introduction to Buddhism course or one introduction to Asian religions course or one introduction to linguistic analysis course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Completion of the intermediate sequence in one Asian language offered by the department (e.g., Chinese 6, 10, Filipino 6, Hindi-Urdu 100C, Indonesian 6, Japanese 6, 10, Korean 6, 10, Thai 6, Vietnamese 6, or equivalent) and Asian 30 or one civilization course (e.g., Chinese 50, Japanese 50, 70, Korean 50, Southeast Asian 70) or one introduction to religions course (e.g., Asian M60, M60W, M61, Chinese M60, M60W, Korean M60, South Asian M60, Southeast Asian M60) or one culture course (e.g., Japanese 75, 80, Korean 40, 70, 80) within the department; and Linguistics 20.

### The Major

*Required:* Eleven courses as follows: (1) five upper-division language courses in one Asian language offered by the department, or three upper-division language courses in one Asian language offered by the department and two upper-division language courses in a different Asian language offered by the department, (2) Asian 100 and 104, (3) two Asian linguistics courses selected from Asian CM124, Chinese 103, C120, Japanese M120, CM122, CM123, CM127, Korean CM120, 124, South Asian 170, and (4) two upper-division electives within the department or from the Linguistics Department.

### Honors Program

The honors program is a three-term sequence (Asian 198A-198B-198C), taken in addition to requirements for the major, that culminates in the submission of a 40- to 60-page thesis. In most circumstances courses 198A-198B-198C are taken in the senior year (fall, winter, and spring quarters), although students also have the option of taking course 198A in spring quarter of their junior year. Students are expected to use an Asian language in their research, with the scope of language work to be determined in consultation with their faculty adviser.

## Policies

### Preparation for the Major

All preparation courses must be completed with a C or better grade. A minimum 2.5 grade-point average is required for both (1) the language and (2) Linguistics 20 and the civilization/religion course.

### Honors Program

#### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year and, at the time of admission, must have completed at least two upper-division courses in their major. For application forms and more information, contact the departmental undergraduate adviser.

## Requirements

Highest honors, honors, or no honors are awarded as determined by the faculty thesis director and the departmental honors committee.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Asian 198A-198B-198C.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Asian 198A-198B-198C with a grade of A in each course.

## Asian Religions BA

### Study Abroad

Early acquisition of Asian language skills aids in the timely completion of major requirements and enriches appreciation of Asian cultures. Students are encouraged, therefore, to complete up to a year of language study in approved programs of study abroad.

### Learning Outcomes

The Asian Religions major has the following learning outcomes:

- Appreciation of the central place of religion in Asian cultures, with focus on chosen region of expertise and tradition of focus
- Understanding of the crucial role of language and written documents in the development of religious beliefs and practices
- Clear and effective writing on topics in the field, in a way that is sensitive to the complex dynamics and transformations of religion across Asian cultural boundaries
- Formulation of research projects using primary and secondary source materials, making effective and critical use of primary and secondary source materials
- Demonstrated working knowledge of one Asian language at an intermediate level
- Demonstrated basic exposure to the Buddhist argot of one Asian language

### Entry to the Major

#### Transfer Students

Transfer applicants to the Asian Religions major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of Chinese, Japanese, Korean, Filipino/Tagalog, Hindi, Indonesian, Thai, or Vietnamese, or one year of Sanskrit, and one introduction to Buddhism course or one introduction to Asian religions course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.



## Requirements

### Preparation for the Major

*Required:* Completion of the intermediate sequence in one Asian language offered by the department (e.g., Chinese 6, 10, Filipino 6, Hindi-Urdu 100C, Indonesian 6, Japanese 6, 10, Korean 6, 10, Thai 6, Vietnamese 6, or equivalent) and Asian 30 or one introduction to religions course from Asian M60, M60W, M61, Chinese M60, M60W, Korean M60, South Asian M60, or Southeast Asian M60.

### The Major

*Required:* Three upper-division language courses in one Asian language offered by the department; six upper-division Asian religions courses within the department, including at least one course each concerning religions in China, Japan, Korea, and either South Asia or Southeast Asia; and two electives within the department.

### Honors Program

The honors program is a three-term sequence (Asian 198A-198B-198C), taken in addition to requirements for the major, that culminates in the submission of a 40- to 60-page thesis. In most circumstances courses 198A-198B-198C are taken in the senior year (fall, winter, and spring quarters), although students also have the option of taking course 198A in spring quarter of their junior year. Students are expected to use an Asian language in their research, with the scope of language work to be determined in consultation with their faculty adviser.

## Policies

### Honors Program

#### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year and, at the time of admission, must have completed at least two upper-division courses in their major. For application forms and more information, contact the departmental undergraduate adviser.

#### Requirements

Highest honors, honors, or no honors are awarded as determined by the faculty thesis director and the departmental honors committee.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Asian 198A-198B-198C.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Asian 198A-198B-198C with a grade of A in each course.

## Chinese BA

### Study Abroad

Early acquisition of Asian language skills aids in the timely completion of major requirements and enriches appreciation of Asian cultures. Students are encouraged, therefore, to complete up to a year of language study in approved programs of study abroad.

### Learning Outcomes

The Chinese major has the following learning outcomes:

- Advanced ability to speak, read, and write modern Chinese
- Demonstrated competence in reading classical Chinese
- Broad knowledge of Chinese cultural, religious, and/or literary history from early periods to the modern era
- Demonstrated disciplinary familiarity in analysis of texts, objects, and historical trends
- Clear and effective writing on topics in Chinese civilization, in ways that draw upon the complex dynamics and cultural transformations across the history of China
- Formulation of research projects that engage critically and thoughtfully with primary and secondary materials

### Entry to the Major

#### Transfer Students

Transfer applicants to the Chinese major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of Chinese and one Chinese civilization course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Chinese 6 or 6A or 10 or equivalent, and one course from 50, M60, M60W, 70, 70W, or Asian 30.

#### The Major

*Required:* Eleven courses as follows: (1) five language courses selected from either *modern Chinese* (Chinese 100A and 100B and 100C or 100I, 101A, 101B, 102A, C107A, C120, 130A or 130B, 135) or from *premodern Chinese* (110A, 110B, 110C, 140A through 140D, 165)—at least two language courses must be in the pre-modern language or texts, (2) one literature course selected from 130A, 130B, 131, 135, 140A through 140D, C150A, C150B, 151, 152, or M153, (3) three elective courses on China selected from C138, 139, 154, 155, C156, CM160, 165, 174, C175, 176, 180, 184, 185, 186, 187, 191A, 191B, or from items 1 and 2 above not used to fulfill another requirement, and (4) two additional upper-division elective courses within the department but outside China.

## Honors Program

The honors program is a three-term sequence (Asian 198A-198B-198C), taken in addition to requirements for the major, that culminates in the submission of a 40- to 60-page thesis. In most circumstances courses 198A-198B-198C are taken in the senior year (fall, winter, and spring quarters), although students also have the option of taking course 198A in spring quarter of their junior year. Students are expected to use an Asian language in their research, with the scope of language work to be determined in consultation with their faculty adviser. Highest honors, honors, or no honors are awarded as determined by the faculty thesis director and the departmental honors committee.

## Policies

### Honors Program

#### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year and, at the time of admission, must have completed at least two upper-division courses in their major. For application forms and more information, contact the departmental undergraduate adviser.

#### Requirements

Highest honors, honors, or no honors are awarded as determined by the faculty thesis director and the departmental honors committee.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Asian 198A-198B-198C.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Asian 198A-198B-198C with a grade of A in each course.

## Japanese BA

### Study Abroad

Early acquisition of Asian language skills aids in the timely completion of major requirements and enriches appreciation of Asian cultures. Students are encouraged, therefore, to complete up to a year of language study in approved programs of study abroad.

### Learning Outcomes

The Japanese major has the following learning outcomes:

- Demonstrated advanced written and oral knowledge of the Japanese language
- Demonstrated broad knowledge of Japanese cultural history from ancient times to the present

- Demonstrated specific skills and expertise, including research, analysis, and writing, of a specialized topic in the study of Japanese language and culture
- Ability to identify primary sources in Japanese and analyze them within their historical and cultural context
- Working knowledge of scholarly discourse on a specialized topic in Japanese culture
- Conception and execution of research projects that identify and engage with a specialized topic in Japanese culture

## Entry to the Major

### Transfer Students

Transfer applicants to the Japanese major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of Japanese and one Japanese civilization or images of Japan course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Japanese 6 or 10 or equivalent, and one course from 50, 70, 75, 80, Asian 30.

### The Major

*Required:* Eleven courses as follows: (1) five language courses in modern or premodern language or texts selected from Japanese 100A and 100B and 100C or 100S, 100R, 101A and 101B and 101C or 101S, 103A, 103B, 104, 105A, 105B, 110A, 110B, M120, CM123, 130A, 130B, 140A, 140B, 140C, C149, 165, (2) one literature course selected from C150, 151, 154, M156, 157, C159, 170, 172, 174, or 191A, (3) three elective courses on Japan selected from C112, CM122, CM123, CM127, 155, CM160, 161, 165, C171, C182, 191B, 191C, or from items 1 and 2 above not used to fulfill another requirement, and (4) two additional upper-division elective courses within the department but outside Japan.

### Honors Program

The honors program is a three-term sequence (Asian 198A-198B-198C), taken in addition to requirements for the major, that culminates in the submission of a 40- to 60-page thesis. In most circumstances courses 198A-198B-198C are taken in the senior year (fall, winter, and spring quarters), although students also have the option of taking course 198A in spring quarter of their junior year. Students are expected to use an Asian language in their research, with the scope of language work to be determined in consultation with their faculty adviser.

## Policies

### Honors Program

#### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA.

Students should apply for admission by spring quarter of their junior year and, at the time of admission, must have completed at least two upper-division courses in their major. For application forms and more information, contact the departmental undergraduate adviser.

### Requirements

Highest honors, honors, or no honors are awarded as determined by the faculty thesis director and the departmental honors committee.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Asian 198A-198B-198C.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Asian 198A-198B-198C with a grade of A in each course.

## Korean BA

### Study Abroad

Early acquisition of Asian language skills aids in the timely completion of major requirements and enriches appreciation of Asian cultures. Students are encouraged, therefore, to complete up to a year of language study in approved programs of study abroad.

## Learning Outcomes

The Korean major has the following learning outcomes:

- Demonstrated advanced knowledge of written and spoken Korean
- Broad knowledge of Korean history, literature, thoughts, and religions from the ancient to the modern era
- Engagement in critical comparisons of historical and other narratives
- Relation of historical and cultural developments in Korea with other countries in East Asia and beyond
- Discussion of the scholarly literature about a topic in an area of expertise
- Analysis of texts, cultural objects, and historical developments based on disciplinary knowledge
- Conduct research projects using primary and second source materials critically and persuasively

## Entry to the Major

### Transfer Students

Transfer applicants to the Korean major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of Korean and one Korean civilization course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Korean 6 or 6A or 10 or equivalent, and one course from 40, 50, M60, 70, 80, Asian 30.

### The Major

*Required:* Eleven courses as follows: (1) five language courses selected from Korean 100A, 100B, 100C, 101A and 101B and 101C or 101I, 102A, 102B, 102C, 103A, 103B, 103C, 104A, 104B, 104C, C105A, C105B, C105C, 106A, 106B, 106C, 107A, 107B, 107C, CM120, 124, 165, 176, 178, (2) one literature course selected from 130A, 130B, C150, or C151, (3) three elective courses on Korea selected from CM127, C149, 154, 155, CM160, 165, 172, 175, C177, 180A, 180B, 180C, 181, 182, 183, 184A, 184B, 185, M186, 187, 191A, 191B, or from items 1 and 2 above not used to fulfill another requirement, and (4) two additional upper-division elective courses within the department but outside Korea.

### Honors Program

The honors program is a three-term sequence (Asian 198A-198B-198C), taken in addition to requirements for the major, that culminates in the submission of a 40- to 60-page thesis. In most circumstances courses 198A-198B-198C are taken in the senior year (fall, winter, and spring quarters), although students also have the option of taking course 198A in spring quarter of their junior year. Students are expected to use an Asian language in their research, with the scope of language work to be determined in consultation with their faculty adviser.

## Policies

### Honors Program

#### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year and, at the time of admission, must have completed at least two upper-division courses in their major. For application forms and more information, contact the departmental undergraduate adviser.

### Requirements

Highest honors, honors, or no honors are awarded as determined by the faculty thesis director and the departmental honors committee.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Asian 198A-198B-198C.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in up-

per-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Asian 198A-198B-198C with a grade of A in each course.

## Southeast Asian Studies BA

### Study Abroad

Early acquisition of Asian language skills aids in the timely completion of major requirements and enriches appreciation of Asian cultures. Students are encouraged, therefore, to complete up to a year of language study in approved programs of study abroad.

### Learning Outcomes

The Southeast Asian Studies major has the following learning outcomes:

- Appreciation of the region's broader socio-cultural and historical patterns
- Understanding of commonalities of societies and peoples across region
- Appreciation of distinctive elements, particularly between island and mainland populations
- Understanding of cultural, historical, and social contours of a particular Southeast Asian country
- Ability to assess social contours of Southeast Asian societies broadly
- Understanding of ways in which dynamics within communities and other social structures shape the course of events
- Understanding and assessment of distinct challenges that have shaped the region's pre-modern historical trajectory
- Understanding and assessment of complex challenges that face contemporary societies in the region
- Appreciation of the central place of religion, religious diversity, and religious conflict in Southeast Asian societies
- Reading and assessment of cultural documents—literature, oral tales, performances—in their respective sociocultural contexts
- Conduct specialized research on Southeast Asian societies, history, or culture, making effective and critical use of primary and secondary source materials
- Formulation of effective written and oral arguments that address important themes and issues in Southeast Asian arts and cultures, in ways that are historically appropriate and relevant

### Entry to the Major

#### Transfer Students

Transfer applicants to the Southeast Asian Studies major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one year of Filipino/Tagalog, Indonesian, Thai, or Vietnamese; and one course in Asian civilization, Asian languages and cultures, introduction to Asian religions, or introduction to Buddhism.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

Required: Completion of the intermediate sequence in one Southeast Asian language offered by the department (e.g., Filipino 6, Indonesian 6, Thai 6, Vietnamese 6, or equivalent); Southeast Asian Studies 50; and one religion, literature, or culture course (e.g., Asian 30, Southeast Asian M60, 70, or Vietnamese 40) within the department.

### The Major

Required: Eleven courses as follows: (1) one upper-division language course in a Southeast Asian language offered by the department selected from Indonesian 100A, 100B, 100C, Thai 100A, 100B, 100C, or Vietnamese 100A, 100B, 100C; (2) eight upper-division elective courses on Southeast Asia selected from Anthropology 116S, Asian American Studies 123, 125, 133, 134, M164, M171D, 171E, 176, Art History 156, Filipino 170, History 176A, 176B, 176C, 176E, 177A, 177B, 187M, Political Science 158, Southeast Asian Studies C120, 130, 135, C140, C150, 157, 160, 170A, 170B, 170C, Vietnamese CM155, 180A, or 180B; (3) two upper-division electives on other parts of Asia (China, Japan, Korea, South Asia) within the department or offered by another department (History, Geography, Anthropology, Political Science, Asian American Studies).

### Policies

#### Preparation for the Major

Students must complete the preparation courses with at least a 2.0 grade-point average.

#### The Major

Students may petition to satisfy (1) with an independent study (course 199) with a faculty member or a course in translation where the student's written work is primarily in the target language.

## Undergraduate Minors

### Asian Humanities Minor

The Asian Humanities minor is designed to recognize a serious commitment to the study of Asian cultures. Lower-division survey courses in civilizations and religious traditions provide students with a solid foundation in the diverse cultural heritages of Asia. Students may fulfill upper-division requirements from a wide variety of courses in all aspects and historical periods of Asian humanities.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better, have completed 45 units at UCLA and all lower-division requirements for the minor, and consult with the departmental undergraduate adviser.

### The Minor

*Required Lower-Division Courses (10 units):* Two courses from Asian 30, M60, M60W, M61,

Chinese 50, M60, M60W, Japanese 50, 70, 75, 80, Korean 40, 50, M60, 70, 80, South Asian M60, Southeast Asian M60.

*Required Upper-Division Courses (20 units):*

Five courses in the department concerning Asian culture (e.g., film, folklore, history, linguistics, literature, mythology, religious studies).

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units must be taken in residence at UCLA.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Asian Languages Minor

The Asian Languages minor is designed to recognize a serious commitment to the study of Asian languages. It is especially suited for students who wish to augment their major program in the College of Letters and Science with mastery of an Asian language. The lower-division survey course in civilization or religious tradition provides students with an essential introduction to the diverse cultural heritages of Asia. In the upper-division languages courses, students gain advanced skills in speaking, aural comprehension, reading, and writing an Asian language.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better, have completed 45 units at UCLA and all lower-division requirements for the minor, and consult with the departmental undergraduate adviser.

### The Minor

*Required Lower-Division Courses (10 units):*

Completion of the intermediate sequence in one Asian language offered by the department (e.g., Chinese 6, 10, Filipino 6, Hindi-Urdu 100C, Indonesian 6, Japanese 6, 10, Korean 6, 10, Thai 6, Vietnamese 6, or equivalent) and Asian 30 or one civilization course (e.g., Chinese 50, Japanese 50, 70, Korean 50) or one introduction to religions course (e.g., Asian M60, M60W, M61, Chinese M60, M60W, Korean M60, South Asian M60, Southeast Asian M60) or one culture course (e.g., Japanese 75, 80, Korean 40, 70, 80) within the department.

*Required Upper-Division Courses (20 units):*

Three language courses in one Asian language offered by the department and two electives within the department.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units must be taken in residence at UCLA.

Each minor course must be taken for a letter grade, and students must have an overall



grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Asian Languages and Cultures MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Teaching Asian Languages MA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Asian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Visible Language: Study of Writing. (5)** (Same as Indo-European Studies M20, Near Eastern Languages M20, Slavic M20, and Southeast Asian M20.) Lecture, three hours; discussion, one hour. Consideration of concrete means of language representation in writing systems. Earliest representations of language known are those of Near East dating to end of 4th millennium BC. While literate civilizations of Egypt, Indus Valley, China, and Mesoamerica left little evidence of corresponding earliest developments, their antiquity and, in case of China and Mesoamerica, their evident isolation mark these centers as loci of independent developments in writing. Basic characteristics of early scripts, assessment of modern alphabetic writing systems, and presentation of conceptual basis of semiotic language representation. Origins and development of early non-Western writing systems. How Greco-Roman alphabet arose in 1st millennium BC and how it compares to other modern writing systems. P/NP or letter grading.

**30. Languages and Cultures of Asia. (5)** Lecture, three hours; discussion, one hour. Comparative perspective on Asian languages, with emphasis on three major East Asian languages—Chinese, Japanese, and Korean—to show what they share and how they differ in terms of linguistic features, historical development, and larger cultural settings in which these three languages are used. P/NP or letter grading.

**M60. Introduction to Buddhism. (5)** (Same as Religion M60A.) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course M60W. Knowledge of Asian languages not required. General survey of development of Buddhism in

India, with focus on those religious doctrines and meditative practices most essential to various Asian traditions of Buddhism. Letter grading.

**M60W. Introduction to Buddhism. (5)** (Same as Religion M60W.) Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course M60. Knowledge of Asian languages not required. General survey of Buddhist worldview and lifestyle, with focus on those religious doctrines and meditative practices most essential to various Asian traditions of Buddhism. Particular attention to problems involved in study of religion. Satisfies Writing II requirement. Letter grading.

**M61. Introduction to Zen Buddhism. (5)** (Same as Religion M61.) Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. Introduction to Zen traditions and to interplay between Zen and other fundamental cultural and religious concerns in East Asia. Topics include role of Zen within Buddhist thought and practice, artistic and literary arts, society, and daily life. Letter grading.

**70A-70B-70C. Popular Culture in East Asia. (5-5-5)** Lecture, three hours; discussion, one hour. Popular culture in China, Japan, Korea, and Vietnam. Topics include popular religion, language, literature, arts, material culture, cinema, and music. Themes include identities, gender, sexuality, and class relations. Letter grading. **70A.** 17th through 19th Centuries; **70B.** 1895 to 1945; **70C.** From 1945.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Methods in Asian Linguistics. (4)** Lecture, three hours; discussion, one hour. Research methodologies for dealing with Asian languages, with emphases on bibliographical, data, and professional resources, issues in analyzing and presenting language examples, explaining language phenomena beyond what is observed, cross-linguistic comparisons, oral presentation skills, and writing reports in organized ways. P/NP or letter grading.

**104. Asian Language Pedagogy. (4)** Lecture, three hours; discussion, one hour. Required of all Asian Languages and Linguistics majors. Current issues in teaching Asian languages. Pedagogical grammar, curricular development, social, cultural, and cognitive foundations of Asian language acquisition, best practices in teaching Asian language writing systems, special issues in teaching heritage students, comparisons of K-12 language teaching and college language teaching, assessment methods, and emerging trends in Asian language teaching. P/NP or letter grading.

**120FL. Readings in East Asian Languages. (2)** Seminar, two hours. Requisite: Chinese 6 or 6A or 6C or Japanese 6 or Korean 6 or 6A. Enforced corequisite: course 120. Additional work in major East Asian languages to enrich and augment work assigned in

course 120, including reading, writing, and other exercises in Chinese, Japanese, and Korean. P/NP or letter grading.

**121. Field Methods in Asian Languages and Cultures. (3)** Lecture, three hours. Recommended preparation: at least one year of one Asian language. Examination and application of methodologies to better understand language and culture acquisition by working directly with native speaker of Asian language and/or through available materials. One language per term to be selected from languages spoken in Southeast Asia, South Asia, and East Asia. May be repeated for credit. P/NP or letter grading.

**CM124. Teaching and Learning of Heritage Languages. (4)** (Same as Near Eastern Languages CM114 and Slavic CM114.) Lecture, three hours. Consideration of issues relevant to heritage language learners (HLL) and to heritage language (HL) instruction. Readings and discussion on such topics as definitions of HLLs and HLLs; linguistic, demographic, sociolinguistic, and sociocultural profile of HLLs, particularly HL groups most represented among UCLA students; institutional and instructor attitudes toward HLLs; impact of student motivation and expectations on HL curriculum and teaching approaches; similarities and differences between HLLs and foreign language learners (FLLs) regarding teaching methods and materials; diagnostic testing and needs analysis; use of oral/aural proficiency as springboard for literacy instruction; optimization of instruction of mixed HL and FL classes. Action research component included. Concurrently scheduled with course CM224. P/NP or letter grading.

**130. Ideas of Culture in East Asian Studies. (4)** Lecture, three hours. Knowledge of Asian languages not required. Literature and intellectual discourse of modern Japan and Korea from 1910 to 1945. Letter grading.

**135. Asian Foodways across Borders. (4)** Lecture, two and one half hours. Examination of Asian foodways from 19th century to present, looking at how Asian and Western foods have impacted each other as they cross borders. Offers insight into how political, economic, and cultural forces of globalization manifest themselves in everyday life. Focus is on East Asian cuisines, but students are encouraged to incorporate additional information on South and Southeast Asian cuisines. P/NP or letter grading.

**151. Buddhist Literature in Translation. (4)** Lecture, three hours. Recommended preparation: prior course on Buddhism or traditional Asian religions. Knowledge of Asian languages not required. Readings from variety of Buddhist literature of Indic and non-Indic origin, with emphasis on key Buddhist themes and critical issues in cross-cultural interpretations of Asian religious texts. Letter grading.

**152. Tibetan Buddhism. (4)** Lecture, three hours. Knowledge of Asian languages not required. Survey of thought and practices of Buddhism in Tibet from its beginnings to present. Letter grading.

**155. Buddhism, Film, and Media. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended requisite: course M60 (or Religion M60A) or M60W (or Religion M60W). Examination of issues related to Buddhism in globalizing world, with focus on changing and diverse presentations of Buddhism in film, print, and new media. P/NP or letter grading.

**158. Sinophone Literature: Theories and Texts. (4)** Lecture, three hours. Preparation: one upper-division humanities course. Survey of foundational theories of Sinophone studies concerning issues such as Chineseness, diaspora, ethnicity, identity, and multilingualism. Reading of key Sinophone literary texts from Asia. Letter grading.

**161. Topics in Asian Religions. (4)** Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. In-depth examination of selected topics in one or more religious traditions of Asia. Topics vary, but may include death, gender, and state and religion. May be repeated for credit with topic change. Letter grading.

**162. Buddhist Meditation Traditions. (4)** Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. Survey of theory and practice

of meditation in Buddhism, with emphasis on Theravada and Zen schools. Topics include various typologies of meditation, symbiotic relationship between meditation and soteriology, and processes by which doctrinal innovation prompts changes in meditative praxis. Letter grading.

**163. Buddhism across Boundaries. (4)** Lecture, two hours; discussion, one hour. Recommended preparation: prior course on Buddhism or traditional Asian religions. Knowledge of Asian languages not required. Investigation of various themes in development of Buddhist traditions across historical periods as well as national and cultural boundaries, including issues of praxis, politics, and translation. Letter grading.

**164. Buddhism and Early Religious History of Pakistan, Afghanistan, and Central Asia: Introduction. (4)** Lecture, three hours. Knowledge of Asian languages not required. Survey of regions and religions of Central Asia, especially Buddhism in Afghanistan and Pakistan. Topics include archaeological, art historical material, and linguistic approaches to history of religions. Letter grading.

**C170. Approaches to Study of Religion. (4)** Seminar, three hours. Investigation of many ways in which religion and religions may be studied, including anthropological, sociological, psychological, phenomenological, political, reductionist, and other approaches. Readings of primary and secondary sources of modern scholarship. Concurrently scheduled with course C270. Letter grading.

**184. Women in History: East Asia. (4)** Lecture, three hours. Knowledge of Korean not required. Survey of East Asian histories, cultures, and societies from perspective of women and women's empowerment to see how gendered concepts are mediated and reconstructed through negotiations by women and men with processes of political, social, and cultural changes. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Asian Languages and Cultures. (1)** Seminar, one hour. Corequisite: course 198A or 198B or 198C or 199. Designed to bring together advanced undergraduate students undertaking individual supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for credit. P/NP grading.

**191A. Variable Topics Research Seminars: Life Writing in East Asia. (4)** Seminar, three hours. Research seminar on selected topics. Readings of biography and autobiography as elements of East Asian cultural traditions, with focus rotating between China, Japan, and Korea. Readings in English and relevant East Asian languages, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**191B. Variable Topics Research Seminars: Buddhist Studies. (4)** Seminar, three hours. Limited to juniors/seniors. Research seminar on selected topics in Buddhist studies. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**191H. Honors Research Seminars: Asian Languages and Cultures. (4)** Seminar, three hours. Limited to departmental and College honors students. Introduction to research methods and critical approaches to

study of Asia in preparation for writing of senior honors thesis. May be repeated for credit. Letter grading.

**193. Speaker Series Seminars: Asian Languages and Cultures. (2)** Seminar, two hours. Limited to undergraduate students. Introduction to latest scholarship in field of Asian studies. Attendance at selected scholarly presentations required, as well as sessions with faculty adviser to discuss presentations and published works of speakers. May be repeated for credit. P/NP grading.

**195. Community Internships in Asian Languages and Cultures. (4)** Tutorial, one hour; fieldwork, eight hours. Limited to juniors/seniors. Internship in supervised setting in community cultural or organizational setting. Students meet on regular basis with instructor and provide periodic journal reports of their experience. Final paper that combines academic research and knowledge gained from community experience required. Individual contract with supervising faculty member required. P/NP or letter grading.

**198A-198B-198C. Honors Research in Asian Languages and Cultures. (4-4-4)** Tutorial, three hours. Limited to junior/senior departmental majors. May be repeated for credit. Individual contract required. **198A.** Preparation: one undergraduate departmental seminar. Development of honors thesis under direct supervision of faculty member. Letter grading. **198B.** Enforced prerequisite: course 198A. Continuation of work initiated in course 198A. Presentation of research and relevant progress to supervising faculty member. In Progress grading (credit to be given only on completion of course 198C). **198C.** Enforced prerequisite: course 198B. Completion of research developed in courses 198A, 198B. Presentation of honors project to supervising faculty member. Letter grading.

**199. Directed Research in Asian Languages and Cultures. (2 to 8)** Tutorial, to be arranged. Recommended preparation: advanced reading knowledge of one Asian language. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated once with consent of instructor. Individual contract required. Letter grading.

## Graduate Courses

**200. Research Methods in East Asian Linguistics. (4)** Seminar, three hours. Research methodologies for East Asian languages, with emphasis on compiling bibliographic data and using professional resources for research. Examination of issues in analyzing language examples, theoretical implications of linguistic data, and applications of functional linguistics in order to explain language phenomena. S/U or letter grading.

**201. Proseminar: Approaches to Buddhist Studies. (4)** Seminar, three hours. Designed for graduate students in Buddhist studies. Introduction to history of field, bibliography, relations with other disciplines, and current issues and research trends. S/U or letter grading.

**202. Proseminar: Functional Approaches to Japanese/Korean Linguistics. (4)** Seminar, four hours. Preparation: three years of Japanese or Korean, one year of any East Asian language, one functional linguistics course. Survey of recent empirical and theoretical research in syntax, semantico-pragmatics, theory of language change, and comparative sociolinguistics in Japanese/Korean. May be repeated for credit with consent of instructors. S/U or letter grading.

**203. Variable Topics in East Asian Linguistics. (4)** Seminar, three hours. Advanced course that explores topics in East Asian linguistics through critical reading of current research on Asian languages and in-depth analysis of linguistic data. Topics include linguistic structure, communicative function, pragmatics, language, society, and culture, and language change. May be repeated for credit. S/U or letter grading.

**204A-204B. Issues and Practices in Teaching Asian Languages. (4-4)** Lecture, three hours. Course 204A is enforced requisite to 204B. Critical reading and discussion of major pedagogical issues in teaching Asian languages (chiefly Chinese, Japanese, Korean) as second languages, with focus on second language

acquisition theories and best practices as related to Asian language teaching. In Progress (204A) and S/U or letter (204B) grading.

**205. Variable Topics in East Asian Culture and History. (4)** Seminar, three hours. Selected topics in East Asian culture and history, with focus on China, Japan, and Korea. May be repeated for credit with topic change. S/U or letter grading.

**206A. MA Practicum: Issues in Teaching Asian Languages and Classroom Practices. (4)** Seminar, two hours; teaching practice, two hours. Training and supervised Asian language practicum in form of in-person, online, and/or peer-based instructional activities for MA students under training to become language instructors at K-12 or postsecondary level. Activities generally involve instruction, tutorial, assessment, material development, and other professional practices, with goal for students to gain actual experience. Discussion includes varied aspects of language teaching as profession. S/U or letter grading.

**206B. MA Practicum: Instructional Apprenticeship in Teaching Asian Languages. (4)** Seminar, three hours; teaching practice, two to four hours. Training and supervised Asian language practicum in form of in-person, online, and/or peer-based instructional activities for MA students under training to become language instructors at K-12 or postsecondary level. Activities generally involve lesson design, delivering instructions and tutorials, preparing and performing assessment, material development, and other professional practices, with goal for students to gain actual experience as language teacher. Discussion provides forum to examine varied aspects of language teaching as profession. S/U or letter grading.

**206C. MA Practicum: Best Practices in Teaching Asian Languages. (4)** Seminar, three hours; teaching practice, two hours. Training and supervised Asian language practicum in form of in-person, online, and/or peer-based instructional activities for MA students training to become language instructors at K-12 or postsecondary level. Activities include instruction, tutorial, assessment, material development, and other professional practices, with goal for students to gain actual experience on campus and in community-based language educational settings. S/U or letter grading.

**210. Proseminar: Cultural and Comparative Studies. (4)** Seminar, three hours. Designed for graduate students. Introduction to theoretical topics relevant to comparative study of East Asian cultures in modern period. Readings include Western theoretical works balanced with texts taking congruent approaches to East Asian topics. S/U or letter grading.

**215. Seminar: Cultural Studies Theory. (2)** Seminar, two hours. Requisite: course 210. Reading and discussion of recent theoretical works in cultural studies. S/U grading.

**216. Seminar: History and Asia. (4)** Seminar, three hours. Designed for graduate students. Readings and discussion of major historiographical trends, with focus on how they have been applied to Asia. Topics include Marxist histories, Annales school and cultural history, microhistories, gender, space, historical memory, postcolonial histories, subaltern, and modernity and Asia. S/U or letter grading.

**220A-220B. Seminars: Topics in Cultural Studies. (4-4)** Seminar, three hours. Complements course 210. Further investigation of methodology and materials of cultural studies in connection with specific topics selected by instructors. May be repeated for credit. In Progress (220A) and letter (220B) grading.

**222A-222B. Corpus Linguistics. (4-4)** Seminar, three hours. Construction and exploitation of computerized language corpora for studying issues in areas such as lexicology, discourse grammar, language change and variation, language learning, and teaching. Discussion of special issues in working with East Asian language corpora. In Progress (222A) and S/U or letter (222B) grading.

**CM224. Teaching and Learning of Heritage Languages. (4)** (Same as Near Eastern Languages CM214 and Slavic CM214.) Lecture, three hours. Consideration of issues relevant to heritage language learners (HLL) and to heritage language (HL) instruc-



tion. Readings and discussion on such topics as definitions of HLs and HLLs; linguistic, demographic, sociolinguistic, and sociocultural profile of HLLs, particularly HL groups most represented among UCLA students; institutional and instructor attitudes toward HLLs; impact of student motivation and expectations on HL curriculum and teaching approaches; similarities and differences between HLLs and foreign language learners (FLLs) regarding teaching methods and materials; diagnostic testing and needs analysis; use of oral/aural proficiency as springboard for literacy instruction; optimization of instruction of mixed HL and FL classes. Action research component included. Concurrently scheduled with course CM124. S/U or letter grading.

**230A-230B. Seminars: Theoretical Topics in East Asian Literature. (4-4)** Seminar, three hours. Preparation: reading knowledge of at least one East Asian language. Concerns of literary theory that are brought to fore by reading of literature from or about East Asia. Readings from both Western and Eastern theorists; issues of translation, comparison, and categorization. In Progress (230A) and letter (230B) grading.

**240A-240B. Seminars: Topics in East Asian Literary History. (4-4)** Seminar, three hours. Preparation: reading knowledge of at least one East Asian language. Critical issues common to literary historiography in East Asia, including periodization, canon, ideology, interaction between high and low culture, written and oral, etc. In Progress (240A) and letter (240B) grading.

**243. Translation Workshop: East Asian Texts. (2)** Seminar, two hours. Prerequisite: Chinese 200A or Japanese 200 or Korean 200. Translation, grammatical analysis, and discussion of selections from premodern texts that enjoyed classical status throughout East Asia. S/U grading.

**245A-245B. Seminars: Position of Modernity in East Asian Literature. (4-4)** Seminar, three hours. Preparation: at least five years of one East Asian language. Designed for graduate students. Course 245A concerned with conceptual architecture and archaeology of modernity, with readings largely from European sources. In-class debate probes relevance of these readings for work as Asianists. Focus on Asian writings in course 245B. In Progress (245A) and letter (245B) grading.

**255. Topics in Southeast Asian Literature and/or Cinema. (4)** Seminar, three hours. Knowledge of one Southeast Asian language recommended but not required. Theoretical concerns raised by works from Southeast Asia, one Southeast Asian nation, and/or Southeast Asian diasporas. Critical and historical examination of literary and/or film representations connected to practices of empire, nation, diaspora, and globalization. May be repeated for credit. S/U or letter grading.

**261A-261B-261C. Current Issues in Buddhist Studies. (2-2-2)** Seminar, 90 minutes. Knowledge of Asian languages not required. Critical reading and discussion of recent scholarship in Buddhist studies and closely related fields. May be repeated for credit. S/U grading.

**265A-265B. Seminars: Selected Topics in Buddhist Studies. (4-4)** Seminar, three hours. Coverage varies. May be repeated for credit. In Progress (265A) and letter (265B) grading.

**C270. Approaches to Study of Religion. (4)** Seminar, three hours. Investigation of many ways in which religion and religions may be studied, including anthropological, sociological, psychological, phenomenological, political, reductionist, and other approaches. Readings of primary and secondary sources of modern scholarship. Concurrently scheduled with course C170. Letter grading.

**281A-281B. Field Methods for Study of East Asian Oral Traditions. (4-4)** Seminar, three hours. Description and evaluation of modern approaches to collecting and documenting oral tradition as text, performance, and sociocultural event, providing hands-on experience in fieldwork and archiving methods. Consideration of approaches ranging from written tran-

scription and textualization to audio and video presentations. In Progress (281A) and S/U or letter (281B) grading.

**M292. Japan in Age of Empire. (4)** (Same as Anthropology M247P and History M286.) Seminar, three hours. Designed for graduate students. Since late 19th century, Japan expanded its empire into East and Southeast Asia. Coverage of that period and array of anthropological studies conducted in Japan's colonies and occupied areas in this hardly explored area of study of colonialism. S/U or letter grading.

**293. Graduate Student Colloquium. (4)** Research group meeting, three hours. Designed to provide graduate students in Asian studies with opportunity to present their research to other students and faculty members. S/U grading.

**297. Life Writing in East Asia. (4)** Seminar, three hours. Readings of biography and autobiography as elements of East Asian cultural traditions, with focus rotating between China, Japan, and Korea. Readings in English and relevant East Asian languages. Letter grading.

**299. Independent Study. (2 to 6)** Tutorial, to be arranged. Designed for graduate students. Guided research and writing of research paper. May be repeated, but only 4 units may be applied toward MA degree. May not be applied toward PhD degree. S/U or letter grading.

**301. Teaching East Asian Language as Foreign Language. (4)** Lecture, four hours. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Asian Languages at College Level. (4)** Seminar, three hours. Preparation: appointment as teaching assistant in East Asian languages and cultures or South and Southeast Asian languages and cultures. Study in team-teaching, teaching methodology, developing course materials, and testing. Participation in peer observations and workshops required. Students receive unit credit toward full-time equivalence but not toward any degree requirements. S/U grading.

**496C. Computer Technologies for Teaching College-Level Chinese. (2)** Lecture, two hours. Intended for current or potential teaching assistants in Chinese. Introduction to tools and technology designed to enrich classroom learning, help effectively manage student records, and expose students to current computer software and web resources. May not be applied toward degree requirements. S/U grading.

**496E. Computer Technologies for Teaching College-Level East Asian Languages. (2)** Lecture, two hours. Intended for current or potential teaching assistants in East Asian languages. Introduction to tools and technology designed to enrich classroom learning, help effectively manage student records, and expose students to current computer software and web resources. May not be applied toward degree requirements. S/U grading.

**496J. Computer Technologies for Teaching College-Level Japanese. (2)** Lecture, two hours. Intended for current or potential teaching assistants in Japanese. Introduction to tools and technology designed to enrich classroom learning, help effectively manage student records, and expose students to current computer software and web resources. May not be applied toward degree requirements. S/U grading.

**496K. Computer Technologies for Teaching College-Level Korean. (2)** Lecture, two hours. Intended for current or potential teaching assistants in Korean. Introduction to tools and technology designed to enrich classroom learning, help effectively manage student records, and expose students to current computer software and web resources. May not be applied toward degree requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor,

department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Studies. (2 to 4)** Tutorial, to be arranged. S/U grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (4 to 8)** Tutorial, to be arranged. S/U grading.

**598. Research for and Preparation of MA Thesis. (4 to 8)** Tutorial, to be arranged. Maximum of 8 units may be applied toward MA degree requirements. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (4 to 8)** Tutorial, to be arranged. S/U grading.

## Chinese

### Lower-Division Courses

**1. Elementary Modern Chinese. (5)** Lecture, three hours; discussion, two hours. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Introduction to fundamentals of standard Chinese, including pronunciation, grammar, and Chinese characters, with emphasis on all four basic language skills—speaking, listening comprehension, reading, and writing. P/NP or letter grading.

**1A. Elementary Modern Chinese for Advanced Beginners. (5)** Lecture, three hours; discussion, two hours. Recommended preparation: ability to speak and understand Mandarin or other Chinese dialects at elementary levels. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Designed for students who already have certain listening and speaking skills in Mandarin or other Chinese dialects at elementary levels. Training in all four basic language skills (speaking, listening, reading, and writing). P/NP or letter grading.

**2. Elementary Modern Chinese. (5)** Lecture, three hours; discussion, two hours. Enforced prerequisite: course 1 with grade of C or better or Chinese placement test. First-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 1. P/NP or letter grading.

**2A. Elementary Modern Chinese for Advanced Beginners. (5)** Lecture, three hours; discussion, two hours. Enforced prerequisite: course 1A with grade of C or better or Chinese placement test. First-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 1A. P/NP or letter grading.

**3. Elementary Modern Chinese. (5)** Lecture, three hours; discussion, two hours. Enforced prerequisite: course 2 with grade of C or better or Chinese placement test. First-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 2. P/NP or letter grading.

**3A. Elementary Modern Chinese for Advanced Beginners. (5)** Lecture, three hours; discussion, two hours. Enforced prerequisite: course 2A with grade of C or better or Chinese placement test. First-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 2A. P/NP or letter grading.

**3R. Accelerated Modern Chinese for Advanced Beginners. (5)** Lecture, three hours; discussion, one hour. Prerequisite: Chinese placement test or department consent. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. For students who wish to complete one-year foreign language requirement at accelerated pace. P/NP or letter grading.

**4. Intermediate Modern Chinese. (5)** Lecture, three hours; discussion, one hour. Prerequisite: course 3 or 8 with grade of C or better or Chinese placement test. Second-year Chinese. Not open to students who have

learned, from whatever source, enough Chinese to qualify for more advanced courses. Designed to strengthen communicative skills of listening, speaking, reading, and writing. Grammar reviews, knowledge of idiomatic expressions, and both traditional and simplified characters. P/NP or letter grading.

**4A. Intermediate Modern Chinese for Advanced Students. (5)** Lecture, three hours; discussion, one hour. Requisite: course 3A with grade of C or better or Chinese placement test. Second-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Designed for students who already have certain listening and speaking skills in Mandarin or other Chinese dialects at intermediate levels. Training in all four basic language skills (speaking, listening, reading, and writing). P/NP or letter grading.

**5. Intermediate Modern Chinese. (5)** Lecture, three hours; discussion, one hour. Requisite: course 4 with grade of C or better or Chinese placement test. Second-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 4. P/NP or letter grading.

**5A. Intermediate Modern Chinese for Advanced Students. (5)** Lecture, three hours; discussion, one hour. Requisite: course 4A with grade of C or better or Chinese placement test. Second-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 4A. P/NP or letter grading.

**5C. Mandarin for Cantonese Speakers. (5)** Lecture, four hours. Enforced preparation: Chinese placement test. Designed for students who are Cantonese speakers and familiar with Chinese characters and who need to improve their pronunciation of standard Mandarin dialect. P/NP or letter grading.

**6. Intermediate Modern Chinese. (5)** Lecture, three hours; discussion, one hour. Requisite: course 5 with grade of C or better or Chinese placement test. Second-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 5. P/NP or letter grading.

**6A. Intermediate Modern Chinese for Advanced Students. (5)** Lecture, three hours; discussion, one hour. Requisite: course 5A with grade of C or better or Chinese placement test. Second-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Continuation of course 5A. P/NP or letter grading.

**6C. Mandarin for Cantonese Speakers. (5)** Lecture, four hours. Enforced requisite: course 5C or Chinese placement test. Designed for students who are Cantonese speakers and familiar with Chinese characters and who need to improve their pronunciation of standard Mandarin dialect. Completion of course 6C is equivalent to completion of course 6. P/NP or letter grading.

**8. Elementary Chinese: Intensive. (15)** Lecture, 10 hours; discussion, 10 hours. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Intensive course equivalent to courses 1, 2, and 3. Introduction to fundamentals of standard Chinese, including pronunciation, grammar, and Chinese characters, with emphasis on all four basic language skills—speaking, listening comprehension, reading, and writing. Offered in summer only. P/NP or letter grading.

**8A. Elementary Modern Chinese for Advanced Beginners: Intensive. (15)** Lecture, 10 hours; discussion, 10 hours. Intensive course equivalent to courses 1A, 2A, and 3A. Designed for students who already have some listening and speaking skills in Mandarin Chinese but do not have any reading and writing skills and for students who speak Chinese dialect other than Mandarin at home and have some knowledge of Chinese characters (i.e., can read some basic Chinese). Coverage of listening, speaking, reading, and writing skills. Offered in summer only. P/NP or letter grading.

**10. Intermediate Modern Chinese: Intensive. (15)** Lecture, 10 hours; discussion, 10 hours. Recommended preparation: course 3, 3A, or 8, or Chinese placement test or courses equivalent to elementary-level Chinese. Second-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Intensive course equivalent to courses 4, 5, and 6. Designed to strengthen communicative skills of listening, speaking, reading, and writing. Grammar reviews, knowledge of idiomatic expressions, and both traditional and simplified characters. Completion of course 10 is equivalent to completion of course 6. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**30. Chinese Language, Society, and Culture. (4)** Lecture, two hours; discussion, two hours. Recommended preparation: one to two years of college-level Chinese. Exploration of relationship between Chinese language, society, and culture. Discussion of fundamental role that language plays in Chinese social life and cultural practices while simultaneously exploring how social and cultural factors impact ways in which Chinese language is organized. Main focus on language and thought patterns, language and gender, language and politics, language and commerce, language and law, language and arts, and language and globalization. P/NP or letter grading.

**40. Popular Culture in Modern Chinese Societies. (5)** Lecture, three hours; discussion, one hour. Examination of modern Chinese popular culture in China, Taiwan, Hong Kong, and overseas Chinese communities. From fiction to film, music to MTV, and cartoons to karaoke, probing of popular as it has manifested itself in Chinese societies and tracing of its development over last century. P/NP or letter grading.

**50. Chinese Civilization. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 50W. Knowledge of Chinese not required. Introduction to most important aspects of Chinese culture. Topics include early Chinese civilization, historical development of Chinese society, issues of ethnicity, Chinese language and philosophy, and early scientific and technological innovation. P/NP or letter grading.

**50W. Chinese Civilization. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 50. Knowledge of Chinese not required. Introduction to most important aspects of Chinese culture. Topics include early Chinese civilization, historical development of Chinese society, issues of ethnicity, Chinese language and philosophy, and early scientific and technological innovation. Satisfies Writing II requirement. Letter grading.

**M60. Introduction to Chinese Religions. (5)** (Same as Religion M60B.) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course M60W. Knowledge of Chinese not required. General survey of religious life in China, with emphasis on everyday religious practice over doctrine, and themes common to Buddhism, Daoism, and Confucianism. P/NP or letter grading.

**M60W. Introduction to Chinese Religions. (5)** (Same as Religion M61W.) Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course M60. Knowledge of Chinese not required. General survey of religious life in China, with emphasis on everyday religious practice over doctrine, and themes common to Buddhism, Daoism, and Confucianism. Satisfies Writing II requirement. Letter grading.

**70. Introduction to Traditional Chinese Literature. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 70W. Prior knowledge of Chinese culture, literature, or language not required. Introduction to pre-20th-century

Chinese literary traditions, including selections from poetry, prose, fiction, and drama. P/NP or letter grading.

**70W. Classics of Chinese Literature. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 70. Prior knowledge of Chinese culture, literature, or language not required. Introduction to pre-20th-century Chinese literary traditions, including selections from poetry, prose, fiction, and drama. Satisfies Writing II requirement. Letter grading.

**80. Chinese Cinema: Pictures, Prisms, Products, Projections. (5)** Lecture, two hours; discussion, one hour; film viewing, three hours. Knowledge of Chinese not required. Introduction to history and major themes of Chinese cinema. Representative films studied in contexts of culture, society, politics, and economics, with reflections on changing meanings of both Chinese and cinema. May not be repeated for credit. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics in Chinese Culture. (4)** Lecture, three hours. Knowledge of Chinese language or culture not required. Variable topics course covering many different aspects of Chinese culture. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100A-100B-100C. Advanced Modern Chinese. (4-4-4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 6 or 10 with grade of C or better or Chinese placement test. Course 100A with grade of C or better or Chinese placement test is enforced requisite to 100B; course 100B with grade of C or better or Chinese placement test is enforced requisite to 100C. Third-year Chinese. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Materials selected from contemporary Chinese publications, with emphasis on social sciences. Texts analyzed for their linguistic features and social and cultural background. Readings, compositions, informal debates on topical issues, and oral presentations. P/NP or letter grading.

**100D-100E-100F. Advanced Modern Chinese for Heritage Speakers. (4-4-4)** Lecture, three hours; discussion, two hours. Enforced requisite: course 6A with grade of C or better or Chinese placement test. Course 100D with grade of C or better or Chinese placement test is enforced requisite to 100E; course 100E with grade of C or better or Chinese placement test is enforced requisite to 100F. Third-year Chinese for heritage speakers. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Materials selected from contemporary Chinese publications, with emphasis on social sciences. Texts analyzed for their lin-

guistic features and social and cultural background. Readings, compositions, informal debates on topical issues, and oral presentations. P/NP or letter grading.

**100I. Advanced Modern Chinese: Intensive. (12)** Lecture, 10 hours; discussion, 10 hours. Enforced requisite: course 6 or 10 with grade of C or better or Chinese placement test. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Intensive course equivalent to courses 100A, 100B, and 100C. Materials selected from contemporary Chinese publications, with emphasis on social sciences. Texts analyzed for their linguistic features and social and cultural background. Readings, compositions, informal debates on topical issues, and oral presentations. Offered in summer only. P/NP or letter grading.

**101A-101B-101C. Advanced Readings in Modern Chinese. (4-4-4)** For courses 101A, 101B: lecture, two hours; discussion, two hours; for course 101C: lecture, three hours; discussion, one hour. Requisite for courses 101A, 101B: course 100C or 100F or 100I or Chinese placement test; for course 101C: 101B or Chinese placement test. Not open to students who have learned, from whatever source, enough Chinese to qualify for more advanced courses. Advanced readings and discussion for students planning to do advanced coursework or research on China. Topics from magazines, journals, and books related to humanities and social sciences. Each course may be taken independently for credit. P/NP or letter grading (101C) and letter grading (101A, 101B).

**102A. Advanced Chinese for International Business. (4)** Lecture, three hours; discussion, one hour. Requisite: course 6 or 10 with grade C or better or Chinese placement test. Not open to native speakers. Designed to improve student language skills in service of business practice and ground language learning in authentic social cultural settings. Focus on oral and written business communication, cross-cultural communication, social etiquette in business conduct, Chinese economic and business climate, language of business and trade regulations, resources and environment, and business case studies. Letter grading.

**102B. Advanced Chinese for International Business. (4)** Lecture, three hours; discussion, one hour. Requisite: course 6 or 10 with grade C or better or Chinese placement test. Not open to native speakers. Doing business with China and understanding Chinese economy and business conducts require advanced level of Chinese language proficiency and deep understanding of Chinese society and culture. Designed to improve student language skills in service of business practice and ground language learning in authentic social cultural settings. Focus on oral and written business communication, cross-cultural communication, social etiquette in business conduct, Chinese economic and business climate, language of business and trade regulations, resources and environment, and business case studies. Letter grading.

**102I. Business Chinese. (8)** Lecture, eight hours; discussion, eight hours. Recommended preparation: two years of college-level Chinese. Not open to native speakers. Doing business with China and understanding Chinese economy and business conducts require intermediate to advanced level of Chinese language proficiency and deep understanding of Chinese society and culture. Designed to improve student language skills in service of business practice and ground language learning in authentic social cultural settings. Oral and written business communication, social etiquettes in business conduct, Chinese economic and business climate, business law and regulations, resources and environment, and business case studies. Offered in summer only. P/NP or letter grading.

**103. Topics in Chinese Language and Culture. (4)** Lecture, two hours; discussion, two hours. Recommended preparation: one to two years of college-level Chinese. Chinese language and culture for special purposes. Exploration of interdependent relation between Chinese language and culture. Introduction to basic concepts in sociocultural linguistics, discourse analysis, and technology to analyze Chinese language and cultural conventions expressed through verbal and non-verbal linguistic devices. Major coverage on

language use as reflected in various types of media: film, television, Internet, advertisement, etc. May be repeated for credit. P/NP or letter grading.

**105A-105B. Advanced Chinese Rhetoric and Critical Thinking. (4-4)** Lecture, three hours. Requisite: Chinese placement test. Designed for students who have completed secondary education or equivalent in Chinese. Focus on developing sophisticated Chinese rhetoric strategies in speaking and writing and critical thinking skills through use of Chinese language. Chinese texts and multimedia materials used as basis for in-depth analysis and understanding of contemporary topics in Chinese language, culture, and society. Each course may be taken independently for credit. Letter grading.

**C107A-C107B. Academic/Professional Chinese. (4-4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 101B or Chinese placement test. Intended to improve reading and writing skills in specific academic and professional subject areas for students who have studied general Chinese at advanced level, with coverage in Chinese humanities and social sciences, science and technology, medicine, and applied linguistics. Concurrently scheduled with courses C207A-C207B. P/NP or letter grading.

**108FL. Special Studies: Readings in Chinese. (2)** Seminar, two hours. Enforced requisite: course 100C or 100I or Chinese placement test. Students must be concurrently enrolled in affiliated main course. Additional work in Chinese to augment work assigned in main course, including reading, writing, and other exercises. May be repeated for credit. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Chinese. (2)** Tutorial, two hours. Requisite: course 100C or Chinese placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Chinese. May be repeated for credit. P/NP or letter grading.

**110A-110B-110C. Introduction to Classical Chinese. (4-4-4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 3 or Chinese placement test. Course 110A is enforced requisite to 110B, which is enforced requisite to 110C. Grammar and readings in selected premodern texts. P/NP or letter grading.

**C120. Introduction to Chinese Linguistics. (4)** Lecture, three hours; discussion, one hour. Recommended preparation: one to two years of college-level Chinese. Introduction to Chinese sound system, writing system and its reform, regional differences, major structural features, language in society and in cultural practices. Concurrently scheduled with course C240. Letter grading.

**124. Taiwanese Language and Culture. (4)** Lecture, two hours; discussion, one hour. Enforced requisite: course 3 or 8 or Chinese placement test. Taiyu, or Taiwanese (also known as Minnan, Hoklo, or Hokkien, depending on context or region), is language that most Taiwanese people use in daily lives, including everyday interaction and communication, entertainment, social and cultural events, etc. Examination of various manifestations of Taiyu in different forms of cultural production, including cinema, television series, pop music, animation, Gezai opera, glove puppetry, and other media. Discussion also of how these media have represented Taiwan's society and shaped its cultural landscape. P/NP or letter grading.

**125. Taiwanese Language and Expressive Cultures. (4)** Lecture, two hours; discussion, one hour. Enforced requisite: course 3 or 8 or Chinese placement test. Taiyu, or Taiwanese (also known as Minnan, Hoklo, or Hokkien, depending on context or region), is language that most Taiwanese people use in daily lives, including everyday interaction and communication, entertainment, social and cultural events, etc. Expressive culture is one way by which group of people express their ideas, emotions, values, ideologies, and belief systems through sensorial and aesthetic performances germane to everyday life. Investigation of expressive cultures through Taiyu language is important way to understand multi-faceted society of Taiwan as vital site of cultural production. Examination of various manifestations of Taiyu in different forms of cultural production including pop music; traditional and modern theatre including Gezai opera, glove puppetry,

and others; documentary; and other media. Discussion also of how these media have represented Taiwan's society and shaped its cultural landscape. P/NP or letter grading.

**130A-130B. Readings in Modern Chinese Literature. (4-4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 100B or Chinese placement test. Readings and discussion of works of modern Chinese literature. Each course may be taken independently for credit. Letter grading.

**131. World Sinophone Literature: Theories and Texts. (4)** Lecture, two hours; discussion, one hour. Readings in original language. Exploration of Sinophone as analytic category for literature written in Sinitic languages. Theories of Sinophone and literary texts from Taiwan, Hong Kong, Malaysia, China, and elsewhere. Letter grading.

**135. Chinese-Language Film and Culture. (4)** Lecture, two hours; discussion, one hour; film viewing, three hours. Enforced requisite: course 100C or 100I or Chinese placement test. Viewing and discussion of Chinese films, along with relevant readings in Chinese. Letter grading.

**C137. How to Read Chinese Poetry. (4)** Lecture, two and one half hours; discussion, one hour. From earliest vestiges of Chinese poetry more than two thousand years ago, to doors of contemporary Chinese homes, and to San Francisco's Angel Island in late 19th century, few students of China (or pre-modern East Asia) go far without suddenly encountering pervasive presence of Chinese poetry (shi). Examination of why poetry, roles poetry plays in Chinese culture, and how to read it. Basic beginning in learning how to read Chinese classical poetry. Study is topical and accumulative, designed to have effect of building blocks and progressive overlays. Introduction to language, forms, and history of shi poetry. Study of smallest integral unit of Chinese lyric poetry, individual words and their selection; formal elements and rhetorical features; modes of perception and how it governs lyric description, narration, and argument. Consideration of pre-suppositions of what poetry is and how it is to be read. Concurrently scheduled with course C237. P/NP or letter grading.

**C138. Travel Writing in Premodern China. (4)** Lecture, three hours; discussion, one hour. Recommended preparation: course 50. Exploration of travel writing in China, with focus on English translations of works by native writers and by foreign visitors through centuries. Concurrently scheduled with course C238. Letter grading.

**139. Gardens in China. (4)** Lecture, three hours; discussion, one hour. Recommended preparation: course 50. Interdisciplinary survey of historic and literary gardens in China, with focus on English translations of texts by native writers and recent Western scholarship. Letter grading.

**140A-140D. Readings in Classical Chinese Literature. (4 each)** Lecture, three hours. Enforced requisite: course 110C. Advanced classical Chinese. Readings and discussion of works of premodern Chinese literature. Each course may be taken independently for credit. Letter grading. **140A.** Poetry; **140B.** Prose; **140C.** Fiction; **140D.** Philosophical Texts.

**C144. Translation Workshop: Modern Chinese Texts. (4)** Lecture, three hours; discussion, one hour. Preparation: bilingual competency in Chinese and English. Workshop on Chinese-English literary translation, designed to hone and improve translation skills. Focus on close readings and analysis of original texts against published English translations and actual translation work. May include interpretation segment, designed to improve interpretation skills. Concurrently scheduled with course C244. P/NP or letter grading.

**C150A. Lyrical Traditions. (4)** Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Readings in English translation of poetic and critical writings of traditional China, with emphasis on development of subjectivity and modes of address. Concurrently scheduled with course C250A. P/NP or letter grading.

**C150B. Chinese Literature in Translation: Traditional Narrative and Fiction.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Examination of formation and development of Chinese narrative traditions from Tang to mid-Qing periods (7th–18th centuries). Readings from biographical writings, fiction, drama, legal cases, etc., with emphasis on different narrative conventions and their cultural assumptions and intersections. Exploration of important issues in context of imperial China, including order and chaos, self and other, desire and transcendence, gender norms and transgression, violence and justice. May be taken independently for credit. Concurrently scheduled with course C250B. Letter grading.

**151. Chinese Literature in Translation: Modern Literature.** (4) Lecture, three hours; discussion, one hour. Requisite: English Composition 3 or 3H or one course from Comparative Literature 1A, 1B, 1C, 1D. Knowledge of Chinese not required. Lectures and reading of representative works from 1900 to present in English translation. Letter grading.

**152. Topics in Contemporary Chinese Literature and Culture.** (4) Lecture, two hours; discussion, one hour. Knowledge of Chinese not required. Investigation of various topics in contemporary Chinese literature and culture, including politics and poetics of Chinese post-modernism, nativism, feminism, mass culture, and media. Letter grading.

**M153. Chinese Immigrant Literature and Film.** (4) (Same as Asian American Studies M130B and Comparative Literature M171.) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. In-depth look at Chinese immigrant experience by reading literature and watching films. Theories of diaspora, gender, and race to inform thinking and discussion of relevant issues. P/NP or letter grading.

**154. Introduction to Chinese Cinema.** (4) Lecture, two hours; discussion, one hour; film viewing, three hours. Knowledge of Chinese not required. History of Chinese-language cinemas, with emphasis on mainland China. Examination of film style and aesthetics, as well as contexts of industry, economics, politics, culture, and society. May not be repeated for credit. Letter grading.

**155. Topics in Chinese Cinema.** (4) Lecture, two hours; discussion, one hour; film viewing, three hours. Knowledge of Chinese not required. Critical study of films from China, Hong Kong, Taiwan, and Chinese diaspora. Examination of aesthetics, genres, directors and stars, other arts and media, and cultural and political histories. May be repeated for credit with topic change. P/NP or letter grading.

**C156. Variable Topics in Culture and Society in Taiwan.** (4) Lecture, three hours; discussion, one hour. Designed for seniors. Knowledge of Chinese not required. Examination of relationship between culture (art, literature, film) and society in Taiwan. Reading, audio and visual material, discussion, and development of culminating project. May be repeated for credit with topic change. Concurrently scheduled with course C257. Letter grading.

**157. Contemporary Chinese Popular Culture.** (4) Lecture, three hours; discussion, one hour. Examination of various aspects of modern and contemporary popular culture in China, Taiwan, and Hong Kong from cultural studies perspective. Genres and media include literature, print culture, cinema, martial arts film and fiction, television, radio, pop music, visual arts, fashion, advertising, and cyberculture. P/NP or letter grading.

**159. Variable Topics in Culture and Society in China.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese language not required. Examination of relationship between culture (art, literature, history, film) and society in China. Reading, audio and visual material, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**CM160. Chinese Buddhism.** (4) (Same as Religion M161A.) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Introduction and development of Buddhism in China, interaction be-

tween Buddhism and Chinese culture, rise of Chinese schools of Buddhism. Concurrently scheduled with course C260. Letter grading.

**165. Introduction to Chinese Buddhist Texts.** (4) Lecture, three hours; discussion, one hour. Recommended requisite: course 100A or 110B or Japanese 110A or Korean 100A or Chinese placement test. Readings in premodern Buddhist texts written in literary Chinese and taken from translated Indian sutras, indigenous exegetical materials, Chinese apocryphal scriptures, and Ch'an writings. Problems in translation from Indo-European languages into Chinese; evolution of Chinese Buddhist terminology. Coverage varies. May be repeated for credit with consent of instructor. Letter grading.

**174. Chinese Strategic Thought.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Introduction to early Chinese narratives and theories of military, diplomatic, and rhetorical strategy. Letter grading.

**C175. Introduction to Chinese Thought.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Survey of Chinese thought as represented in texts of Zhou through early Han periods (circa 1000 to 100 BCE), with focus on invention of Confucian tradition (including Five Classics) and on defenses of that tradition against challenges from Mohists, Taoists, and other groups of thinkers. Concurrently scheduled with course C275. Letter grading.

**175SL. Community-Based Introduction to Chinese Thought.** (4) Seminar, three hours; fieldwork, two hours. Knowledge of Chinese not required. Community-based survey of Chinese thought as represented in texts of Zhou through early Han periods (circa 1000 to 100 BCE), with focus on invention of Confucian tradition (including Five Classics) and on defenses of that tradition against challenges from Mohists, Taoists, and other groups of thinkers. Service learning component includes meaningful work with community partners, such as local schools, selected in advance by instructor. Letter grading.

**176. Neo-Confucianism.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Examination of movement to revitalize and reinterpret teachings of Confucius during Tang, Song, Yuan, and Ming dynasties, with consideration of both neo-Confucian philosophy and social action. Letter grading.

**180. Chinese Mythology and Supernatural.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Survey of corpus of traditional Chinese mythology, with focus on examples preserved in variety of early texts, later evolutions in dramatic and fictional works, and evidence from visual arts. Letter grading.

**182. Archaeology of Early Global Trade and Piracy.** (4) Lecture, three hours; discussion, one hour. Exploration of role of trade and piracy at threshold of globalization (13th to 17th century), with focus on continuity and transformation in Asiatic trade network in response to early global trade. Investigation based on archaeological study of porcelain, tracing movement from kilns around Chinese trading ports to shipwrecks and consumer societies in Southeast Asia and colonial Americas. As one of most important commodities on trans-Pacific voyage, close association of porcelain production and trade with international piracy in traditional historiography presents new angle for understanding dynamics of early global trade and industries. Letter grading.

**M183. Archaeological Landscapes of China.** (4) (Same as Anthropology M116R.) Lecture, three hours; discussion, one hour (when scheduled). Declassified space images from Cold War era and open remote sensing data of 21st century provide new opportunities for studying landscape transformation in historical China. Combining lectures, library research, and hands-on analysis of archaeological sites on satellite images, investigation of changing historical and archaeological landscape in China during last 5,000 years. Social processes at various scales, from emergence of early cities to rise of metropolitan centers and formation of imperial landscapes. P/NP or letter grading.

**184. Crime, Law, and Punishment in Traditional China.** (4) Lecture, three hours; discussion, one hour. Preventing crime and administering justice are important parts of any society, but these are not straightforward or simple processes. What is crime? Are there crimes so terrible that they merit special kinds of punishment? How is punishment decided and by whom? What happens if justice is not carried out? Consideration of these questions as they apply to premodern China from multiple perspectives: legal codes and casebooks, literary re-imaginings of trials, depictions of postmortem punishment, and tales of supernatural retribution. Discussion of how legal and penal systems of China have been represented in West. Letter grading.

**185. Food and Love in Chinese Culture.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Based on studies of cultural, historical, anthropological, and archaeological materials, introduction to how Chinese have been engaging themselves in fields of food eating and love making. Letter grading.

**186. Archaeology in China.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Early Chinese study of their own past, types of artifacts, beginnings of scientific archaeology, and surveys of major excavations of sites of all periods. Letter grading.

**187. Chinese Etymology and Calligraphy.** (4) Lecture, three hours; discussion, one hour. Recommended requisite: course 3. Coverage of (1) development of Chinese writing system from pottery inscriptions 6,000 years ago to modern simplified forms and studies of six scripts principles that were used to form Chinese characters and (2) aesthetic training of calligraphic art and its appreciation, with focus on ways of recognizing and interpreting cursive style, common form of handwriting. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars: Classical China.** (4) Seminar, three hours. Designed for juniors/seniors. Research seminar on selected topics in premodern Chinese literature, thought, and culture. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**191B. Variable Topics Research Seminars: 20th-Century China and Taiwan.** (4) Seminar, three hours. Designed for juniors/seniors. Research seminar on selected topics in modern and contemporary literature and culture from China and Taiwan. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**197. Individual Studies in Chinese.** (4) Tutorial, to be arranged. Limited to juniors/seniors and graduate students who desire more advanced or specialized instruction in Chinese. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required; see undergraduate adviser. P/NP or letter grading.

## Graduate Courses

**200A. Research Methods in Chinese.** (4) Seminar, three hours. Requisite: course 110C. Lectures and discussion designed to develop basic skills in using traditional Chinese research materials. Topics include classical dictionaries; sinological indices; bibliograph-

ical, biographical, and geographical sources; encyclopedias; anthologies; rare editions; illustrated matter and calligraphy. Letter grading.

**200B. Proseminar: Premodern Chinese Literature.** (4) Seminar, three hours. Introduction to major bibliographical and methodological resources in field of premodern Chinese literature, with focus on research tools in field and on scholarship in English on major literary genres, periods, and authors. Letter grading.

**200C. Proseminar: Modern Chinese Literature and Cinema.** (4) Seminar, three hours. Introduction to major bibliographical and methodological resources in fields of modern Chinese literary and cinematic studies, with focus on theoretical tools, historical knowledge, and critical trends. Letter grading.

**M201. China—Seminar: Classical Historiography and Readings in Classical Studies.** (4) (Same as History M281.) Seminar, three hours. Preparation: two years of classical Chinese or working knowledge of classical Chinese. Readings in historiography and selected genres of historical documents. Letter grading.

**M202. China Studies: Discipline, Methods, Debates.** (2) (Same as History M280.) Seminar, two hours. Introduction to study of China as practiced in humanities and social sciences disciplines. S/U grading.

**205. Critical Issues in Chinese and Sinophone Literature.** (4) Seminar, three hours. Methodology course intended for graduate students in 20th-century Chinese literature and culture. Discussion of major theoretical and textual issues and methods. Letter grading.

**C207A-C207B. Academic/Professional Chinese.** (4-4) Lecture, three hours; discussion, one hour. Enforced prerequisite: course 101B or Chinese placement test. Intended to improve reading and writing skills in specific academic and professional subject areas for students who have studied general Chinese at advanced level, with coverage in Chinese humanities and social sciences, science and technology, medicine, and applied linguistics. Concurrently scheduled with courses C107A-C107B. S/U or letter grading.

**209. Issues in Sinophone Literature.** (4) Seminar, three hours. Exploration of selected topics and issues in Sinophone literature, literature written in Sinitic languages by ethnic minority writers in China, and literature written by those living outside China across world, especially in Malaysia, Taiwan, Singapore, and the U.S. S/U or letter grading.

**210. Modern Chinese Literary History.** (4) Lecture, three hours. Designed for graduate students. Discussion of history of modern Chinese literature, focusing on sources, controversies, major literary genres, and critical approaches to studying relationship between literature and history. Letter grading.

**211A-211B. Seminars: Classical Chinese Poetry.** (4-4) Seminar, three hours. Preparation: reading knowledge of literary Chinese. Topics rotate among major textual traditions and chronological periods. Emphasis on philological, critical, and historical approaches. May be repeated for credit with consent of instructor. In Progress (211A) and letter (211B) grading.

**212. Topics in Chinese Poetry.** (4) Readings/discussion, three hours. Selected readings from classical poetic tradition, with focus on individual poets, themes, or other critical issues. May be repeated for credit with consent of instructor. Letter grading.

**213A-213B. Chinese-Language Cinemas.** (4-4) Seminar, three hours; film-viewing laboratory, two hours. Advanced topics in Chinese-language cinemas. Examination of theory and methodology, historiography, industry and institutions, style and aesthetics, major genres and artists, other arts and media, other cinematic traditions, and social contexts. May be repeated for credit with consent of instructor. In Progress (213A) and letter (213B) grading.

**220A-220B. Theoretical Approaches to Chinese and Sinophone Cultures.** (4-4) Seminar, three hours. Discussions to be framed by Western literary and cultural theory, investigating both challenges and limitations Western theory may pose for Chinese literary and cultural studies. Specific topics vary from year to year. In Progress (220A) and letter (220B) grading.

**224A-224B. Seminars: Selected Topics in Chinese Linguistics.** (4-4) Seminar, three hours. Critical reading and discussion of selected topics in Chinese functional linguistics (discourse and grammar, corpus linguistics, sociolinguistics, language change). May be repeated for credit with consent of instructor. In Progress (224A) and letter (224B) grading.

**226A. Seminar: Topics in Chinese Applied Linguistics.** (4) Seminar, three hours. Critical reading and discussion of selected topics in Chinese applied linguistics (teaching Chinese as a second language, second language acquisition theories and practices). May be repeated for credit with consent of instructor. S/U or letter grading.

**230A-230B. Seminars: Selected Topics in Modern Chinese Literature.** (4-4) Seminar, three hours. Selected readings in 20th-century Chinese literature, emphasizing fiction. Discussion of individual research projects. May be repeated for credit. In Progress (230A) and letter (230B) grading.

**C237. How to Read Chinese Poetry.** (4) Lecture, two and one half hours; discussion, one hour. Preparation: one year of literary Chinese. From earliest vestiges of Chinese poetry more than two thousand years ago, to doors of contemporary Chinese homes, and to San Francisco's Angel Island in late 19th century, few students of China (or pre-modern East Asia) go far without suddenly encountering pervasive presence of Chinese poetry (shī). Examination of why poetry, roles poetry plays in Chinese culture, and how to read it. Basic beginning in learning how to read Chinese classical poetry. Study is topical and accumulative, designed to have effect of building blocks and progressive overlays. Introduction to language, forms, and history of shī poetry. Study of smallest integral unit of Chinese lyric poetry, individual words and their selection; formal elements and rhetorical features; modes of perception and how it governs lyric description, narration, and argument. Consideration of presuppositions of what poetry is and how it is to be read. Concurrently scheduled with course C137. S/U or letter grading.

**C238. Travel Writing in Premodern China.** (4) Lecture, three hours; discussion, one hour. Recommended preparation: course 50. Exploration of travel writing in China, with focus on English translations of works by native writers and by foreign visitors through centuries. Concurrently scheduled with course C138. Letter grading.

**C240. Introduction to Chinese Linguistics.** (4) Lecture, three hours; discussion, one hour. Recommended preparation: one to two years of college-level Chinese. Introduction to Chinese sound system, writing system and its reform, regional differences, major structural features, language in society and in cultural practices. Concurrently scheduled with course C120. Letter grading.

**241A-241B. Heaven, Earth, and Monarchy in Ancient China.** (4-4) Seminar, three hours. Preparation: working knowledge of classical Chinese. Close reading of chapters from Han dynasty collection of writings on forms of music, social interaction, education, marriage, and mourning in Zhou royal court, with discussion of topics in recent cultural semiology and anthropology. In Progress (241A) and letter (241B) grading.

**242A-242B. Chinese Classics and Exegetical Traditions.** (4-4) Seminar, three hours. Recommended preparation: command of literary Chinese. Reading and discussions of selections from one traditional Chinese classic (Confucian Five Classics, others), with introduction to exegetical history, secondary scholarship, and research methodology. Topics vary from year to year. May be repeated for credit. In Progress (242A) and letter (242B) grading.

**243. Translation Workshop: Premodern Chinese Texts.** (2) Seminar, two hours. Translation, grammatical analysis, and discussion of selections from premodern Chinese texts. S/U grading.

**C244. Translation Workshop: Modern Chinese Texts.** (4) Lecture, three hours; discussion, one hour. Preparation: bilingual competency in Chinese and English. Workshop on Chinese-English literary translation, designed to hone and improve translation skills.

Focus on close readings and analysis of original texts against published English translations and actual translation work. May include interpretation segment, designed to improve interpretation skills. Concurrently scheduled with course C144. S/U or letter grading.

**245A-245B. Seminars: Traditional Chinese Narrative and Drama.** (4-4) Seminar, three hours. Preparation: reading knowledge of colloquial and literary Chinese. Seminar topics alternate yearly between traditional narrative and drama, with emphasis on generic, hermeneutical, and historical approaches. Topics in narrative selected from genres from Chou through Ch'ing periods. Topics in drama selected from *tsa-ch'ü* and *ch'uan-ch'i*. May be repeated for credit with consent of instructor. In Progress (245A) and letter (245B) grading.

**C250A. Lyrical Traditions.** (4) Lecture, three hours; discussion, one hour. Readings of poetic and critical writings of traditional China, with emphasis on development of subjectivity and modes of address. Concurrently scheduled with course C150A. Graduate students required to read primary materials in original Chinese. S/U or letter grading.

**C250B. Chinese Literature in Translation: Traditional Narrative and Fiction.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Examination of formation and development of Chinese narrative traditions from Tang to mid-Qing periods (7th–18th centuries). Readings from biographical writings, fiction, drama, legal cases, etc., with emphasis on different narrative conventions and their cultural assumptions and intersections. Exploration of important issues in context of imperial China, including order and chaos, self and other, desire and transcendence, gender norms and transgression, violence and justice. May be taken independently for credit. Concurrently scheduled with course C150B. Letter grading.

**256A-256B. Chinese Literary Criticism.** (4-4) Seminar, three hours. Issues in production and interpretation of literary works, as formulated by Chinese critics from classical age onward. Letter grading.

**C257. Variable Topics in Culture and Society in Taiwan.** (4) Lecture, three hours; discussion, one hour. Designed for graduate students. Knowledge of Chinese not required. Examination of relationship between culture (art, literature, film) and society in Taiwan. Reading, audio and visual material, discussion, and development of culminating project. May be repeated for credit with topic change. Concurrently scheduled with course C156. Letter grading.

**C260. Chinese Buddhism.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Introduction and development of Buddhism in China, interaction between Buddhism and Chinese culture, rise of Chinese schools of Buddhism. Concurrently scheduled with course CM160. Letter grading.

**265A-265B. Seminars: Chinese Buddhist Texts.** (4-4) Seminar, three hours. May be repeated for credit with consent of instructor. In Progress (265A) and letter (265B) grading.

**C275. Introduction to Chinese Thought.** (4) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Survey of Chinese thought as represented in texts of Zhou through early Han periods (circa 1000 to 100 BCE), with focus on invention of Confucian tradition (including Five Classics) and on defenses of that tradition against challenges from Mohists, Taoists, and other groups of thinkers. Concurrently scheduled with course C175. Letter grading.

**285A-285B. Seminars: Readings in Chinese Religions.** (4-4) Seminar, three hours. Preparation: reading knowledge of classical Chinese. Selected readings from religious traditions of China, with introduction to different disciplinary approaches, secondary scholarship, and research methodology. Topics rotate among chronological periods and major religious traditions. May be repeated for credit with consent of instructor. In Progress (285A) and letter (285B) grading.

**290A-290B. Seminars: Selected Topics in Chinese Archaeology.** (4-4) Seminar, three hours. Prerequisite: course 186. Discussion and research on major problems about Chinese archaeology and different inter-



pretations to most important archaeological finds, with emphasis on studies of Xia and Shang cultures and Xia and Shang dynasties. May be repeated for credit. In Progress (290A) and letter (290B) grading.

**291. Archaeological Process in China. (4)** Seminar, three hours. Introduction to major bibliographical and methodological resources in field of Chinese archaeology to provide deeper understanding of formulation of conceptual categories archaeologists of early China used to make sense of past through interpretation of material culture. S/U or letter grading.

**295A-295B. Seminars: Selected Topics in Chinese Cultural History. (4-4)** Seminar, three hours. Discussion and research on major problems related to Chinese culture, such as beginnings of Chinese civilization and Chinese dynastic history. Other topics include cultural developments of ancient and medieval China. May be repeated for credit. In Progress (295A) and letter (295B) grading.

**297A. Seminar: Research Topics in Premodern China. (4)** Seminar, three hours. Selected topics in premodern Chinese literature, history, or religion, with emphasis on textual readings and independent research. S/U or letter grading.

**297B. Seminar: Research Topics in Modern Chinese and Sinophone Culture. (4)** Seminar, three hours. Selected topics in modern Chinese and Sinophone culture, with major emphasis on independent research. S/U or letter grading.

## Filipino

### Lower-Division Courses

**1. Introductory Filipino. (5)** Lecture, two hours; discussion, three hours. Coverage of basic Filipino/Tagalog grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**2. Introductory Filipino. (5)** Lecture, two hours; discussion, three hours. Enforced requisite: course 1 with grade of C or better. Coverage of basic Filipino/Tagalog grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**3. Introductory Filipino. (5)** Lecture, two hours; discussion, three hours. Enforced requisite: course 2 with grade of C or better. Coverage of basic Filipino/Tagalog grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**3R. Introductory Filipino Reading and Writing. (5)** Lecture, five hours. Recommended preparation: speaking and listening skills in Filipino. Training in reading and writing skills at elementary level, equivalent to completion of one year of Filipino. P/NP or letter grading.

**4. Intermediate Filipino. (5)** Lecture, two hours; discussion, three hours. Enforced requisite: course 3 with grade of C or better. Reinforcement of basic Filipino/Tagalog grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**5. Intermediate Filipino. (5)** Lecture, two hours; discussion, three hours. Enforced requisite: course 4 with grade of C or better. Reinforcement of basic Filipino/Tagalog grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**6. Intermediate Filipino. (5)** Lecture, two hours; discussion, three hours. Enforced requisite: course 5 with grade of C or better. Reinforcement of basic Filipino/Tagalog grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**8. Elementary Filipino: Intensive. (15)** Lecture, 10 hours; discussion, 10 hours. Intensive course equivalent to courses 1, 2, and 3. Coverage of basic Filipino/Tagalog

grammar, with equal emphasis on reading, writing, conversation, and comprehension. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100A. Advanced Filipino: Reading and Writing. (4)** Lecture, three hours. Enforced requisite: course 6 with grade of C or better or Filipino/Tagalog placement test. Designed to move students with intermediate level of proficiency toward greater proficiency and fluency in reading, writing, speaking, and listening in Filipino language. Coverage of skills in effective use of language: description, narration, exposition, and argumentation. How to analyze different elements of writing and reading of pieces from several genres of contemporary Filipino writing. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Filipino. (2)** Tutorial, two hours. Requisite: course 6 or Filipino/Tagalog placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Filipino. May be repeated for credit. P/NP or letter grading.

**130A. Filipino Short Story. (4)** Lecture, three hours. Enforced requisite: course 6 or Filipino/Tagalog placement test. General background knowledge on how Filipino writers view themselves and society, historically and diachronically. Sample of short stories written in Filipino/Tagalog language with some written in English for purposes of contrasting rhetoric, themes, and sensibilities. P/NP or letter grading.

**152. Survey of Philippine Literature. (4)** Lecture, three hours. Enforced requisite: course 3. Introduction to study of Philippine literature from pre-Hispanic to contemporary times. Readings of poetry, short stories, plays, novels, and historical survey to gain broad perspective of Philippine literature and understanding of literary development in Philippines. Study of effect of colonization on Filipino indigenous culture. P/NP or letter grading.

**155. Topics in Filipino Cinema and Literature. (4)** Lecture, three hours; discussion, one hour. Knowledge of Filipino not required. Critical analysis of language and culture, history, and sociopolitical issues as represented in Filipino films and/or literature. May be repeated once for credit. P/NP or letter grading.

**170. People, Society, and Culture of Philippines. (4)** Lecture, two hours; discussion, one hour. In-depth examination of Philippines, from early history and colonial formation under both Spain and U.S. to struggle for independence, Martial Law period, profound socio-economic issues of post-Marcos republic, including extreme poverty and global economic phenomenon of overseas Filipino workers in 21st century.

Readings and selected films/videos contextualize specific topics under discussion. General orientation to political history and social conditions of Philippines. Study of various social categories of Filipino in present day, as means of engaging with essential societal issues. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Hindi-Urdu

### Lower-Division Courses

**1. Introductory Hindi-Urdu. (5)** Lecture, two hours; discussion, three hours. Coverage of basic Hindi grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**2. Introductory Hindi-Urdu. (5)** Lecture, two hours; discussion, three hours. Enforced requisite: course 1 with grade of C or better. Coverage of basic Hindi grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**3. Introductory Hindi-Urdu. (5)** Lecture, two hours; discussion, three hours. Enforced requisite: course 2 with grade of C or better. Coverage of basic Hindi grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**3R. Elementary Hindi-Urdu Reading and Writing. (5)** Lecture, five hours. Recommended preparation: speaking and listening skills in Hindi-Urdu. Training in reading and writing skills at elementary level, equivalent to completion of one year of Hindi. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

### 100A-100B-100C. Intermediate Hindi-Urdu. (4-4-4)

Lecture, two hours; discussion, three hours. Enforced requisite: course 3 with grade of C or better. Course 100A with grade of C or better is requisite to 100B; course 100B with grade of C or better is requisite to 100C. Reinforcement of basic Hindi grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Hindi-Urdu. (2)** Tutorial, two hours. Requisite: course 6 or Hindi-Urdu placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Hindi-Urdu. May be repeated for credit. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Indonesian

### Lower-Division Courses

**1. Introductory Indonesian. (5)** Lecture, three hours; discussion, two hours. Not open to students who have learned enough Indonesian to qualify for more advanced courses. Coverage of basic Indonesian grammar, with equal emphasis on reading, writing, listening, and speaking skills. P/NP or letter grading.

**2. Introductory Indonesian. (5)** Lecture, three hours; discussion, two hours. Requisite: course 1 with grade of C or better. Not open to students who have learned enough Indonesian to qualify for more advanced courses. Coverage of basic Indonesian grammar, with equal emphasis on reading, writing, listening, and speaking skills. P/NP or letter grading.

**3. Introductory Indonesian. (5)** Lecture, three hours; discussion, two hours. Requisite: course 2 with grade of C or better. Not open to students who have learned enough Indonesian to qualify for more advanced courses. Coverage of basic Indonesian grammar, with equal emphasis on reading, writing, listening, and speaking skills. P/NP or letter grading.

**4. Intermediate Indonesian. (5)** Lecture, five hours. Designed to expand language skills acquired in introductory courses and to equip students with good command of communicative competence in Indonesian. P/NP or letter grading.

**5. Intermediate Indonesian. (5)** Lecture, five hours. Enforced requisite: course 4 with grade of C or better. Designed to expand language skills acquired in introductory courses and to equip students with good command of communicative competence in Indonesian. P/NP or letter grading.

**6. Intermediate Indonesian. (5)** Lecture, five hours. Enforced requisite: course 5 with grade of C or better. Designed to expand language skills acquired in introductory courses and to equip students with good command of communicative competence in Indonesian. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

### 100A-100B-100C. Advanced Indonesian. (4-4-4)

Lecture, three hours. Course 100A with grade of C or better is requisite to 100B; course 100B with grade of C or better is requisite to 100C. Preparation for more advanced study of specialized academic subjects, including but not limited to social sciences and humanities. Students read authentic materials in Indonesian concerning various issues. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Indonesian. (2)** Tutorial, two hours. Requisite: course 6 or Indonesian placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Indonesian. May be repeated for credit. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Japanese

### Lower-Division Courses

**1. Elementary Modern Japanese. (5)** Lecture, three hours; discussion, two hours. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Introduction to modern Japanese with attention to conversation, grammar, and written forms. Conversation drill based on material covered in class. P/NP or letter grading.

**1A. Elementary Modern Japanese for Kanji Native Students. (5)** Lecture, two hours; discussion, three hours. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Introduction to modern Japanese with attention to conversation, grammar, and written forms for those with some Kanji knowledge. Conversation drill based on material covered in class. P/NP or letter grading.

**2. Elementary Modern Japanese. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: course 1 with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Continuation of course 1. P/NP or letter grading.

**2A. Elementary Modern Japanese for Kanji Native Students. (5)** Lecture, two hours; discussion, three hours. Requisite: course 1A or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Introduction to modern Japanese with attention to conversation, grammar, and written forms for those with some Kanji knowledge. Conversation drill based on material covered in class. P/NP or letter grading.

**3. Elementary Modern Japanese. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: course 2 with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Continuation of course 2. P/NP or letter grading.

**3A. Elementary Modern Japanese for Kanji Native Students. (5)** Lecture, two hours; discussion, three hours. Requisite: course 2A or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Introduction to modern Japanese with attention to conversation, grammar, and written forms for those with some Kanji knowledge. Conversation drill based on material covered in class. P/NP or letter grading.

**4. Intermediate Modern Japanese. (5)** Lecture, three hours; discussion, one hour. Requisite: course 3 or 8 with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Designed to strengthen communicative skills of listening, speaking, reading, and writing. Grammar reviews, vocabulary building skills, language learning skills, and sociocultural knowledge. P/NP or letter grading.

**5. Intermediate Modern Japanese. (5)** Lecture, three hours; discussion, one hour. Requisite: course 4 with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Continuation of course 4. P/NP or letter grading.

**6. Intermediate Modern Japanese. (5)** Lecture, three hours; discussion, one hour. Requisite: course 5 with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Continuation of course 5. P/NP or letter grading.

**8. Elementary Japanese: Intensive. (15)** Lecture, 10 hours; discussion, 10 hours. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Intensive course equivalent to courses 1, 2, and 3. Introduction to fundamentals of standard Japanese, including pronunciation, grammar, and Japanese characters, with emphasis on all four basic language skills—speaking, listening comprehension, reading, and writing. Offered in summer only. P/NP or letter grading.

**10. Intermediate Modern Japanese: Intensive. (15)** Lecture, 10 hours; discussion, 10 hours. Enforced requisite: course 3 with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Intensive course equivalent to courses 4, 5, and 6. Readings in modern Japanese, with emphasis on comprehension and structural analysis. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**50. Japanese Civilization. (5)** Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Survey of development of Japanese culture and its relationship to Asiatic mainland. P/NP or letter grading.

**70. Images of Japan: Literature and Film. (5)** Lecture, three hours; discussion, one hour. Knowledge of Japanese culture, literature, or language not required. Introduction to visual and textual images of Japan's literary heritage, including documentary and feature films based on Japan's literary classics. Letter grading.

**75. Anime. (5)** Lecture, three hours; discussion, one hour. Discussion and analysis of seminal works of Japanese animation, or anime, created from 1980s to present. Engagement with works in variety of styles, and that deal with broad range of themes. Reading and discussion of recent scholarship on anime produced by scholars working in diverse modes, from philosophical to anthropological. Letter grading.

**80. How Does It Move? Action and Moving Image in Modern Japan. (5)** Lecture, four hours; discussion, one hour. How is action constituted on the screen? How has modern technological media informed and transformed our experience and understanding of action? Exploration of how our experience and conception of action is mediated by technological aesthetic media by tracing history of portrayal and experience of action both in media theory and practice. Emphasis on moving image practices surrounding production and reception of popular action film genres from Japan such as *chambara* or samurai film and *yakuza* film. Consideration also of their relationship to international film cultures and genres (e.g. Hollywood Western, gangster film, Chinese martial arts cinema, and contemporary Hollywood blockbusters) in context of broader historical transformations in media practices and in modes of distribution and reception. Study of theoretical debates, institutional practices, and ethical and political questions that inform our inquiries into moving image as action, and into action as/through moving image. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100A-100B-100C. Advanced Modern Japanese. (4-4-4)** Lecture, three hours; discussion, one hour. Requisite: course 6 or 10 with grade of C or better or Japanese placement test. Course 100A with grade of C or better or Japanese placement test is enforced requisite to 100B; course 100B with grade of C or better or Japanese placement test is enforced requisite to 100C. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Learning Japanese language with emphasis on sociocultural issues of contemporary Japanese society. Materials selected from contemporary publications, videos, and audiotapes. Reading

with focus on linguistics features, writing summaries and opinions, oral activities, and project work. P/NP or letter grading.

**100R. Third-Year Advanced Reading in Modern Japanese. (4)** Lecture, three hours. Enforced requisite: course 6 or 10 with grade of C or better or Japanese placement test. Not open to students with credit for course 100A or who have learned, from whatever source, enough Japanese to qualify for more advanced courses. May be taken concurrently with course 100A. Development of overall competency in reading advanced-level Japanese materials. Instruction in understanding grammar and practical expressions, as well as expansion of *kanji* and vocabulary to achieve higher ability in comprehension of written materials in Japanese. Translations from Japanese to English, as well as from English to Japanese. P/NP or letter grading.

**100S. Advanced Modern Japanese: Intensive. (12)** Lecture, 10 hours; discussion, 10 hours. Enforced requisite: course 6 or 10 with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Intensive course equivalent to courses 100A, 100B, and 100C. Learning Japanese language with emphasis on sociocultural issues of contemporary Japanese society. Materials selected from contemporary publications, videos, and audiotapes. Reading with focus on linguistics features, writing summaries and opinions, oral activities, and project work. Offered in summer only. P/NP or letter grading.

**101A-101B-101C. Fourth-Year Japanese: Advanced Reading. (4-4-4)** Lecture, three hours. Enforced requisite: course 100C or 100S with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Advanced readings and discussion for students planning to do advanced coursework or research on Japan. Topics selected from magazines, journals, and books related to humanities and social sciences. P/NP or letter grading. **101B-101C.** May be repeated for credit.

**101S. Fourth-Year Japanese: Advanced Reading—Intensive. (12)** Lecture, 10 hours; discussion, 10 hours. Enforced requisite: course 100C or 100S with grade of C or better or Japanese placement test. Not open to students who have learned, from whatever source, enough Japanese to qualify for more advanced courses. Advanced readings and discussion for students planning to do advanced coursework or research on Japan. Topics selected from magazines, journals, and books related to humanities and social sciences. Offered in summer only. P/NP or letter grading.

**103A-103B-103C. Fourth-Year Japanese: Advanced Speaking I, II, III. (4-4-4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 100C or 100S with grade of C or better. Development of listening and speaking abilities for students who need focused attention to these skills. Also suitable for graduate students who need to advance their public speaking ability. Not intended for those who are at higher level in these skill areas. P/NP or letter grading.

**104. Business Japanese. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 100C or 100S with grade of C or better or Japanese placement test. Designed to improve skills in Japanese in context of business transactions. To be successful business person, one must be equipped with advanced specialized oral and written communication skills as well as high degree of cultural understanding. Oral and written business communication, social etiquette in business conduct, Japanese economic and business climate, business law and regulations, resources and environment, and business case studies. P/NP or letter grading.

**105A-105B. Advanced Reading and Writing for Japanese-Heritage Speakers. (4-4)** Lecture, three hours; discussion, one hour. Enforced preparation: Japanese placement test. Not open to students who have taken 100 series, 101 series, and/or 103 series courses or 104. Designed for advanced-level Japanese-heritage learners or nonheritage learners who are fluent in daily spoken Japanese. Emphasis on building vocabulary

knowledge of *Kanji*, reading and writing, and honorific/humble style of Japanese. Each course may be taken independently for credit. P/NP or letter grading.

**108FL. Special Studies: Readings in Japanese. (2)** Seminar, two hours. Requisite: course 100C or 100S with grade of C or better or Japanese placement test. Students must be concurrently enrolled in affiliated main course. Additional work in Japanese to augment work assigned in main course, including reading, writing, and other exercises. May be repeated for credit. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Japanese. (2)** Tutorial, two hours. Requisite: course 100C or 100S with grade of C or better or Japanese placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Japanese. May be repeated for credit. P/NP or letter grading.

**110A. Introduction to Classical Japanese: Basic Grammar. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 100C or 100S or Japanese placement test. Introduction to fundamentals of classical Japanese. Grammar and reading of selected premodern texts. P/NP or letter grading.

**110B. Introduction to Classical Japanese: Reading Proficiency. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 110A. Grammar and readings of selected premodern texts. P/NP or letter grading.

**C112. Japanese Urban History and Culture. (4)** Lecture, three hours. Knowledge of Japanese not required. Japanese urban history and culture, with special emphasis on cities of Nara, Kyoto, Edo/Tokyo, and Nagasaki. Concurrently scheduled with course C212. P/NP or letter grading.

**M120. Introduction to Japanese Linguistics. (4)** (Same as Linguistics M116.) Lecture, three hours; discussion, one hour. Enforced requisite: course 3 or 8 or Japanese placement test. Introduction to Japanese grammar and sociolinguistics through reading, discussion, and problem solving in phonology, syntax, semantics, and discourse pragmatics. Letter grading.

**CM122. Japanese Phonology and Morphology. (4)** (Same as Linguistics M176A.) Lecture, three hours; discussion, one hour. Recommended preparation: Linguistics 20. Enforced requisite: course 3 or 8 or Japanese placement test. Survey of Japanese phonetics, phonology, and morphology. Concurrently scheduled with course C222. Letter grading.

**CM123. Structure of Japanese. (4)** (Same as Linguistics M176B.) Lecture, three hours; discussion, one hour. Enforced requisite: course 4 or 10 or Japanese placement test. Functional linguistic analysis of grammatical structures of Japanese, often in form of contrastive analysis of Japanese, English, and other languages. Concurrently scheduled with course C223. Letter grading.

**124. Language and Culture of Ryukyu/Okinawa. (4)** Seminar, three hours. Requisite: course 6 or 10 or Japanese placement test. Research seminar with reading, discussion, linguistic analysis, and development of culminating project. Letter grading.

**CM127. Contrastive Analysis of Japanese and Korean. (4)** (Same as Korean CM127 and Linguistics M178.) Lecture, three hours; discussion, one hour. Recommended preparation: two years of Japanese and knowledge of Hangul, or two years of Korean and knowledge of Hiragana. Prior linguistic background also recommended. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. Concurrently scheduled with course CM227. Letter grading.

**130A-130B-130C. Readings in Modern Japanese Literature. (4-4-4)** Seminar, three hours. Enforced requisite: course 100C or 100S or Japanese placement test. Readings and discussion of works by modern Japanese writers. Each course may be taken independently for credit. Letter grading.

**140A-140B-140C. Readings in Classical Japanese Literature. (4-4-4)** Seminar, three hours. Enforced requisite: course 110A. Readings and discussion of works of classical, medieval, and early modern Japa-

nese literature. Each course may be taken independently for credit. Letter grading. **140A.** Heian; **140B.** Medieval; **140C.** Edo.

**C149. Introduction to Kambun and Other Literary Styles.** (4) Lecture, three hours. Enforced requisite: course 110A. Introduction to Kambun, Japanese literary rendering of premodern Sino-Japanese, and Sorobun, epistolary style. Concurrently scheduled with course C249. Letter grading.

**C150. Topics in Japanese Literature and Philosophy.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Discussion of philosophical topics such as experience, identity, value, technology, in light of Japanese literary texts. Concurrently scheduled with course C250. Letter grading.

**151. Japanese Literature in Translation: Modern.** (4) Lecture, three hours; discussion, one hour. Requisite: English Composition 3 or 3H or one course from Comparative Literature 1A, 1B, 1C, 1D. Knowledge of Japanese not required. Survey of Japanese literature from 16th century to post-World War II. P/NP or letter grading.

**154. Postwar Japanese Culture through Literature.** (4) Lecture, three hours; discussion, one hour. Requisite: English Composition 3 or 3H or one course from Comparative Literature 1A, 1B, 1C, 1D. Knowledge of Japanese not required. Use of fiction and film to explore Japanese culture in postwar era in broad cross-disciplinary and cross-cultural context. P/NP or letter grading.

**155. Topics in Japanese Cinema.** (4) Lecture, three hours; discussion, one hour; film viewing, two hours. Knowledge of Japanese not required. Critical and historical examination of Japanese cinema. P/NP or letter grading.

**M156. Literature and Technology.** (4) (Same as Comparative Literature M176.) Lecture, three hours. Knowledge of Japanese not required. Examination of representation of technology in 20th-century fiction. Discussion of impact of technology on shifting images of gender, subjectivity, and national identity. P/NP or letter grading.

**157. Classical Japanese Drama: Great Tradition.** (4) Lecture, three hours. Knowledge of Japanese not required. Readings in major genres of Japanese theater and exploration of its influence on 20th-century drama and theater around world. Letter grading.

**C159. Variable Topics in Culture and Society in Japan.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Examination of relationship between culture (art, literature, film) and society in Japan. Reading, audio and visual material, discussion, and development of culminating project. May be repeated for credit with topic change. Concurrently scheduled with course C259. P/NP or letter grading.

**CM160. Japanese Buddhism.** (4) (Same as Religion M161B.) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Development of Buddhism in Japan in its cultural context, with emphasis on key ideas and teachings. Concurrently scheduled with course C260. Letter grading.

**161. Religious Life in Modern Japan.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Religious transformations accompanying rapid industrialization, urbanization, militarism, and defeat in the Pacific War, including analyses of Shinto mythology, secular positivism, Buddhist reform movements, new religions, and continuing role of traditional village/family religious rites. Letter grading.

**165. Introduction to Japanese Buddhist Texts.** (4) Lecture, three hours; discussion, one hour. Enforced requisite: course 110A or Chinese 165 or Japanese placement test. Readings in premodern Buddhist texts written by Japanese in Sino-Japanese or Kambun and mixed Japanese/Chinese literary styles concerning textual commentaries, doctrinal treatises, hagiographies, temple histories, etc. Coverage varies. May be repeated for credit with consent of instructor. Letter grading.

**170. Japanese Tales of Supernatural.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Readings of fictional works that feature supernatural beings, including Shinto gods,

Buddhas, bodhisattvas, Yin-yang diviners, ghosts, various types of demons, shape-shifting foxes and raccoon dogs, snakes, and dragons. Exploration of different treatments of supernatural themes from ancient to modern times, and of relationship between supernatural literature and expressions of fear, cruelty, violence, misogyny, desire, hope, compassion, and humor. Letter grading.

**C171. Topics in Japanese Studies.** (4) Lecture, three hours. Enforced requisite: course 100C or Japanese placement test. Advanced course that explores Japanese culture through in-depth reading of Japanese-language texts and/or visual documents. Topics include literature, religion, folklore, cultural history, language, and society. Concurrently scheduled with course C271. P/NP or letter grading.

**172. Fiction and Plays of Floating World.** (4) Lecture, three hours; discussion, one hour. Enforced requisite: course 50. Examination of broad selection of popular fiction and theater from late 17th to early 19th century, with focus on theme of floating world (*ukiyo*) of entertainment, including pleasure quarters, theater district, and realm of fiction. Letter grading.

**174. Classical Japanese Poetry.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Examination of classical poetry of Nara and Heian periods, with focus on poetry anthology called *Man'yōshū* (Collection of Myriad Ages, 8th century) and on *Kokin Wakashū* (Collection of Ancient and Modern Japanese Poems, early 10th century). Letter grading.

**C182. Japanese Folklore.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Lectures/discussions on native religious rituals (festivals) and observances of Japanese, with special emphasis on artistic behavior. Discussion of Shinto, Shinto/Buddhist syncretism, and other non-Buddhist belief systems. Concurrently scheduled with course C282. Letter grading.

**187SL. Service Learning in Japanese Community.** (4) Lecture, three hours; fieldwork, three hours minimum. Enforced requisite: course 6. Service learning in Japanese community. Examination of scholarly works on cultural and language factors between Japanese and American communities. Survey of intercultural communication and learning of strategies for resolving miscommunication difficulties arising from language barrier and cultural differences while using language in real interaction with native speakers of Japanese. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars: Classical Japan.** (4) Seminar, three hours. Research seminar on selected topics in premodern Japanese literature and thought. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**191B. Variable Topics Research Seminars: Modern Japan.** (4) Seminar, three hours. Research seminar on selected topics on modern Japan. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**191C. Variable Topics Research Seminars: Personalities in Japanese Civilization.** (4) Seminar, three hours. Research seminar on selected topics. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**197. Individual Studies in Japanese.** (4) Tutorial, to be arranged. Limited to juniors/seniors and graduate students who desire more advanced or specialized instruction in Japanese. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required; see undergraduate adviser. P/NP or letter grading.

## Graduate Courses

**200. Japanese Studies Seminar.** (4) Seminar, three hours. Selected topics on introduction to major bibliographical and methodological resources in field of Japanese studies. May be repeated for credit with topic change. Letter grading.

**201A-201B. Introduction to Reading Japanese Academic Texts.** (4-4) Lecture, three hours. Requisite: course 100A or 100R. Course 201A is requisite to 201B. Designed for graduate students. Introduction to modern Japanese-language academic texts, both prewar and postwar, with focus only on reading; students who need to improve other skills should take additional courses. S/U or letter grading.

**210. Issues in Modern Japanese Literature.** (4) Lecture, three hours. Introduction to issues in field of modern Japanese literature, with readings in primary and secondary sources. Topics vary. Letter grading.

**C212. Japanese Urban History and Culture.** (4) Lecture, three hours. Knowledge of Japanese not required. Japanese urban history and culture, with special emphasis on cities of Nara, Kyoto, Edo/Tokyo, and Nagasaki. Concurrently scheduled with course C112. S/U or letter grading.

**C222. Japanese Phonology and Morphology.** (4) Lecture, three hours; discussion, one hour. Recommended preparation: Linguistics 20. Enforced requisite: course 3 or 8 or Japanese placement test. Survey of Japanese phonetics, phonology, and morphology. Concurrently scheduled with course CM122. Letter grading.

**C223. Structure of Japanese.** (4) Lecture, three hours; discussion, one hour. Enforced requisite: course 4 or 10 or Japanese placement test. Functional linguistic analysis of grammatical structures of Japanese, often in form of contrastive analysis of Japanese, English, and other languages. Concurrently scheduled with course CM123. Letter grading.

**224A-224B. Seminars: Selected Topics in Japanese Discourse Linguistics.** (4-4) Seminar, three hours. Requisite: course CM122. Critical reading and discussion of selected topics in Japanese discourse linguistics. May be repeated for credit with consent of instructor. In Progress (224A) and letter (224B) grading.

**226. Survey of Functional Linguistics.** (4) Lecture, four hours. Survey of recent empirical and theoretical research in several areas of functional linguistics, that has served as backbone for development of Japanese discourse linguistics. May be repeated for credit with consent of instructor. S/U or letter grading.

**CM227. Contrastive Analysis of Japanese and Korean.** (4) (Same as Korean CM227.) Lecture, three hours; discussion, one hour. Recommended preparation: two years of Japanese and knowledge of Hangul, or two years of Korean and knowledge of Hiragana. Prior linguistic background also recommended. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. Concurrently scheduled with course CM127. Letter grading.

**228. Fundamentals in Discourse Data Analysis.** (4) Lecture, three hours. Designed to prepare students to conduct research in natural discourse data, both spoken and written, for linguistic analysis. Discussion of discourse taxonomy, data collection methodologies, data organization, analytical frameworks. Letter grading.

**235A-235B. Seminars: Selected Topics in Modern Japanese Fiction.** (4-4) Seminar, three hours. May be repeated for credit with consent of instructor. In Progress (235A) and letter (235B) grading.

**240A-240B. Seminars: Selected Topics in Japanese Literature.** (4-4) Seminar, three hours. May be repeated for credit. In Progress (240A) and letter (240B) grading.

**241A-241B. Seminars: Japanese Classics.** (4-4) Seminar, three hours. Prose and poetry from early times to 1868. May be repeated for credit with consent of instructor. In Progress (241A) and letter (241B) grading.

**243. Translation Workshop: Premodern Japanese Texts.** (2) Seminar, two hours. Requisite: course 200. Translation, grammatical analysis, and discussion of selections from premodern Japanese texts. S/U grading.

**245A-245B. Seminars: Medieval Japanese Literature.** (4-4) Seminar, three hours. Preparation: one year of classical Japanese. Selected readings in travel poetry, travel diaries, and other genres of Japanese travel literature of Heian, Kamakura, Nambokucho, and Murōmachi periods. May be repeated for credit with consent of instructor. In Progress (245A) and letter (245B) grading.

**C249. Introduction to Kambun and Other Literary Styles.** (4) Lecture, three hours. Requisite: course 110A. Introduction to Kambun, Japanese literary rendering of premodern Sino-Japanese, and Sorobun, epistolary style. Concurrently scheduled with course C149. Letter grading.

**C250. Topics in Japanese Literature and Philosophy.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Discussion of philosophical topics such as experience, identity, value, technology, in light of Japanese literary texts. Concurrently scheduled with course C150. Letter grading.

**C259. Variable Topics in Culture and Society in Japan.** (4) Lecture, three hours; discussion, one hour. Examination of relationship between culture (art, literature, film) and society in Japan. Reading, audio and visual material, discussion, and development of culminating project. May be repeated for credit with topic change. Concurrently scheduled with course C159. S/U or letter grading.

**C260. Japanese Buddhism.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Development of Buddhism in Japan in its cultural context, with emphasis on key ideas and teachings. Concurrently scheduled with course CM160. Letter grading.

**265A-265B. Seminars: Japanese Buddhist Texts.** (4-4) Seminar, three hours. May be repeated for credit with consent of instructor. In Progress (265A) and letter (265B) grading.

**270A-270B. Seminars: Japanese Ritual Arts.** (4-4) Seminar, three hours. Reading knowledge of Japanese not required. Discussions and readings on ritual (performing) arts of Japan comprising music, dance, storytelling, viewing, purification, divination, disguise, mimicry, and competitive as well as acrobatic arts, with special emphasis on religio-magical purposes and symbolic structure of these arts. In Progress (270A) and letter (270B) grading.

**C271. Topics in Japanese Studies.** (4) Lecture, three hours. Requisite: course 100C or Japanese placement test. Advanced course that explores Japanese culture through in-depth reading of Japanese-language texts and/or visual documents. Topics include literature, religion, folklore, cultural history, language, and society. Concurrently scheduled with course C171. S/U or letter grading.

**M276. Reading Modern Bodies.** (4) (Same as Comparative Literature M276.) Seminar, three hours. Designed for graduate students. Exploration of construction of human body through various modern technologies and discourses, including those of disease, diet, race, gender, and sexuality. Examination of texts from variety of locales, with particular emphasis on Japan. S/U or letter grading.

**C282. Japanese Folklore.** (4) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Lectures/discussions on native religious rituals (festivals) and observances of Japanese, with special emphasis on artistic behavior. Discussion of Shinto,

Shinto/Buddhist syncretism, and other non-Buddhist belief systems. Concurrently scheduled with course C182. Letter grading.

**297A. Seminar: Premodern Japan.** (4) Seminar, three hours. Selected topics on premodern Japan. Letter grading.

**297B. Seminar: Modern Japan.** (4) Seminar, three hours. Selected topics on modern Japan. Letter grading.

## Korean

### Lower-Division Courses

**1. Elementary Modern Korean.** (5) Lecture, three hours; discussion, two hours. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Introduction to standard spoken Korean and Korean writing, with emphasis on conversation. P/NP or letter grading.

**1A. Elementary Korean for Korean-Heritage Speakers.** (5) Lecture, three hours; discussion, one hour. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Designed for Korean-heritage learners who have very limited knowledge in Korean language or have had no formal instruction in it and to students with no Korean-heritage background who want more Korean speaking/listening exposure than available in course 1. Emphasis on spelling, basic grammar, reading, writing, and daily conversation. P/NP or letter grading.

**2. Elementary Modern Korean.** (5) Lecture, three hours; discussion, two hours. Enforced requisite: course 1 with grade of C or better or Korean placement test. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Continuation of course 1. P/NP or letter grading.

**2A. Elementary Korean for Korean-Heritage Speakers.** (5) Lecture, three hours; discussion, one hour. Enforced requisite: course 1A with grade of C or better or Korean placement test. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Designed for students who are from Korean-speaking family background and have some limited knowledge of Korean and to students with no Korean-heritage background who want more Korean speaking/listening exposure than available in course 2. Emphasis on formal aspects of standard Korean (basic grammar, reading, daily conversation, polite forms, basic writing). P/NP or letter grading.

**3. Elementary Modern Korean.** (5) Lecture, three hours; discussion, two hours. Enforced requisite: course 2 with grade of C or better or Korean placement test. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Continuation of course 2. P/NP or letter grading.

**3A. Elementary Korean for Korean-Heritage Speakers.** (5) Lecture, three hours; discussion, one hour. Enforced requisite: course 2A with grade of C or better or Korean placement test. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Designed for students with no Korean-heritage background who want more Korean speaking/listening exposure than available in course 3. Continuation of course 2A. P/NP or letter grading.

**3R. Accelerated Modern Korean for Advanced Beginners.** (5) Lecture, three hours; discussion, one hour. Enforced requisite: Korean placement test or department consent. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. For students who wish to complete one-year foreign language requirement at accelerated pace. P/NP or letter grading.

**4. Intermediate Modern Korean.** (5) Lecture, three hours; discussion, one hour. Requisite: course 3 or 3A or 8 with grade of C or better or Korean placement test. Not open to students who have learned, from whatever source, enough Korean to qualify for more

advanced courses. Continuation of course 3. Conversation, composition, and readings with structural analysis in modern Korean. P/NP or letter grading.

**4A. Intermediate Korean for Korean Speakers.** (5) Lecture, five hours. Enforced requisite: course 3A with grade of C or better or Korean placement test. Not open to students who attended elementary school in Korea for more than one year or who have learned, from whatever source, enough Korean to qualify for more advanced courses. Designed for students who seek training in written components of standard Korean (spelling, reading, writing, and grammar) at intermediate level. Continuation of course 3A. P/NP or letter grading.

**5. Intermediate Modern Korean.** (5) Lecture, three hours; discussion, one hour. Enforced requisite: course 4 with grade of C or better or Korean placement test. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Continuation of course 4. P/NP or letter grading.

**5A. Intermediate Korean for Korean Speakers.** (5) Lecture, five hours. Enforced requisite: course 4A with grade of C or better or Korean placement test. Not open to students who attended elementary school in Korea for more than one year or who have learned, from whatever source, enough Korean to qualify for more advanced courses. Designed for Korean-heritage learners. Emphasis on four skills (spelling, grammar, readings, and conversation in modern Korean). P/NP or letter grading.

**6. Intermediate Modern Korean.** (5) Lecture, three hours; discussion, one hour. Enforced requisite: course 5 with grade of C or better or Korean placement test. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Continuation of course 5. P/NP or letter grading.

**6A. Intermediate Korean for Korean Speakers.** (5) Lecture, five hours. Enforced requisite: course 5A with grade of C or better or Korean placement test. Not open to students who attended elementary school in Korea for more than one year or who have learned, from whatever source, enough Korean to qualify for more advanced courses. Designed for Korean-heritage learners. Emphasis on four skills (spelling, grammar, readings, and conversation in modern Korean). Continuation of course 5A. Completion of course 6A is equivalent to completion of course 6. P/NP or letter grading.

**8. Elementary Korean: Intensive.** (15) Lecture, 10 hours; discussion, 10 hours. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Intensive course equivalent to courses 1, 2, and 3. Introduction to fundamentals of standard Korean, including pronunciation, grammar, and Korean characters, with emphasis on all four basic language skills—speaking, listening comprehension, reading, and writing. Offered in summer only. P/NP or letter grading.

**10. Intermediate Modern Korean: Intensive.** (15) Lecture, 10 hours; discussion, 10 hours. Recommended preparation: course 3, 3A, or 8, or Korean placement test, or courses equivalent to elementary-level Korean. Second-year Korean. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Intensive course equivalent to courses 4, 5, and 6. Conversation, composition, and readings with structural analysis in modern Korean. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**40. Korean Wave: Globalization of South Korean Popular Culture.** (5) Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Introduction to Korean popular culture and its relationship to transnational social and political contexts. P/NP or letter grading.



**40W. Korean Wave: Globalization of South Korean Popular Culture.** (5) Lecture, two and one half hours; discussion, one hour. Enforced requisite: English Composition 3. Not open for credit to students with credit for course 40. Knowledge of Korean not required. Introduction to Korean popular culture, with focus on representative global phenomenon of Korean Wave (Hallyu). Use of concepts that theorize transnational flows of culture and relationship between cultural and sociopolitical power as framework, with focus on different genres of media and their individual examples—from pop music, drama, film, and television. Analysis to understand each as example of larger movement of culture across national borders from contexts of production to contexts of reception. Satisfies Writing II requirement. Letter grading.

**50. History of Korean Civilization.** (5) Lecture, three hours; discussion, one hour. Knowledge of Korean not required. General survey of development of Korean culture within context of political, social, and economic history. P/NP or letter grading.

**M60. Introduction to Korean Religions.** (5) (Same as Religion M60C.) Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. General survey of history of religions in Korea—Shamanism, Buddhism, Confucianism, Daoism, Christianity, Tonghak, and some new religions—with focus on religious doctrines, practices, Korean characteristics, and social impacts. P/NP or letter grading.

**70. Images of Korea.** (5) Lecture, three hours; discussion, one hour. Knowledge of Korean culture, literature, or language not required. Introduction to visual and textual representations of Korea. Letter grading.

**75. Introduction to Korean Literature and Culture.** (5) Lecture, three hours; discussion, one hour. Broad overview of cultural history of Korea, from premodern period into present. P/NP or letter grading.

**80. Introduction to Korean Cinema.** (5) Lecture, three hours; discussion, one hour. Broad overview of Korean film history, from beginning of 20th century into present. P/NP or letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**100A-100B-100C. Advanced Modern Korean.** (4-4-4) Lecture, three hours; discussion, one hour. Requisite: course 6, 6A, or 10 with grade of C or better or Korean placement test. Course 100A with grade of C or better or Korean placement test is enforced requisite to 100B; course 100B with grade of C or better or Korean placement test is enforced requisite to 100C. Not open to students who have learned, from whatever source, enough Korean to qualify for more advanced courses. Continuation of courses 6/6A. Readings of modern prose and poetry, with emphasis on grammar and Sino-Korean. P/NP (undergraduates), S/U (graduates), or letter grading.

**101A-101B-101C. Advanced Readings in Modern Korean.** (4-4-4) Lecture, three hours. Enforced requisite: course 100C or Korean placement test. Course 101A or Korean placement test is enforced requisite to 101B; course 101B or Korean placement test is enforced requisite to 101C. Advanced readings and discussion for students planning to do advanced coursework or research on Korea. Topics selected from magazines, journals, and books related to humanities and social sciences. P/NP (undergraduates), S/U (graduates), or letter grading.

**101I. Advanced Readings in Modern Korean: Intensive.** (12) Lecture, 15 hours. Enforced requisite: course 100C or Korean placement test. Intensive course equivalent to courses 101A, 101B, and 101C. Learning advanced Korean language with emphasis on pop culture and social issues of contemporary Korean society. Expansion of Korean literacy and cultural knowledge by examining Korean films/drama, newspapers, and other contemporary publications. Offered in summer only. P/NP or letter grading.

**102A-102B-102C. Advanced Korean Conversation.** (4-4-4) Lecture, three hours. Requisite: course 6 or 6A or 10 or Korean placement test. Not open to students who attended elementary school in Korea for more than two years or who have learned, from whatever source, enough Korean to qualify for more advanced courses. Designed to improve spoken proficiency. Each course may be taken independently for credit. P/NP or letter grading.

**103A-103B-103C. Readings in Sino-Korean Characters.** (4-4-4) Lecture, three hours; discussion, two hours. Requisite: course 100C or Korean placement test. Course 103A or Korean placement test is requisite to 103B; course 103B or Korean placement test is requisite to 103C. Sino-Korean vocabulary and characters necessary for advanced and superior level of knowledge in Korean. Sino-Korean characters are used differently from same Chinese characters used in contemporary China in terms of pronunciation, meaning, and word formation. Professional-level Korean speakers need to be able to read at least 1,800 Sino-Korean characters. Reinforcement of collocation patterns and semantic association of Sino-Korean vocabulary. P/NP or letter grading.

**104A-104B-104C. Korean Writing for Advanced Learners.** (4-4-4) Lecture, three hours; discussion, one hour. Enforced requisite: course 101C or Korean placement test. Emphasis on academic writing in Korean, including rhetorical conventions, argument construction and coherence, and development of prose style. Readings include representative examples of diverse genres selected from magazines, journals, and books. Each course may be taken independently for credit. P/NP (undergraduates), S/U (graduates), or letter grading.

**C105A-C105B-C105C. Reading Korean Academic Texts.** (4-4-4) Lecture, three hours. Enforced requisite: course 101C or Korean placement test. Intended to improve reading skills for students who have studied Korean to advanced level, with coverage in Korean of materials on Korean history, culture, and society. Each course may be taken independently for credit. Concurrently scheduled with courses C205A-C205B-C205C. P/NP or letter grading.

**106A-106B-106C. Superior Korean.** (4-4-4) Lecture, three hours. Recommended preparation: course 101C. May not be taken concurrently with course 102A, 102B, or 102C. Use of speaking, listening, reading, and writing skills to participate effectively, or understand without difficulty any practical, social, and professional topics, whether those topics are familiar or not. Each course may be taken independently for credit. P/NP or letter grading.

**106SL. Superior Korean with Service Learning.** (4) Lecture, three hours; fieldwork, two hours. Recommended preparation: course 101C. May not be taken concurrently with course 102A, 102B, 102C, 106A, or 107SL. Use of speaking, listening, reading, and writing skills to participate effectively, or understand without difficulty any practical, social, and professional topics, whether those topics are familiar or not. Opportunity for students to communicate in Korean in authentic contexts while providing useful service to community. P/NP or letter grading.

**107A-107B-107C. Professional/Academic Korean.** (4-4-4) Lecture, three hours. Requisite: course 101C or Korean placement test. Course 107A or Korean placement test is requisite to 107B; course 107B or Korean placement test is requisite to 107C. May not be taken concurrently with course 102A, 102B, or 102C. Development of professional and academic proficiency in oral and written Korean to understand many sociolinguistic and cultural references as well as variety of styles and forms pertinent to professional needs, meet demands of professional interactions, and carry out professional-level tasks in student specialization areas. Special attention to vocabulary development on professional level. Development of both interactive and noninteractive listening. Research projects to be assigned according to student interests. P/NP or letter grading.

**107SL. Professional/Academic Korean and Community-Based Learning.** (4) Lecture, three hours; fieldwork, two hours. Requisite: course 101C or Korean placement test. May not be taken concurrently with course 102A, 102B, 102C, 106A, 106SL, or 107A. Development of professional and academic proficiency in oral and written Korean to understand many sociolinguistic and cultural references as well as variety of styles and forms pertinent to professional needs, meet demands of professional interactions, and carry out professional-level tasks in student specialization areas. Special attention to vocabulary development on professional level. Research projects to be assigned according to student interests. Opportunity for students to communicate in Korean in authentic and professional contexts while providing useful service to community. P/NP or letter grading.

**108FL. Special Studies: Readings in Korean.** (2) Seminar, two hours. Enforced requisite: course 100C or Korean placement test. Students must be concurrently enrolled in affiliated main course. Additional work in Korean to augment work assigned in main course, including reading, writing, and other exercises. May be repeated for credit. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Korean.** (2) Tutorial, two hours. Requisite: course 100C or Korean placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Korean. May be repeated for credit. P/NP or letter grading.

**CM120. Structure of Korean.** (4) (Same as Linguistics M177.) Lecture, three hours; discussion, one hour. Recommended preparation: two years of Korean, or one year of Korean and some knowledge of linguistics. Discussion of major syntactic, semantic, and pragmatic characteristics of Korean in light of linguistic universals, with brief introduction to formation, typological features, and phonological structure of Korean. Concurrently scheduled with course C220. Letter grading.

**124. Topics in Korean Language and Culture.** (4) Lecture, three hours; discussion, one hour. Recommended preparation: one to two years of college-level Korean. Introduction of basic concepts in sociocultural linguistics, discourse analysis, and multimedia resources to analyze Korean language and culture. Study to increase understanding of variety of sociocultural variables of Korean language. Exploration of interrelationship among language, culture, and society by examining Korean popular media (e.g., film/television drama, talk shows, music videos, digital discourse, advertisement, etc.). P/NP or letter grading.

**CM127. Contrastive Analysis of Japanese and Korean.** (4) (Same as Japanese CM127 and Linguistics M178.) Lecture, three hours; discussion, one hour. Recommended preparation: two years of Japanese and knowledge of Hangul, or two years of Korean and knowledge of Hiragana. Prior linguistic background also recommended. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. Concurrently scheduled with course CM227. Letter grading.

**130A-130B. Readings in Modern Korean Literature.** (4-4) Lecture, three hours. Enforced requisites: course 100C or Korean placement test, English Composition 3 or 3H or one course from Comparative Literature 1A,

1B, 1C, 1D. Readings and discussion of major modern Korean literary texts. Each course may be taken independently for credit. Letter grading.

**148A. Reading Modern Korean Academic Texts. (4)** Seminar, three hours. Prerequisite: Korean 101C or Korean placement test. Designed to improve reading skills for students who have studied Korean to advanced level, and enhance their understanding of Korean culture and society. Covers Korean academic texts (book chapters, journal articles, reviews, and primary sources) on various issues of modern Korean literature, history, philosophy, religions, economy, and politics. P/NP or letter grading.

**C149. Readings of Sino-Korean and Korean Sources of Modern Korea. (4)** Seminar, three hours. Recommended preparation: reading knowledge of Korean and basic classical Chinese. Readings and discussions of Sino-Korean and Korean texts published in modern Korean newspapers, magazines, and books from 1885 to 1970. Concurrently scheduled with course C249. Letter grading.

**C150. Korean Literature in Translation: Classical. (4)** Lecture, three hours. Knowledge of Korean not required. Survey of premodern Korean literature from beginning to 19th century. Concurrently scheduled with course C250. P/NP or letter grading.

**C151. Korean Literature in Translation: Modern. (4)** Lecture, three hours; discussion, one hour. Prerequisite: English Composition 3 or 3H or one course from Comparative Literature 1A, 1B, 1C, 1D. Knowledge of Korean not required. Survey of modern and contemporary Korean literature. Concurrently scheduled with course C251. P/NP or letter grading.

**153. Korea West Encounters. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Exploration of major cross-cultural encounters between Korea and West from late 16th to early 20th century and writings of leading historical figures. Letter grading.

**154. Contemporary Korean Culture through Literature and Film. (4)** Lecture, three hours; discussion, one hour. Prerequisite: English Composition 3 or one course from Comparative Literature 1A, 1B, 1C, 1D. Knowledge of Korean not required. Use of fiction and film to explore contemporary Korean culture in cross-cultural context. P/NP or letter grading.

**155. Topics in Korean Cinema. (4)** Lecture, one hour; discussion, one hour; film viewing, three hours. Knowledge of Korean not required. Historical and critical survey of Korean cinema, examining intersection between 20th-century Korean history, politics, and filmmaking. P/NP or letter grading.

**159. Variable Topics in Culture and Society in Korea. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Examination of relationship between culture (art, literature, film) and society in Korea. Reading, audio and visual material, discussion, and development of culminating projects and/or writing assignments. May be repeated for credit with topic change. Letter grading.

**CM160. Korean Buddhism. (4)** (Same as Religion M161C.) Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Introduction and development of Buddhism in Korea, interactions between indigenous Korean culture and Sinic traditions of Buddhism, Korean syntheses of imported Buddhist theological systems and meditative techniques, and independent Son (Zen) schools of Korea. Concurrently scheduled with course C260. Letter grading.

**165. Introduction to Korean Buddhist Texts. (4)** Lecture, three hours; discussion, one hour. Recommended prerequisite: course 100A or Chinese 110C or Korean placement test. Introduction to reading premodern Korean Buddhist texts written in Sino-Korean and taken from indigenous doxographic materials and philosophical writings, Korean Buddhist apocryphal scriptures, native exegetical commentaries, and Son (Zen) texts. Coverage varies. Texts may be read in either Sino-Korean or literary Chinese. May be repeated with consent of instructor. Letter grading.

**172. Topics in Korean Christianity. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Historical development of Christianity in Korea, beliefs and practices, impact of Christianity on

modern Korean culture and society. Coverage varies. May be repeated for credit with consent of instructor. Letter grading.

**175. Intellectual History of Premodern Korea. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. General survey of Korean thought from earliest records to 19th century, including shamanism, Taoism, Buddhism, Christianity, and neo-Confucianism. Korean traditions and those found in India, China, Japan, and West. P/NP or letter grading.

**176. Introduction to Korean Confucian Texts. (4)** Lecture, three hours. Enforced prerequisite: course 100C or Chinese 110C or Korean placement test. Reading in premodern Koryo and Choson texts on politics, society, and culture. Coverage varies. Texts may be read in either Sino-Korean or literary Chinese. May be repeated with consent of instructor. P/NP or letter grading.

**C177. Intellectual History of Modern Korea. (4)** (Formerly numbered 177.) Lecture, three hours; discussion, one hour. Prerequisite: course 50. Knowledge of Korean not required. Survey of Korean thought in late 19th and 20th centuries, including religious thought, political thought, feminism, nationalism, and economic thinking and practice. Concurrently scheduled with course C277. P/NP or letter grading.

**178. Introduction to Modern Korean Historiography. (4)** Seminar, three hours. Enforced prerequisite: course 101A or C105A or Korean placement test. Introduction to major Korean language historiographical works on Korean history in modern period. Coverage varies. May be repeated with consent of instructor. P/NP or letter grading.

**180A-180B-180C. History of Korea. (4-4-4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Examination of evolution of Korean culture and society within context of political and institutional industry. Consideration of both higher and popular culture. P/NP or letter grading. **180A.** Through 1259; **180B.** 1260 through 1876; **180C.** Since 1876.

**181. Reading Korean Cultural Landscape. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Introduction to Korean culture from historical/geographical perspective. Examination of human cultural imprint on land in religious, linguistic, rural, and urban landscapes. Letter grading.

**182. 1894 Kabo Reforms: History at Crossroads of Civilizations. (4)** Seminar, three hours. Knowledge of Korean not required. Examination of modernizing reforms adopted in Korea in 1894. Consideration of conflict among radical Westernizers who had studied in Japan and U.S., moderate reformers who followed Chinese model of adopting Western technology to defend Confucian order, and orthodox Confucians who strongly opposed any changes. Focus on historical and intellectual background in first half, with debates among students who assume roles in Deliberative Council that was responsible for designing reforms in second half. Letter grading.

**183. Korean Folklore. (4)** Lecture, three hours; discussion, one hour. Survey of Korean folklore and its perspectives and methods—oral literature, performing folk arts, social folk custom, and material culture. P/NP or letter grading.

**184. Women in History: Korea. (4)** Lecture, two and one half hours; discussion, one hour. Examination of Korean history from perspective of women. Because gender roles and identities are social constructs and thus vary over time and place, consideration of how concepts relating to gender have been continuously reconstructed. Examination of how premodern women's identities formed through continual negotiation by women and men with larger processes of political, social, and cultural changes, such as formation of centralized bureaucratic systems, rise of aristocratic social system, and propagation of, and challenges to, Confucian social norms. Examination of how after opening of Korea to West and its aftermath brought about changes in women's education, employment, social/legal status, especially in context of colonialism, war, democratization, and economic development. Covers current issues concerning gender in 21st-century Korea. P/NP or letter grading.

**184A. Women in History: Premodern Korea. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Examination of premodern Korean history from perspective of women. Consideration of how gender roles and identities were socially (re)constructed over time, with focus on continual negotiation by women and men within larger processes of political, social, and cultural changes such as formation of centralized bureaucratic systems, rise of aristocratic social order, and propagation of Confucian social values. Letter grading.

**184B. Women in History: Modern Korea. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Examination of modern Korean history from perspective of women since mid-19th century. Consideration of how gender roles and identities were socially (re)constructed over time, with focus on continual negotiation by women and men within larger processes of political, social, and cultural transformations. Discussion of issues such as changes in women's education, employment, social/legal status, especially in context of colonialism, war, democratization, and economic development. P/NP or letter grading.

**185. Education and Society in Korea. (4)** Lecture, three hours. Knowledge of Korean not required. Coverage of historical legacies and current realities of education in Korea. Topics include Confucian background, colonial education, role of education in rapid economic development, views on education as vehicle for social mobility, and problems related to excessive emphasis on education. P/NP or letter grading.

**M186. Korea and Vietnam: Comparative Modern Histories. (4)** (Same as Vietnamese M186.) Seminar, three hours. Comparative survey of intertwined and parallel histories of Korea and Vietnam, organized chronologically, but structured around key themes that serve as basis for comparison. Modern experiences of colonized Vietnam and Korea have many significant parallels, including imposition of colonial control, transition to modernized societies within context of colonialism, and shared experiences of World War II. Both were also divided after war between communist regimes in north and strongly anticommunist regimes in south. Each also experienced warfare after division and direct involvement of U.S. during height of cold war between 1950s and 1970s. P/NP or letter grading.

**187. Popular and Folk Religion in Korea. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Introduction to history, forms, and scholarship concerning folk religion in Korea. Exploration of forms of popular and folk religion in Korea, including shamanism, ancestor worship, and contemporary religions. Consideration of fortune-telling, geomancy, and spirit belief. P/NP (undergraduates), S/U (graduates), or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars: Premodern or Early Modern Korea. (4)** Seminar, three hours. Research seminar on selected topics in premodern or early modern Korea. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**191B. Variable Topics Research Seminars: Contemporary Korean History.** (4) Seminar, three hours. Research seminar on selected topics in modern Korean history. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading.

**197. Individual Studies in Korean.** (4) Tutorial, to be arranged. Limited to juniors/seniors and graduate students who desire more advanced or specialized instruction in Korean. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required; see undergraduate adviser. P/NP or letter grading.

## Graduate Courses

**200. Bibliography and Methods of Research in Korean.** (4) Lecture, three hours. Prerequisites: course 101C, Chinese 110C. Review of basic Western and modern Korean reference books, with concentration on Korean literature and language, and survey of basic bibliographical material. In addition, introduction to most important primary sources in student's field of specialization. Letter grading.

**203. Variable Topics in Korean Culture.** (4) Seminar, three hours. Advanced course that explores Korean culture through in-depth reading of Korean-language texts and/or visual documents. Topics include literature, religion, folklore, cultural history, language, and society. May be repeated for credit. S/U or letter grading.

**C205A-C205B. Reading Korean Academic Texts. (4-4)** Lecture, three hours. Prerequisite: course 101C or Korean placement test. Intended to improve reading skills for students who have studied Korean to advanced level, with coverage in Korean of materials on Korean history, culture, and society. Each course may be taken independently for credit. Concurrently scheduled with courses C105A-C105B. S/U or letter grading.

**C205C. Reading Korean Academic Texts. (4)** Lecture, three hours. Intended to improve reading skills for students who have studied Korean to advanced level, with coverage in Korean of materials on Korean history, culture, and society. May be taken independently for credit. Concurrently scheduled with course C105C. S/U or letter grading.

**210. Thought and Society in Korea.** (4) Readings/discussion, three hours. Preparation: reading knowledge of Korean. Designed for graduate students. Readings in Korean intellectual history and its social, political, and economic background from rise of neo-Confucianism in 14th century to 20th century. Letter grading.

**211. Thought and Society in Modern Korea.** (4) Discussion, three hours. Preparation: reading knowledge of Korean. Designed for graduate students. Critical examination of list of books central to field of modern Korean history, including such topics as Korean capitalism and communism, intellectual history, social movements, and Korean War. Letter grading.

**212. 19th-Century Korea.** (4) Seminar, three hours; discussion, one hour. Prerequisite: course 180B or 180C. Proseminar covering crucial period from coronation of Sunjo in 1800 to annexation of Korea by Japan in 1910, including major historical scholarship on political, diplomatic, social, economic, intellectual, and cultural history. Letter grading.

**215. Korean Literary History.** (4) Lecture, three hours. Designed for graduate students. Critical history of development of traditional Korean literature, with emphasis on canon and ideology, literary systems, hierarchy of genres, rise of literary kinds and forms, periodization, and critical issues in literary history. One particular area of focus to be nationalist canon that governs literary studies in Korea and West. Letter grading.

**C220. Structure of Korean.** (4) Lecture, three hours; discussion, two hours. Recommended preparation: two years of Korean, or one year of Korean and some knowledge of linguistics. Discussion of major syntactic, semantic, and pragmatic characteristics of Ko-

rean in light of linguistic universals, with brief introduction to formation, typological features, and phonological structure of Korean. Concurrently scheduled with course CM120. Letter grading.

**224A-224B. Seminars: Selected Topics in Korean Linguistics. (4-4)** Seminar, three hours. Critical reading and discussion of selected topics in Korean functional linguistics (grammaticalization, discourse, pragmatics, sociolinguistics, syntax, morphology) and pedagogy. In Progress (224A) and letter (224B) grading.

**225. Korean Corpus Linguistics and Language Pedagogy.** (4) Seminar, three hours. Introduction to corpus-based discourse and grammatical analysis using Korean corpora and concordancing programs. Special emphasis on development of corpus-based activities for language teaching and curriculum design. S/U or letter grading.

**CM227. Contrastive Analysis of Japanese and Korean.** (4) (Same as Japanese CM227.) Lecture, three hours; discussion, one hour. Recommended preparation: two years of Japanese and knowledge of Hangul, or two years of Korean and knowledge of Hiragana. Prior linguistic background also recommended. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. Concurrently scheduled with course CM127. Letter grading.

**230A-230B. Seminars: Literary Translation from Korean. (4-4)** Seminar, three hours. Preparation: reading knowledge of Korean. In consultation with instructor, students select works to be translated. Devoted to skill of producing accurate and readable translations, with emphasis on problems and techniques unique to poetry and prose. At end of term, students expected to produce publishable translations. May be repeated once with consent of instructor. In Progress (230A) and letter (230B) grading.

**235A-235B. Seminars: Topics in Modern Korean Literature. (4-4)** Seminar, three hours. Preparation: at least five years of Korean. Recommended: reading knowledge of Chinese or Japanese. Limited to graduate students. Study of selected period, movement, theme, or author of 20th-century Korean literature, with critical review of secondary works in Western and Korean languages. May be repeated for credit with consent of instructor. In Progress (235A) and letter (235B) grading.

**240A-240B. Seminars: Classical Korean Fiction. (4-4)** Seminar, three hours. Preparation: reading knowledge of Korean. Formal and thematic study of tales of marvelous, romance, satirical stories, diaries, and *p'ansori* fiction. Status of fiction in society and culture, fiction as imaginative representation of writer's relationship to real conditions of existence. Latest Western theory of narratology applied in analysis. In Progress (240A) and letter (240B) grading.

**243. Translation Workshop: Premodern Korean Texts. (2)** Seminar, two hours. Prerequisite: course 200. Translation, grammatical analysis, and discussion of selections from premodern Korean texts. S/U grading.

**245A-245B. Seminars: Classical Korean Poetry. (4-4)** Seminar, three hours. Preparation: reading knowledge of Korean. Critical reading and analysis of classical Korean poetry, including discussion of literary and cultural contexts of poetic genres. Nature of codes, conventions that make meaning possible. Review of latest Korean scholarship. May be repeated once with consent of instructor. In Progress (245A) and letter (245B) grading.

**248. Reading Korean Scholarly Journals: Social and Cultural Change as Reflected in Academic Discourse.** (4) Seminar, three hours. Recommended preparation: basic reading knowledge of Korean. Reading of recently published academic journal articles in Korean language. Coverage of rapidly changing multiple Korean identities and related issues in family, marriage, gender, urban poverty, and religious culture in context of globalization and neoliberalism. Special attention to minority groups. S/U or letter grading.

**C249. Readings of Sino-Korean and Korean Sources of Modern Korea.** (4) Seminar, three hours. Recommended preparation: reading knowledge of Korean and basic classical Chinese. Readings and discussions of Sino-Korean and Korean texts published in modern Korean newspapers, magazines, and books from 1885 to 1970. Concurrently scheduled with course C149. Letter grading.

**C250. Korean Literature in Translation: Classical. (4)** Lecture, three hours. Knowledge of Korean not required. Survey of premodern Korean literature from beginning to 19th century. Concurrently scheduled with course C150. S/U or letter grading.

**C251. Korean Literature in Translation: Modern. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Survey of modern and contemporary Korean literature. Concurrently scheduled with course C151. S/U or letter grading.

**C260. Korean Buddhism. (4)** Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Introduction and development of Buddhism in Korea, interactions between indigenous Korean culture and Sinitic traditions of Buddhism, Korean syntheses of imported Buddhist theological systems and meditative techniques, and independent Son (Zen) schools of Korea. Concurrently scheduled with course CM160. Letter grading.

**265A-265B. Seminars: Korean Buddhist Texts. (4-4)** Seminar, three hours. Selected topics in Korean Buddhist texts. Coverage varies. In Progress (265A) and letter (265B) grading.

**272. Seminar: Korean Christianity. (4)** Seminar, three hours. Coverage of representative scholars' writings on history of Korean Christianity, with focus on Protestantism. Issues include politics, identities of Korean Christians and Western missionaries, church growth and decline, medical, educational, literary, and woman's work, and Christianity's encounters with Korean religions, and foreign missions. S/U or letter grading.

**274. Seminar: Readings in Korean Christianity. (4)** Seminar, three hours. Reading of recent secondary sources of Christianity in Korea, covering doctoral dissertations, journal articles, book chapters, and books in English and Korean to help graduate students understand recent scholarship on diverse topics in Korean Christianity. Letter grading.

**C277. Intellectual History of Modern Korea. (4)** Lecture, three hours; discussion, one hour. Prerequisite: course 50. Knowledge of Korean not required. Survey of Korean thought in late 19th and 20th centuries, including religious thought, political thought, feminism, nationalism, and economic thinking and practice. Concurrently scheduled with course C177. S/U or letter grading.

**295A-295B. Seminars: Topics in Traditional Korean Cultural History. (4-4)** Seminar, three hours. Preparation: reading knowledge of Korean or literary Chinese. Discussion and research on major topics in Korean cultural history, such as Confucianization of Korean society, Practical Learning movement of late Choson dynasty, or Korean reactions to West in Eastern learning and enlightenment movements of 19th century. May be repeated for credit. In Progress (295A) and letter (295B) grading.

**296A-296B. Seminars: Topics in Modern Korean Cultural History. (4-4)** Seminar, three hours. Preparation: reading knowledge of Korean. Designed for graduate students. Graduate research seminar on selected topics in modern Korean history. In Progress (296A) and letter (296B) grading.

## South Asian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M60. Religion in Classical India: Introduction. (5)** (Same as Religion M60D.) Lecture, three hours; discussion, one hour. Introduction to religions of classical India—Vedic, Brahmanical, Hindu, Jain, and Buddhist—paying equal attention to change and continuity, with emphasis on chronological development. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**110A. Elementary Sanskrit. (4)** Lecture, three hours. Introduction to script and grammar, with reading exercises and attention to significance of Sanskrit for understanding of other Indo-European languages. P/NP or letter grading.

**110B. Intermediate Sanskrit. (4)** Lecture, three hours. Prerequisite: course 110A. Advanced aspects of grammar and reading of literary texts. P/NP or letter grading.

**110C. Advanced Sanskrit. (4)** Lecture, three hours. Prerequisite: course 110B. Reading of entire *Bhagavadgita* or comparable amount of other Sanskrit literature. P/NP or letter grading.

**115. Readings in Sanskrit. (4)** Lecture, three hours. Prerequisite: course 110C. Extensive reading in such texts as best serve students' needs. May be repeated for credit with consent of instructor. P/NP (undergraduates), S/U (graduates), or letter grading.

**150. Classical Indian Literature in Translation. (4)** Lecture, three hours. Knowledge of Asian languages not required. Survey of some landmarks of classical Indian literature from second millennium BCE into second millennium CE, including both poetry and prose, high art and more popular genres, and secular and religious texts, examined in their social and institutional contexts. P/NP or letter grading.

**155. Topics in South Asian Cinema and Literature. (4)** Lecture, three hours. Knowledge of Hindi/Urdu not required. Critical analysis of language and culture in South Asian diaspora as represented in films and/or literature. May be repeated once for credit. P/NP or letter grading.

**CM160. Buddhism in India. (4)** (Same as Religion M161D.) Lecture, three hours; discussion, one hour. Knowledge of Indian languages not required. Overview of social and doctrinal history of Buddhism from its origin to its disappearance in India, based not only on texts but on archaeological, art historical, and inscriptional sources. Examination of both formal doctrine and actual practices and on what learned Buddhists wrote and ordinary Buddhists did, saw, and made. Concurrently scheduled with course C260. Letter grading.

**170. Variable Topics in South Asian Linguistics, Languages, and Cultures. (4)** Lecture, three hours. Knowledge of Hindi/Urdu may be required. Critical analysis of language and culture in South Asian lin-

guistic area, exploring notions of India as linguistic area and as cultural area. May be repeated for credit. P/NP or letter grading.

**175. Introduction to Indic Philosophy. (4)** Lecture, three hours. Survey of main trends in Indian philosophy from ancient to modern times. P/NP or letter grading.

**185. Women and Gender in Ancient India. (4)** Lecture, three hours. Knowledge of Asian languages not required. Examination of position and function of women in ancient India, primarily through study of key religious and legal texts. Topics include women's life cycle, relation to social institutions, and challenges to these ideals, especially in narrative literature. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Graduate Courses

**M222A-M222B. Vedic. (4-4)** (Same as Indo-European Studies M222A-M222B and Iranian M222A-M222B.) Lecture, three hours. Preparation: knowledge of Sanskrit equivalent to course 110C. Characteristics of Vedic dialect and readings in Rig-Vedic hymns. Only course M222B may be repeated for credit. S/U or letter grading.

**230. Selected Readings in Sanskrit Texts. (4)** Lecture, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**234A-234B. Introduction to Panini's Grammar. (4-4)** Lecture, three hours. Prerequisite: course 110C. Reading of selected passages of text, with introduction to Panini's technique. S/U or letter grading.

**236A-236B. Pali and Prakrits. (4-4)** Lecture, three hours. Preparation: knowledge of Sanskrit equivalent to course 110B. Grammatical studies and reading of texts. Comparative considerations. S/U or letter grading. **236A.** Pali; **236B.** Prakrits.

**243. Translation Workshop: Premodern Sanskrit, Pali, and/or Prakrit Texts. (2)** Seminar, two hours. Prerequisite: course 110C. Translation, grammatical analysis, and discussion of selections from premodern Sanskrit, Pali, and/or Prakrit texts. S/U grading.

**C260. Buddhism in India. (4)** Lecture, three hours; discussion, one hour. Knowledge of Indian languages not required. Overview of social and doctrinal history of Buddhism from its origin to its disappearance in India, based not only on texts but on archaeological, art historical, and inscriptional sources. Examination of both formal doctrine and actual practices and on what learned Buddhists wrote and ordinary Buddhists did, saw, and made. Concurrently scheduled with course CM160. Letter grading.

## Southeast Asian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Visible Language: Study of Writing. (5)** (Same as Asian M20, Indo-European Studies M20, Near Eastern Languages M20, and Slavic M20.) Lecture, three hours; discussion, one hour. Consideration of

concrete means of language representation in writing systems. Earliest representations of language known are those of Near East dating to end of 4th millennium BC. While literate civilizations of Egypt, Indus Valley, China, and Mesoamerica left little evidence of corresponding earliest developments, their antiquity and, in case of China and Mesoamerica, their evident isolation mark these centers as loci of independent developments in writing. Basic characteristics of early scripts, assessment of modern alphabetic writing systems, and presentation of conceptual basis of semiotic language representation. Origins and development of early non-Western writing systems. How Greco-Roman alphabet arose in 1st millennium BC and how it compares to other modern writing systems. P/NP or letter grading.

**50. Southeast Asian Societies and Cultures. (5)** Lecture, three hours; discussion, one hour. General introduction to varied and diverse region of Southeast Asia. Designed to acquaint students with broad themes that characterize societies, cultures, and civilizations of this vitally important part of globe. Study of historical trajectories that have led eleven countries of region to present situations. Emphasis on examinations of these societies and important contemporary issues relating to geography, topography, politics, culture, literature, gender issues, religion, human rights, and environment. P/NP or letter grading.

**M60. Religious Traditions in Southeast Asia. (4)** (Same as Religion M60E.) Lecture, three hours. Introduction to historical development and contemporary practice of religions in Southeast Asia. Examination of indigenous religious beliefs and major textually based religions introduced to region, including Hinduism, Buddhism, Islam, and Christianity. P/NP or letter grading.

**70. Modern Southeast Asian Literature. (5)** Lecture, three hours; discussion, one hour. Introduction to modern literatures of Southeast Asia. Designed to expose students to range of literatures, predominantly novels and short stories, that were written across this region in response to dramatic changes caused by colonialism and its aftermath. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Modern Literatures in Southeast Asia. (4)** Lecture, three hours. Knowledge of Southeast Asian languages not required. Exploration of diversity of Southeast Asia in such areas as traditional culture, modernization, politics, and literature through modern literary texts. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**C120. Ghosts, Spirits, and Witches: Supernatural in Southeast Asia. (4)** Lecture, two hours; discussion, one hour. From magical tattoos, tree spirits, and faith healing to angry ghosts and disemboweled flying vampires, exploration of fantastic supernatural world of Southeast Asia through folk tales, urban myths, published accounts, popular films, and other media. Study of wide variety of supernatural creatures and

local specialists that populate imagination of this diverse region. Exploration also of unique regional concepts of power, morality, and justice that animate and frame Southeast Asian attitudes towards supernatural phenomena in modern world. Concurrently scheduled with course C220. P/NP or letter grading.

**130. Topics in Southeast Asian Literature. (4)** Lecture, three hours. Requisite: one course from Comparative Literature 1A, 1B, 1C, 1D, 2AW, 2BW, 2CW, or English Composition 3 or 3H. Knowledge of Southeast Asian languages not required. Advanced exploration of Southeast Asia through in-depth reading of texts from region. Topics include censorship, politics, language, and literature. P/NP or letter grading.

**135. Religion and Society in Southeast Asia. (4)** Lecture, three hours; discussion, one hour. Critical issues related to major religious traditions in Southeast Asia, with emphasis on reading and reflecting on recent scholarship regarding complex interactions between religion, state, and society in contemporary Southeast Asia. P/NP or letter grading.

**C140. Zomia: Peoples, Societies, and Cultures of Upland Southeast Asia. (4)** Lecture, three hours; discussion, one hour. Recommended requisite: prior course in Asian cultures or history. Multidisciplinary survey of peoples of upland Southeast Asia and critical issues affecting them. Topics include history, culture, human rights, ethnicity, religion, politics. Concurrently scheduled with course C240. P/NP or letter grading.

**C150. Indigenous Peoples of Southeast Asia. (4)** Lecture, two hours; discussion, one hour. In Southeast Asia, indigeneity is multi-layered concept. Most of population is native, yet there are specific ethnic groups that are legally designated or otherwise recognized as indigenous peoples. Ideas about indigeneity also vary across time and space, among indigenous peoples themselves, in ways that do not always align with elements valorized in anthropological, political, or global advocacy contexts. Offers local/national and regional orientation to modern plight of indigenous peoples in Southeast Asia, but situation politically within wider, global discussions and debates about indigenous activism and advocacy, as well as global academic scholarship pertaining to indigenous peoples. Study of most pertinent issues relating to modern indigenous realities in Southeast Asia. Students gain foundation to engage in comparative discussion with regard to indigenous peoples in Americas and elsewhere. Concurrently scheduled with course C250. P/NP or letter grading.

**157. Gender Issues in Southeast Asia. (4)** Seminar, three hours. Critical examination of gender issues in one or more Southeast Asian countries as they connect to social historical contexts nationally, regionally, or globally. May be repeated for credit. P/NP or letter grading.

**160. Majorities and Minorities in Southeast Asia. (4)** Lecture, two hours; discussion, one hour. Focus on political, cultural, and historical relationships between majority ethnic groups and minorities in possibly most culturally, religiously, and ethnically diverse regions of world—Southeast Asia. Provides productive framework to discuss nature of Southeast Asia's extreme diversity, and resulting multicultural relationships, in comparative and historical context—both regionally and, to some extent, globally. Discussions and assignments around gaining appreciation of experiences and perspectives of regions' many different types of minority peoples. Critical examination of majorityhood as lived experience and as factor that informs minority rights issues. Includes discussion of significant current events related to minority-majority relationships in Southeast Asia. P/NP or letter grading.

**170A-170B-170C. Topics in Southeast Asian Studies. (4-4-4)** Lecture, three hours. Exploration of Southeast Asian culture through in-depth reading of texts and/or visual documents. Topics include literature, religion, folklore, cultural history, and society. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor.

May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Southeast Asian. (4)** Tutorial, to be arranged. Limited to juniors/seniors and graduate students who desire more advanced or specialized treatment of one language offered in program beyond introductory and intermediate courses currently offered. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required; see academic coordinator. P/NP or letter grading.

## Graduate Courses

**205. Southeast Asian Culture and History. (4)** Seminar, three hours. Designed to expose graduate students to study of Southeast Asia as region across multiple disciplines. Discussions led by instructor and guest faculty members about core elements of their discipline's engagement with Southeast Asia, as well as latest trends in theory and research in that area. Reading of classic texts, as well as research articles representing current state of field. S/U or letter grading.

**C220. Ghosts, Spirits, and Witches: Supernatural in Southeast Asia. (4)** Lecture, two hours; discussion, one hour. From magical tattoos, tree spirits, and faith healing to angry ghosts and disemboweled flying vampires, exploration of fantastic supernatural world of Southeast Asia through folk tales, urban myths, published accounts, popular films, and other media. Study of wide variety of supernatural creatures and local specialists that populate imagination of this diverse region. Exploration also of unique regional concepts of power, morality, and justice that animate and frame Southeast Asian attitudes towards supernatural phenomena in modern world. Concurrently scheduled with course C120. S/U or letter grading.

**C240. Zomia: Peoples, Societies, and Cultures of Upland Southeast Asia. (4)** Lecture, three hours; discussion, one hour. Recommended requisite: prior course in Asian cultures or history. Multidisciplinary survey of peoples of upland Southeast Asia and critical issues affecting them. Topics include history, culture, human rights, ethnicity, religion, politics. Concurrently scheduled with course C140. S/U or letter grading.

**C250. Indigenous Peoples of Southeast Asia. (4)** Lecture, two hours; discussion, one hour. In Southeast Asia, indigeneity is multi-layered concept. Most of population is native, yet there are specific ethnic groups that are legally designated or otherwise recognized as indigenous peoples. Ideas about indigeneity also vary across time and space, among indigenous peoples themselves, in ways that do not always align with elements valorized in anthropological, political, or global advocacy contexts. Offers local/national and regional orientation to modern plight of indigenous peoples in Southeast Asia, but situation politically within wider, global discussions and debates about indigenous activism and advocacy, as well as global academic scholarship pertaining to indigenous peoples. Study of most pertinent issues relating to modern indigenous realities in Southeast Asia. Students gain foundation to engage in comparative discussion with regard to indigenous peoples in Americas and elsewhere. Concurrently scheduled with course C150. S/U or letter grading.

## Thai

### Lower-Division Courses

**1. Introductory Thai. (5)** Lecture, three hours; discussion, two hours. Coverage of basic Thai grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**2. Introductory Thai. (5)** Lecture, three hours; discussion, two hours. Requisite: course 1 with grade of C or better. Coverage of basic Thai grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**3. Introductory Thai. (5)** Lecture, three hours; discussion, two hours. Requisite: course 2 with grade of C or better. Coverage of basic Thai grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**3R. Thai Scripts. (5)** Lecture, five hours. Recommended preparation: speaking and listening skills in Thai and Thai placement test. Training in reading and writing at introductory level. Completion of course 3R is equivalent to completion of one year of college-level Thai. P/NP or letter grading.

**4. Intermediate Thai. (5)** Lecture, five hours. Reinforcement of basic Thai grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**5. Intermediate Thai. (5)** Lecture, five hours. Enforced requisite: course 4 with grade of C or better. Reinforcement of basic Thai grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**6. Intermediate Thai. (5)** Lecture, five hours. Enforced requisite: course 5 with grade of C or better. Reinforcement of basic Thai grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100A-100B-100C. Advanced Thai. (4-4-4)** Lecture, three hours. Course 100A with grade of C or better is requisite to 100B; course 100B with grade of C or better is requisite to 100C. Reinforcement of basic grammar and vocabulary acquired at beginning and intermediate levels. Coverage of more advanced topics on various aspects of Thai society. Broadening



of skills in conversation and composition. Reading of selected texts and authentic materials. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Thai.** (2) Tutorial, two hours. Requisite: course 6 or Thai placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Thai. May be repeated for credit. P/NP or letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Vietnamese

### Lower-Division Courses

**1. Introductory Vietnamese.** (5) Lecture, two hours; discussion, three hours. Coverage of basic Vietnamese grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**1A. Introductory Vietnamese for Heritage Learners.** (5) Lecture, two hours; discussion, three hours. Not open to students who have learned, from whatever source, enough Vietnamese to qualify for more advanced courses. Designed for Vietnamese-heritage learners who have some limited knowledge of Vietnamese or have had no formal instruction in Vietnamese. Emphasis on spelling, basic grammar, reading, writing, daily conversation, and polite forms. P/NP or letter grading.

**2. Introductory Vietnamese.** (5) Lecture, two hours; discussion, three hours. Enforced requisite: course 1 with grade of C or better. Coverage of basic Vietnamese grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**2A. Introductory Vietnamese for Heritage Learners.** (5) Lecture, two hours; discussion, three hours. Enforced requisite: course 1A with grade of C or better or Vietnamese placement test. Not open to students who have learned, from whatever source, enough Vietnamese to qualify for more advanced courses. Designed for Vietnamese-heritage learners who have some limited knowledge of Vietnamese or have had no formal instruction in Vietnamese. Emphasis on spelling, basic grammar, reading, writing, daily conversation, and polite forms. P/NP or letter grading.

**3. Introductory Vietnamese.** (5) Lecture, two hours; discussion, three hours. Enforced requisite: course 2 with grade of C or better. Coverage of basic Vietnamese grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**3A. Introductory Vietnamese for Heritage Learners.** (5) Lecture, two hours; discussion, three hours. Enforced requisite: course 2A with grade of C or better or Vietnamese placement test. Not open to students who have learned, from whatever source, enough Vietnamese to qualify for more advanced courses. Designed for Vietnamese-heritage learners who have some limited knowledge of Vietnamese or have had no formal instruction in Vietnamese. Emphasis on spelling, basic grammar, reading, writing, daily conversation, and polite forms. P/NP or letter grading.

**3R. Introductory Vietnamese Reading and Writing.** (5) Lecture, five hours. Recommended preparation: speaking and listening skills in Vietnamese. Training in reading and writing skills at elementary level, equivalent to completion of one year of Vietnamese. P/NP or letter grading.

**4. Intermediate Vietnamese.** (5) Lecture, two hours; discussion, three hours. Enforced requisite: course 3 with grade of C or better. Reinforcement of basic Vietnamese grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**5. Intermediate Vietnamese.** (5) Lecture, two hours; discussion, three hours. Enforced requisite: course 4 with grade of C or better. Reinforcement of basic Vietnamese grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**6. Intermediate Vietnamese.** (5) Lecture, two hours; discussion, three hours. Enforced requisite: course 5 with grade of C or better. Reinforcement of basic Vietnamese grammar and coverage of more advanced topics. Broadening of skills in conversation and composition; reading of selected texts. P/NP or letter grading.

**8. Elementary Vietnamese: Intensive.** (15) Lecture, 10 hours; discussion, 10 hours. Intensive course equivalent to courses 1, 2, and 3. Coverage of basic Vietnamese grammar, with equal emphasis on reading, writing, conversation, and comprehension. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**40. War in Vietnamese Popular Culture.** (5) Lecture, three hours; discussion, one hour. Knowledge of Vietnamese not required. Focus on popular culture produced and consumed by, or about, people in Vietnam and diasporas. Materials include theoretical and other scholarly texts, as well as literature, music, visual art, films, and comics. Reading of scholarly writings for argument, date, and methods, and learning to apply theoretical frameworks in readings and lectures to analysis of popular cultural productions. P/NP or letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100A-100B-100C. Advanced Vietnamese.** (4-4-4) Lecture, three hours. Enforced requisite: course 6 with grade of C or better or Vietnamese placement test. Designed to strengthen and build on language skills previously acquired at beginning and intermediate levels. Content-based readings and discussion, with various aspects of Vietnam, particularly its culture.

Readings include both authentic original works and simplified texts. Each course may be taken independently for credit. P/NP or letter grading.

**109. Advanced Tutorial Instruction in Vietnamese.** (2) Tutorial, two hours. Requisite: course 6 or Vietnamese placement test. Tutorial and guided independent study to help students develop advanced to superior proficiency in oral and written Vietnamese. May be repeated for credit. P/NP or letter grading.

**CM155. Topics in Vietnamese Cinema and/or Literature.** (4) (Same as Asian American Studies M173.) Lecture, three hours; discussion, one hour. Knowledge of Vietnamese not required. Critical and historical examination of literary and/or filmic representations connected to social practices such as empire, nation, diaspora, and globalization. Original language course materials available for interested students. May be concurrently scheduled with course C255. P/NP or letter grading.

**155FL. Readings in Vietnamese.** (2) Seminar, two hours. Requisite: course 3 or 3A. Enforced corequisite: course M155. Additional work in Vietnamese to augment work assigned in course M155, including reading, writing, and other exercises in Vietnamese. P/NP or letter grading.

**170. Variable Topics in Vietnamese Linguistics, Languages, and Cultures.** (4) Lecture, three hours. Knowledge of Vietnamese may be required. Critical analysis of language and culture in Vietnam, exploring notion of Vietnam as culture area, surveying literary landscape through poetry and short stories. May be repeated for credit. P/NP or letter grading.

**180A. Vietnam: History and Civilization to 1858.** (4) Lecture, three hours; discussion, one hour. Recommended preparation: at least one Asian history course. Exploration of Vietnamese society and culture from origins to early 19th century, with emphasis on examination of ways in which interactions between indigenous and Chinese/Southeast Asian political and cultural forces helped shape religious, literary, and social traditions. P/NP or letter grading.

**180B. Vietnam: History and Civilization, 1858 to Present.** (4) Lecture, three hours; discussion, one hour. Recommended preparation: at least one Asian history or civilization course. Exploration of Vietnamese history and civilization during colonial and postcolonial eras, with emphasis on profound changes that swept through Vietnamese society during period of extended political and military conflict. P/NP or letter grading.

**M186. Korea and Vietnam: Comparative Modern Histories.** (4) (Same as Korean M186.) Seminar, three hours. Comparative survey of intertwined and parallel histories of Korea and Vietnam, organized chronologically, but structured around key themes that serve as basis for comparison. Modern experiences of colonized Vietnam and Korea have many significant parallels, including imposition of colonial control, transition to modernized societies within context of colonialism, and shared experiences of World War II. Both were also divided after war between communist regimes in north and strongly anticommunist regimes in south. Each also experienced warfare after division and direct involvement of U.S. during height of cold war between 1950s and 1970s. P/NP or letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Graduate Courses

**C255. Topics in Vietnamese Cinema and/or Literature.** (4) Lecture, three hours; discussion, one hour. Knowledge of Vietnamese not required. Critical and historical examination of literary and/or filmic representations connected to social practices such as empire, nation, diaspora, and globalization. Original language course materials available for interested students. May be concurrently scheduled with course C155. S/U or letter grading.

**297B. Topics in Contemporary Vietnamese Culture.** (4) Seminar, three hours. Selected topics in Vietnamese contemporary culture, including diasporic culture, with emphasis on cultural production. Primary materials combined with theoretical readings. S/U or letter grading.

# ATMOSPHERIC AND OCEANIC SCIENCES

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## Faculty Roster

### Professors

Jacob Bortnik, PhD  
Marcelo Chamecki, PhD  
Gang Chen, PhD  
Rong Fu, PhD  
Alexander D. Hall, PhD  
Jasper F. Kok, PhD  
Qinbin Li, PhD  
James C. McWilliams, PhD (*Louis B. Slichter Professor of Geophysics and Planetary Physics*)  
Jonathan L. Mitchell, PhD  
J. David Neelin, PhD  
Suzanne E. Paulson, PhD  
Jochen P. Stutz, PhD  
Tina I. Treude, PhD  
Aradhna K. Tripathi, PhD  
Roger M. Wakimoto, PhD  
Yongkang Xue, PhD

### Professors Emeriti

Robert E. Dickinson, PhD  
Robert G. Fovell, PhD  
Michael Ghil, PhD  
Lawrence R. Lyons, PhD  
Carlos R. Mechoso, PhD  
Richard P. Turco, PhD

### Associate Professors

Daniele Bianchi, PhD  
Ulrike Siebt, PhD  
Andrew L. Stewart, PhD

### Assistant Professors

Robert A. Eagle, PhD  
Karen McKinnon, PhD

Pablo E. Saide Peralta, PhD  
Roger H. Varney, PhD

### Adjunct Professors

Randall R. Friedl, PhD  
Yu Gu, PhD  
Lawrence W. Harding, PhD  
Hui Su, PhD

## Overview

The atmospheric and oceanic sciences present a wide variety of problems of compelling scientific interest and increasing social concern. This is exemplified by efforts to improve air quality, depredations caused by severe storms and floods, attempts to control or modify weather phenomena, problems of long-range weather forecasts, climate change, and predictions, and expanding scientific frontiers into our outer atmosphere and atmospheres of other planets.

The Department of Atmospheric and Oceanic Sciences offers a broad curriculum in dynamic and synoptic meteorology, atmospheric physics and chemistry, and upper atmosphere and space physics.

The Bachelor of Science (BS) degree qualifies students for entry-level technical positions or represents valuable background for training in other professions. Master of Science (MS) and Doctor of Philosophy (PhD) degree holders work in universities, research centers, laboratories, and government services and, increasingly, in the rapidly burgeoning private sector.

## Undergraduate Majors

### Atmospheric and Oceanic Sciences BS

#### Learning Outcomes

The Atmospheric and Oceanic Sciences major has the following learning outcomes:

- Display mastery of basic principles and tools of science: calculus, physics, chemistry, computer programming, and writing
- Display fundamental understanding of atmospheric and oceanic sciences
- Demonstrated analytical and mathematical skills through application of learned concepts and tools to solve theoretical, computational, and empirical problems
- Ability to apply knowledge to independently identify, analyze, and understand real-world problems and issues
- Demonstrated effective oral and written communication of results and conclusions of investigative work

#### Entry to the Major

#### Transfer Students

Transfer applicants to the Atmospheric and Oceanic Sciences major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one year of calculus, one year of calculus-based physics, and one semester of general chemistry.

Recommended before transfer for timely degree completion: one additional semester of general chemistry and one computer programming course (preferably in Python).

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Atmospheric and Oceanic Sciences 51, M71 (preferred) or Program in Computing 10A, 90; Chemistry and Biochemistry 14A and 14B, or 20A and 20B; Life Sciences 30A and 30B, or Mathematics 3A, 3B, and 3C, or 31A, 31B, 32A, 32B, 33A, and 33B; Physics 1A, 1B, and 1C, or 1AH, 1BH, and 1CH, or 5A, 5B, and 5C.

Students interested in pursuing graduate studies in atmospheric and oceanic sciences or obtaining employment with the National Weather Service or other government agencies are strongly urged to select the Mathematics 31A through 33B sequence and the Physics 1 sequence.

### The Major

*Required:* Four courses from Atmospheric and Oceanic Sciences 101, 103, 104, M105, 107, 112, three additional upper-division atmospheric sciences courses selected in consultation with the undergraduate advisers, and two upper-division courses from a list of chemistry, mathematics, physics, and statistics courses selected in consultation with the undergraduate advisers.

## Policies

### The Major

Atmospheric and Oceanic Sciences 199 (independent research) taken for 4 units may be units to satisfy one upper-division elective. Thesis approval required from faculty adviser and submitted to department student affairs officer.

## Atmospheric and Oceanic Sciences/Mathematics BS

### Capstone Major

The Atmospheric and Oceanic Sciences/Mathematics major is a designated capstone major. Students acquire experience in conceiving and executing research projects designed to evaluate hypotheses and complete an individual project or thesis selected with the assistance of the program advisers and faculty mentor. The topic should reflect integrative application of mathematics to atmospheric and oceanic sciences. Students are expected to prepare a significant independent piece of work that applies knowledge gained in their coursework in a new and unique way.

### Learning Outcomes

The Atmospheric and Oceanic Sciences/Mathematics major has the following learning outcomes:

- Fundamental knowledge of the atmospheric and oceanic sciences, and the mathematical tools that enable research to be conducted
- Identification of potential research areas of interest
- Experience in conceiving and executing research projects designed to evaluate hypotheses through courses that stress oral and written presentation of research results
- Proposition, execution, and evaluation of a research project with the assistance and supervision of a faculty mentor
- Tangible capstone product, such as a written thesis, that will be archived and possibly disseminated within and beyond the department

## Entry to the Major

### Transfer Students

Transfer applicants to the Atmospheric and Oceanic Sciences/Mathematics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one and a half years of calculus through multivariable and one year of calculus-based physics.

Recommended before transfer for timely degree completion: linear algebra, differential equations, and one computer programming course (preferably in Python).

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Atmospheric and Oceanic Sciences M71 or Program in Computing 10A, 90, Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Physics 1A, 1B, 1C, and one course selected from Atmospheric and Oceanic Sciences 1, 2, 3, 5, M7, 51. Chemistry and Biochemistry 14A and 14B (or 20A and 20B) may also be required, depending on atmospheric and oceanic sciences upper-division course selection.

### The Major

*Required:* Six mathematics courses, including Mathematics 115A, 131A, 134, and three elective courses selected from 115B, 131B, 135, 136, 142, 151A, 151B, 170A, 170B, one of which must be 115B, 131B, 151B, or 170B; six upper-division atmospheric and oceanic sciences courses, including two core courses selected from Atmospheric and Oceanic Sciences 101, 103, 112, and two elective courses selected from C110, C115, M120, C144, C160, C170, 180, and any two additional upper-division atmospheric and oceanic sciences courses.

One capstone senior projects/thesis course, Atmospheric and Oceanic Sciences 199, taken for 4 units, is also required. An individual project or thesis to be selected with the assistance of the program advisers and a faculty mentor must be completed. Thesis approval required from faculty adviser and submitted to department student affairs officer.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade and must be passed with a grade of C– or better, and students must have a minimum overall grade-point average of 2.0 for the courses.

## Climate Science BS

### Learning Outcomes

The Climate Science major has the following learning outcomes:

- Demonstrated mastery of the basic principles and tools of science
- Demonstrated fundamental understanding of the atmospheric and oceanic sciences
- Demonstrated analytical and mathematical skills through the application of learned concepts and tools in solving relevant theoretical, computational, and empirical problems
- Ability to apply knowledge gained to independently identify, analyze, and understand real-world problems and issues
- Demonstrated effective oral and written communication of results and conclusions
- Understanding of the societal and policy context of climate science

## Entry to the Major

### Transfer Students

Transfer applicants to the Climate Science major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one year of calculus, one semester of calculus-based physics, one general chemistry course, and one introductory statistics course.

Recommended before transfer for timely degree completion: one additional semester of calculus-based physics, and one computer programming course (preferably in Python).

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Atmospheric and Oceanic Sciences 51, M71 or Program in Computing 10A; Chemistry and Biochemistry 14A and 14B, or 20A and 20B; Life Sciences 30A and 30B, or Mathematics 3A, 3B, and 3C, or 31A, 31B, 32A, and 33B; Physics 1A, 1B, and 1C, 1AH, 1BH, and 1CH, or 5A, 5B, and 5C; Statistics 10, 12, or 13.

Students interested in pursuing graduate studies in climate sciences or other branches of science are encouraged to select the Mathematics 31A through 33B sequence and the Physics 1 sequence.

### The Major

*Required:* Atmospheric and Oceanic Sciences 101, M105, C110, 112, 121, 123, 145, and two upper-division policy/solutions or quantitative courses from a preapproved list.

## Policies

### The Major

Atmospheric and Oceanic Sciences 199 (independent research) taken for 4 units may be used to satisfy one upper-division elective. Thesis approval required from faculty adviser and submitted to department student affairs officer.

Upper-division electives may also be selected in consultation with the undergraduate advisers.

Students preparing for graduate studies in climate science or other areas should discuss specific requirements with the undergraduate advisers.

## Undergraduate Minor

### Atmospheric and Oceanic Sciences Minor

The Atmospheric and Oceanic Sciences minor provides a formal vehicle for students specializing in other science fields to pursue interests in the atmospheric and oceanic environment. It is designed to be flexible, recognizing that many topics in this field cross traditional disciplinary boundaries.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and must make an appointment with a departmental undergraduate adviser for approval in selecting a coordinated program of courses from within the department and related disciplines. For more information, contact the department at 310-825-1954.

## The Minor

*Required Courses (28 units):* Seven 4-unit courses, including (1) four from Atmospheric and Oceanic Sciences M100, 101, 102, 103, 104, M105, M106, 107, C110, C111, 112, CM114A, C115, M120, 121, 123, 130, 135, 141, C144, 145, 150, C160, C170, 180, 199, and (2) three additional courses, two of which must be upper-division, from any of the above atmospheric and oceanic sciences courses beyond the minimum four required or from Atmospheric and Oceanic Sciences 1, 2, 3, 51, 90, 186 (must be taken twice), Chemistry and Biochemistry 103, 110A, 110B, 113A, C113B, 114, Earth, Planetary, and Space Sciences 15, Ecology and Evolutionary Biology 109, C119A, 122, 123A or 123B, 147, 148, Mathematics 115A, 115B, 132, 135, 136, 146, 170A, 170B, Physics 110A, 110B, 112, M122, 131, 132. Other relevant courses from related disciplines may be substituted with prior approval of the department. At least five courses approved for the minor must be upper division.

Groups of courses relevant to specific subareas of atmospheric sciences include (1) *atmospheric chemistry*: Atmospheric and Oceanic Sciences 104, Chemistry and Biochemistry 103, 110A, 110B, C113B, 114; (2) *atmospheric chemistry and biology*: Atmospheric and Oce-



anic Sciences 101, 104, Ecology and Evolutionary Biology 109, C119A, 122; (3) *atmospheric dynamics*: Atmospheric and Oceanic Sciences 101, 102, Physics 112, 131, 132; (4) *atmospheric dynamics and mathematical modeling*: Atmospheric and Oceanic Sciences 101, 180, Mathematics 115A, 115B, 132, 135, 136, 142, 146; (5) *oceanography and biology*: Atmospheric and Oceanic Sciences 101, 103, 104, Ecology and Evolutionary Biology 109, 123A or 123B, 147, 148; (6) *upper atmosphere*: Atmospheric and Oceanic Sciences 101, M120, C170, Physics 110A, 110B, M122.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

One course may be taken on a Passed/Not Passed basis; each of the other minor courses must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Atmospheric and Oceanic Sciences MS, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Atmospheric and Oceanic Sciences

### Lower-Division Courses

**1. Climate Change: From Puzzles to Policy. (4)** Lecture, three hours; discussion, one hour. Overview of fundamentals of Earth's climate, including greenhouse effect, water and chemical cycles, outstanding features of atmospheric and ocean circulation, and feedback between different system components. Exciting and contentious scientific puzzles of climate system, including causes of ice ages, greenhouse warming, and el niño. Importance of climate science and prediction to society, with emphasis on science's role in identifying, qualifying, and solving environmental problems such as ozone hole and greenhouse warming. P/NP or letter grading.

**1L. Climate Change: From Puzzles to Policy—Laboratory. (1)** Laboratory, one hour. Enforced corequisite: course 1. Investigations and demonstrations supporting material in course 1, including greenhouse effect, atmosphere and ocean circulation, past, present, and future climates, and role of science in climate change politics. P/NP or letter grading.

**2. Air Pollution. (4)** Lecture, three hours; discussion, one hour. Causes and effects of high concentrations of pollution in atmosphere. Topics include nature and sources of gaseous and particulate pollutants, their transport, dispersion, modification, and removal, with emphasis on atmospheric processes on scales

ranging from individual sources to global effects; interaction with biosphere and oceans; stratospheric pollution. P/NP or letter grading.

**2L. Air Pollution Laboratory. (1)** Laboratory, one hour. Enforced corequisite: course 2. Investigations and demonstrations supporting material in course 2, including box model simulation, dose responses, air parcel motion and pollution dispersion, daily and seasonal variation of smog pollutants, and smog transport. P/NP or letter grading.

**3. Meteorology and Extreme Weather. (4)** Lecture, three hours; discussion, one hour. Nature and causes of weather phenomena, including atmospheric global circulation, clouds and storms, lightning and precipitation, fronts and cyclones, and tornadoes and hurricanes. P/NP or letter grading.

**3L. Meteorology and Extreme Weather Laboratory. (1)** Laboratory, one hour. Enforced corequisite: course 3. Investigations and data analysis supporting material in course 3, including interpretation of meteorological data, use of modern visualization tools to understand weather, and critical analysis of historical hurricane data. P/NP or letter grading.

**5. Climates of Other Worlds. (4)** Lecture, three hours; discussion, one hour. Introduction to atmospheres of planets and their satellites in solar system using information obtained during recent planetary exploration program. Elementary description of origin and evolution of atmospheres on planets. Climates on planets, conditions necessary for evolution of life, and its resulting effect on planetary environment. P/NP or letter grading.

**M7. Perils of Space: Introduction to Space Weather. (4)** (Same as Earth, Planetary, and Space Sciences M7.) Lecture, four hours. Concepts of plasma physics. Dynamic sun, solar wind, and Earth's magnetosphere and ionosphere. Space storms and substorms and their impacts on astronauts, spacecraft, and surface power and communication grids. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**51. Fundamentals of Climate Science. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 3B or 32A, Physics 1B or 5B or 5C or 6B, with grades of C or better. Development of fundamental understanding of climate science. Topics include global energy balance, atmospheric radiation and greenhouse effect, surface and boundary layer dynamics, atmospheric and oceanic circulation, global hydrologic cycle, modes of climate sensitivity, climate modeling, and climate change. P/NP or letter grading.

**M71. Introduction to Computing for Geoscientists. (4)** (Same as Earth, Planetary, and Space Sciences M71.) Lecture, three hours; laboratory, 90 minutes; outside computing study, six to 10 hours. Introduction to writing programs, visualization of geoscience data, and comparison with models. P/NP or letter grading.

**88. Lower-Division Seminar. (4)** Seminar, three hours. Variable topics; consult Schedule of Classes or department for topics to be offered in specific term. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Introduction to Undergraduate Research in Atmospheric and Oceanic Sciences. (4)** Lecture, two hours; laboratory, two hours. Requisites: course M71 (or Program in Computing 10A); Life Sciences 30A and 30B, or Mathematics 3A and 3B, or 31A and 31B. Students gain basic ability to understand, conduct, and communicate scientific research in atmospheric and oceanic sciences. Univariate and bivariate statistical data analysis, scientific computer programming, basics of scientific process, finding and reading scientific literature, basic experimental techniques, Earth system data analysis and visualization, and communication of scientific findings in oral and written form. Skills taught in context of projects from atmospheric and oceanic sciences. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M100. Earth and Its Environment. (4)** (Same as Environment M111.) Lecture, three hours. Overview of Earth as system of distinct, yet intimately related, physical and biological elements. Origins and characteristics of atmosphere, oceans, and land masses. Survey of history of Earth and of life on Earth, particularly in relation to evolution of physical world. Consideration of possibility of technological solutions to global environmental problems using knowledge gained during course. Letter grading.

**101. Fundamentals of Atmospheric Dynamics and Thermodynamics. (5)** Lecture, four hours; discussion, one hour. Requisites: Mathematics 3B or 31B or Life Sciences 30B, Physics 1B or 5B or 5C or 6B. Introduction to thermodynamics (flows of heat, energy, and work) and dynamics (winds) of atmosphere. Topics covered include hydrostatic balance, first law of thermodynamics, dry and moist adiabatic processes, atmospheric stability, and fundamental equations of motion of atmosphere, with applications to geostrophic, gradient, and thermal winds. Letter grading.

**102. Climate Change and Climate Modeling. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: Mathematics 3C or 32A, Physics 1B or 6C, with grades of C or better. Global environmental issues in climate change due to human activities or natural climate variations. Quantitative introduction to new science of climate modeling to understand and predict these changes. Physical processes in climate system. Atmospheric and oceanic circulation. El niño and year-to-year climate prediction. Greenhouse effect and global warming. P/NP or letter grading.

**103. Physical Oceanography. (4)** Lecture, three hours; discussion, one hour. Requisite: Mathematics 3B or 31B. Introductory course for physical sciences, life sciences, or engineering majors interested in environmental issues. Observations of temperature, salinity, density, and currents. Methods. Wind-driven and geostrophic currents. California Current and Gulf Stream. Internal waves. Surface waves and tides. Air/sea interactions. Coastal upwelling. Biological/physical interactions. El niño. Role of ocean in climate and global change. Santa Monica Bay field trip. Letter grading.

**104. Fundamentals of Air and Water Pollution. (4)** Lecture, three hours; discussion, one hour. Requisite: Chemistry 14B or 20B. Chemistry and physics of air and water pollution, including photochemistry, acid rain, air pollution meteorology and dispersion, groundwater and surface water pollution, chemical cycling, air/water interface, global atmospheric change. Letter grading.

**M105. Introduction to Chemical Oceanography. (4)** (Same as Ecology and Evolutionary Biology M139.) Lecture, three hours; discussion, one hour. Introductory course for physical sciences, life sciences, and engineering majors interested in oceanic environment. Chemical composition of oceans and nature of physical, chemical, and biological processes governing this composition in past and present. Cycles of major and

minor oceanic constituents, with focus on those that are most important for life (i.e., carbon, nitrogen, phosphorus, silicon, and oxygen). Investigation of primary production, export production, remineralization, diagenesis, air-sea gas exchange processes. Letter grading.

**M106. Applied Climatology: Principles of Climate Impact on Natural Environment. (4)** (Same as Geography M118.) Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Exploration of knowledge and tools to solve complex problems in contemporary applied climatology, including current practices, influence of climate on environment, and human influence on changing climates. P/NP or letter grading.

**107. Biological Oceanography. (4)** Lecture, three hours; discussion, one hour. Introductory course for physical sciences, life sciences, and engineering majors interested in oceanic environment. Review of how biological processes are intrinsically tied to physical and chemical processes in oceans. Examination of processes that control distribution, abundance, and production of marine organisms and their spatial and temporal variability. Letter grading.

**C110. Advanced Dynamic and Synoptic Meteorology. (4)** Lecture, three and one half hours. Requisite: course 101. Weather map analysis, thermodynamic diagrams, satellite interpretation, severe weather forecasting, isentropic analysis, frontogenesis, quasi-geostrophic omega equation. Concurrently scheduled with course C227. P/NP or letter grading.

**C110L. Advanced Dynamic and Synoptic Meteorology Laboratory. (2)** Laboratory, two hours. Comprehensive weather forecasting exercises and map discussions led by meteorologist. Concurrently scheduled with course C227L. P/NP or letter grading.

**C111. Introduction to Machine Learning for Physical Sciences. (4)** Lecture, 90 minutes; laboratory, 90 minutes. Designed for physical sciences students. Practical, hands-on introduction to seven of most popular algorithms of machine learning (ML). Students gain most practical skills to start working in industry or research immediately, using popular Python programming language, together with SciKitLearn ML library, and covering essential theory to understand what algorithms do. Focus on solving typical problems that arise in physical sciences. Covers algorithms in broad areas of ML, including supervised learning (regression and classification) and unsupervised learning (clustering and dimensionality reduction). Lectures and programming exercises. Concurrently scheduled with course C204. P/NP or letter grading.

**112. Climate Change Assessment. (4)** Lecture, three hours; discussion, one hour. Requisite: one course from Life Sciences 30B, 40, Mathematics 3B, 31B, Statistics 10, 12, or 13. Recommended prerequisite: one course from 51, 101, 102, 103, 104, 105, M106, 107, Environment 175, or equivalent background for reading quantitative scientific literature in climate change. Projections of future anthropogenic climate change and understanding of natural climate variability depend on international climate model inter-comparison projects, on large observing systems coordinating space and ground observations, and on multi-scientist climate assessments. Lectures, readings and projects with presentations address current issues in the scientific literature on assessment of climate change for students with prior background in the atmospheric, oceanic and environmental sciences. P/NP or letter grading.

**CM114A. Aquatic Geomicrobiology: Metabolisms. (4)** (Formerly numbered CM114.) (Same as Earth, Planetary, and Space Sciences CM114A.) Lecture, three hours. Recommended prerequisite: course M105 or Earth, Planetary, and Space Sciences C107. Study of fundamental geomicrobiological metabolisms and biogeochemical reactions occurring in aquatic systems and how these processes interact with environment. Metabolisms include photoautotrophic (anoxygenic and oxygenic photosynthesis), chemoheterotrophic (fermentation and respiration of organic matter), photoheterotrophic (organic matter degradation with light), and chemoautotrophic (iron, nitrogen, manganese, methane, and sulfur oxidation) pathways. Introduction of principals of bioenergetics (adenosine tri-

phosphate production, Gibbs free energy, chemiosmosis, thermodynamic calculations) and biological isotope fractionation. Concurrently scheduled with course CM237A. P/NP or letter grading.

**CM114B. Aquatic Geomicrobiology: Environments. (4)** (Same as Earth, Planetary, and Space Sciences CM114B.) Lecture, three hours. Recommended prerequisite: course CM114A. Broad overview of aquatic geomicrobiological processes in diverse environmental settings (e.g., sediments, microbial mats, water column, wetlands, cold seeps, hydrothermal vents, deep biosphere), and how these processes drive element cycling on Earth. Concurrently scheduled with course CM237B. P/NP or letter grading.

**C115. Mesometeorology. (4)** Lecture, three hours. Requisite: course 101. Observations of phenomena with length scales ranging from 20 km to 2,000 km. Topics include polar lows, airmass thunderstorms, multicell storms, supercell tornadoes, gust fronts, downbursts, microbursts, and dry line. Discussions on design of field project. Concurrently scheduled with course C228. P/NP or letter grading.

**M120. Introduction to Fluid Dynamics. (4)** (Same as Earth, Planetary, and Space Sciences M140.) Lecture, three hours; discussion, one hour. Corequisite: Physics 131. Fluid statics and thermodynamics. Kinematics. Conservation laws and equations of fluid motion. Circulation theorems and vorticity dynamics. Rotating frame. Irrotational flow. Letter grading.

**121. Climate Mitigation Solutions. (4)** Lecture, three hours; discussion, one hour. Requisite: one course from course 1, 2, 3, 51, M100, 102, or 112. Critical survey of potential strategies to address climate change, including solutions in infrastructure, transportation, energy, waste, and agricultural sectors, as well as geoeengineering. Exploration of roles of communication, equity, religion, social change, and education in mitigating climate change. P/NP or letter grading.

**123. Climate Adaptation Solutions. (4)** Lecture, three hours; discussion, one hour. Recommended prerequisites: courses 1, 51, Environment 10. Development of fundamental understanding of climate change adaptation challenges facing humanity. Such challenges stem from changes in physical climate system, such as warming and increases in heat extremes, loss of snow and ice, sea level rise, increases in extreme precipitation, deepening drought, increases in wildfire, deteriorating air quality, changes in ocean circulation, and ocean acidification. Examination of all these challenges, as well as associated stresses on human and natural systems. Examination of these issues from local, regional, and global perspectives, emphasizing intersections with other deep sustainability challenges. P/NP or letter grading.

**130. California's Ocean. (4)** Lecture, four hours. Recommended prerequisite: course 103 or M105. Circulation, biogeochemistry, biota, water quality, measurement techniques, computational modeling, conservation, and management for California's coastal ocean, including coastal measurement cruise and term project (paper and presentation). Letter grading.

**135. Ocean Change in the Anthropocene. (4)** Lecture, 90 minutes; laboratory, 90 minutes. Requisites: courses 103, 105. Review of main impacts of human activities on ocean, from warming and acidification to overfishing, pollution, and exploitation of marine resources. Discussion of concepts of governance and sustainability. Introduction to global ocean datasets and IPCC-class model output. Student-led presentation to review significant papers from scientific literature. Letter grading.

**141. Introduction to Atmospheric Chemistry and Air Pollution. (4)** Lecture, three hours; discussion, one hour. Requisites: Chemistry 14B or 20B, Mathematics 3A or 31A, Physics 1B or 6B. Physical and chemical processes that determine composition of atmosphere and its implications for climate, ecosystems, and human welfare. Origin of atmosphere. Nitrogen, oxygen, carbon, sulfur, trace metal cycles. Climate and greenhouse effect. Atmospheric transport and turbulence. Stratospheric ozone. Oxidizing power of atmosphere. Regional air pollution: aerosols, smog, mercury, and acid rain. Letter grading.

**C144. Atmospheric Boundary Layer. (4)** Lecture, three hours. Enforced prerequisite: course 101 with grade of B+ or better. Atmospheric boundary layer is lowest portion of atmosphere, representing interface between Earth's surface and atmosphere, is strongly affected by turbulence, and plays important role in exchange of heat, momentum, trace gases, and aerosols between Earth's surface and free troposphere. Investigation of properties of atmospheric boundary layer and processes that determine them. Concurrently scheduled with course C222. P/NP or letter grading.

**145. Atmospheric Physics: Radiation, Clouds, and Aerosols. (4)** Lecture, three hours; discussion, one hour. Requisites: Physics 1A, 1B, and 1C, or 6A, 6B, and 6C. Theory and application of atmospheric radiation, aerosol, and cloud processes. Topics include radiative transport, cloud and rain formation, aerosol properties, impact of aerosol and clouds on climate. Letter grading.

**150. Atmospheric and Oceanic Sciences Laboratory. (5)** Lecture, one hour; laboratory, six hours. Requisites: Mathematics 3B or 31B, Physics 1B and 1C (or 5B and 5C). Many of today's environmental problems, such as stratospheric ozone hole, current rise of greenhouse gas concentrations, and various severe weather phenomena, were first discovered and investigated using accurate observational techniques. Direct experimental observations remain crucial component in today's efforts to better understand weather, climate, and pollution of atmosphere and ocean. Introduction to experimental/observational approach in atmospheric and oceanic sciences. Students work in small groups to gain hands-on experience in setup, performance, analysis, and reporting of different experiments. Introduction to underlying principles of these experimental methods and basic data analysis tools. P/NP or letter grading.

**155. Introduction to Ecosystem-Atmosphere Interactions. (4)** Lecture, three hours; discussion, one hour. Exchanges of energy, moisture, atmospheric trace gases, and momentum between terrestrial ecosystems and atmosphere. Interactions and feedbacks between physical environment and physiological status of plants and soils. Topics include canopy structure and function, leaf energy balance, and carbon and water fluxes between plants, soils, and atmosphere. Letter grading.

**C160. Remote Sensing of Atmosphere and Oceans. (4)** Lecture, three hours. Requisite: Physics 1C or 5B. Theory and techniques of remote sensing; atmospheric spectroscopy, scattering, and polarization; passive and active techniques; relevant satellite systems; inversion methods; remote sensing of clouds, aerosols, temperature, precipitation, and trace constituents; remote sensing of oceans and biosphere. Concurrently scheduled with course C240B. P/NP or letter grading.

**C170. Introduction to Solar System Plasmas. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 33A, Physics 1C. Introduction to basic plasma physical processes occurring in sun, solar wind, magnetospheres, and ionospheres of planets, using simple fluid (magnetohydrodynamic) models as well as individual particle (radiation belt dynamics) approach. Solar-planetary coupling processes, geomagnetic phenomena, aurora. Concurrently scheduled with course C205A. Letter grading.

**M171. Advanced Computing in Geosciences. (4)** (Same as Earth, Planetary, and Space Sciences M171.) Lecture, four hours. Enforced prerequisites: course M71, Mathematics 3A, 3B, and 3C (or 31A and 31B). Use of high level computing language to program microcontrollers to acquire laboratory-style experimental data. Misfit modeling and quantitative comparisons of acquired data sets and theory. Forward modeling from fundamental equations. Examples, experiments, and exercises from disciplines within geosciences. P/NP or letter grading.

**180. Numerical Methods in Atmospheric Sciences. (4)** Lecture, three hours; discussion, one hour. Preparation: one course in programming (C/C++, Fortran, MATLAB, or Python). Requisite: Mathematics 33B. Introduction to numerical methods employed in atmospheric and oceanic sciences: theory, application,



programming, and visualization tools. Students build their own numerical model of atmospheric/oceanic circulation. Term project. Letter grading.

**181. Analysis and Prediction of Weather Systems. (3)** Laboratory, three hours. Requisite: course C110. Limited to junior/senior Atmospheric and Oceanic Sciences majors. Introduction to collection, display, and application of weather observations and numerical forecasts used by operational meteorologists. Includes daily weather map discussions, and analysis and interpretation of numerical weather prediction model outputs. Letter grading.

**C182. Data Analysis in Atmospheric and Oceanic Sciences. (4)** Lecture, three hours; laboratory, one hour. Enforced requisite: one course from 101 through M105. Recommended: one probability course. Overview of data analytic methods in common use in atmospheric and oceanic research. Linear models, principal component analysis (empirical orthogonal function), time-series analysis, and clustering methods. Model validation and evaluation, significance tests, error analysis, bias detection. Emphasis on practical applications, with specific examples from atmospheric and oceanic sciences. Concurrently scheduled with course C260. P/NP or letter grading.

**186. Operational Meteorology. (2)** Laboratory, six hours. Requisite: course C110. Limited to junior/senior Atmospheric, Oceanic, and Environmental Sciences majors. Daily contact with weather data and forecasting, satellite and radar data. Introduction to weather forecasting for aviation, air pollution, marine weather, fire weather, and public use. Includes daily weather map discussions and visits to observing, radiosonde, and radar installations. Letter grading.

**M187. Careers in Earth System, Environment, and Space Sciences. (1)** (Same as Earth, Planetary, and Space Sciences M187 and Environment M187.) Seminar, one hour. Examination of central role of science in understanding and addressing grand challenges in climate, earth and environment, and space exploration through seminars given by scientists, engineers, managers, and entrepreneurs from national laboratories and industry. Includes tour of National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL). Students engage speakers on science, career preparation, opportunities for undergraduate internships, and building fulfilling careers. P/NP grading.

**188. Special Topics in Atmospheric and Oceanic Sciences. (4)** Lecture, three hours; discussion, one hour. Departmentally-sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Atmospheric and Oceanic Sciences. (2)** Seminar, two hours. Preparation: basic knowledge of meteorology (equivalent to course 3) and lower-division calculus, chemistry, and physics; course 101 strongly recommended. Limited to departmental majors and minors. Survey of current research projects presented by faculty members and research staff in seminar and/or panel discussion format. May be repeated for credit. P/NP grading.

**M192A. Introduction to Collaborative Learning Theory and Practice. (1)** (Same as Chemistry M192E, Computer Science M192A, Life Sciences M192A, Mathematics M192A, and Physics M192S.) Seminar,

one hour. Training seminar for undergraduate students who are selected for learning assistant (LA) program. Exploration of current topics in pedagogy and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. Letter grading.

**192B. Methods and Application of Collaborative Learning Theory in Atmospheric and Oceanic Sciences. (2 to 4)** Seminar, two hours; clinic, four hours. Requisites: Life Sciences M192A (may be taken concurrently) and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. Letter grading.

**197. Individual Studies in Atmospheric and Oceanic Sciences. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Atmospheric and Oceanic Sciences. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors and required for Mathematics/Atmospheric and Oceanic Sciences majors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Introduction to Atmospheric and Oceanic Fluid. (4)** Lecture, three hours; discussion, one hour. Recommended requisite: Physics 131. Thermodynamics of two component (moist/salty) fluids. Thermodynamic diagrams and stability. Saturation and moist processes. Hydrostatics. Equations of fluid motion in rotating coordinate systems. Scales of motion and dominant balances: geostrophic, gradient, and thermal wind. Circulation and vorticity. Boundary layers and turbulence. Elementary waves. S/U or letter grading.

**200B. Introduction to Dynamics of Earth System. (4)** Lecture, three hours. Overview of processes that determine dynamics of Earth system and contribute to its change including global and meridional energy balance; radiative-convective equilibrium; surface processes; planetary boundary layers; global atmospheric circulation; hydrological cycle; global ocean circulation; El Niño—Southern Oscillation and other climate variability modes; paleoclimate; climate sensitivity; climate variability and change; Earth's carbon cycle (atmosphere, ocean, land), and space physics. S/U or letter grading.

**200C. Introduction to Atmospheric and Oceanic Radiation, Physics, and Chemistry. (4)** Lecture, three hours; discussion, one hour. Propagation and budget of radiation in atmosphere and ocean; absorption and scattering of sunlight; emission and absorption of infrared radiation; radiative transfer equation; remote sensing; characteristics of particles in atmosphere and ocean; principles of particle and cloud drop formation; condensation and coagulation; impact of aerosol on climate; chemistry of atmosphere and ocean; ozone hole; principles of air and water pollution; impact of chemistry on health. S/U or letter grading.

**200D. Scientific Communication for Atmospheric and Oceanic Scientists. (4)** Lecture, three hours; discussion, one hour. Basics of scientific communication. How to efficiently survey literature and read scientific papers. Philosophy of scientific writing. Writing literature review, identifying and articulating gap in scientific literature, writing effective introduction that places scientific question in broader context, and crafting proposal. How to give effective presentation. S/U or letter grading.

**201A. Geophysical Fluid Dynamics I. (4)** Lecture, three hours. Fundamental equations of motion. Atmospheric and oceanic approximations. Rotating reference frame. Density stratification. Geostrophic adjustment and balance. Potential vorticity conservation. Vortex dynamics. Acoustic, gravity, inertial, Rossby, and Kelvin waves. Barotropic and baroclinic instability. Ekman boundary layers. Oceanic wind gyres: Sverdrup balance and western boundary currents. Letter grading.

**201B. Geophysical Fluid Dynamics II. (4)** Lecture, three hours. Enforced requisite: course 201A. Anelastic approximation. Small-scale gravity waves in atmosphere. Critical levels. Kelvin/Helmholtz instability. Quasi-static oscillations of planetary atmosphere. Equatorial Kelvin and mixed Rossby-gravity (Yanai) waves. Baroclinic and barotropic instabilities in continuously stratified system. General circulation of atmosphere. Jet streams, eddies, storm tracks. Propagation of planetary waves. Wave-mean flow interactions. Noninteraction theorems. Letter grading.

**201C. Atmospheric and Oceanic Turbulence. (4)** Lecture, three hours. Requisite: course 200A. Recommended: course 201A. Turbulent flows that occur on relatively small scales (<~10 km) in both atmosphere and ocean. Classical homogeneous, shear, convective, and boundary-layer turbulence and its geophysical modification due to stratification, Earth's rotation, and water phase changes. S/U or letter grading.

**202. Introduction to Ocean Science. (4)** Lecture, three hours. Fundamentals of ocean physics, chemistry, and biology. Equations of motion, dynamical balances, conservation laws. Ocean circulation and material transport from small-scale eddies and waves to global circulation of thermocline and deep ocean; influences on ecosystem processes, biogeographic provinces, and chemical cycles; implications for global heat transport, sea ice, and climate. S/U or letter grading.

**M203A. Introduction to Atmospheric Chemistry. (4)** (Same as Civil Engineering M262A.) Lecture, three hours. Requisite for undergraduates: Chemistry 20B. Principles of chemical kinetics, thermochemistry, spectroscopy, and photochemistry; chemical composition and history of Earth's atmosphere; biogeochemical cycles of key atmospheric constituents; basic photochemistry of troposphere and stratosphere, upper atmosphere chemical processes; air pollution; chemistry and climate. S/U or letter grading.

**203B. Introduction to Atmospheric Physics. (4)** Lecture, three hours; discussion, one hour. Principles of radiative transfer; absorption, emission, and scattering of solar and infrared radiation; radiation budget consideration; aerosols in atmosphere; principles of water droplet and ice crystal formation; diffusion and accretion; precipitation processes; radiative forcings of clouds/aerosols and climate feedback. S/U or letter grading.

**C204. Introduction to Machine Learning for Physical Sciences. (4)** Lecture, 90 minutes; laboratory, 90 minutes. Designed for physical sciences students. Practical, hands-on introduction to seven of most popular algorithms of machine learning (ML). Students gain most practical skills to start working in industry or research immediately, using popular Python programming language, together with SciKitLearn ML library, and covering essential theory to understand what algorithms do. Focus on solving typical problems that arise in physical sciences. Covers algorithms in broad areas of ML, including supervised learning (regression and classification) and unsupervised learning (clustering and dimensionality reduction). Lectures and programming exercises. Concurrently scheduled with course C111. S/U or letter grading.

**C205A. Introduction to Solar System Plasmas. (4)** Lecture, three hours; discussion, one hour. Introduction to basic plasma physical processes occurring in sun, solar wind, magnetospheres, and ionospheres of planets, using simple fluid (magnetohydrodynamic) models as well as individual particle (radiation belt dynamics) approach. Solar-planetary coupling processes, geomagnetic phenomena, aurora. Concurrently scheduled with course C170. S/U (for majors with consent of instructor after successful completion

of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**205B. Introduction to Solar-Terrestrial Physics. (4)** Lecture, three hours; discussion, one hour. Solar, interplanetary, magnetospheric, ionospheric, auroral, geomagnetic phenomenological and theoretical background for studies in space physics. Contextual understanding and literacy in space physics terminology provided. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**205C. Planetary Upper Atmospheres. (4)** Lecture, three hours; discussion, one hour. Aeronomy of upper atmospheres of Earth and other planets and some of their satellites—thermospheric structure and morphology, circulations, and disturbances; ionospheres as collisional and magnetized (unmagnetized) plasmas: currents, drifts, and instabilities. Examples of upper atmospheric interaction with lower atmosphere and magnetosphere. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**M206. Introduction to Biophysical Modeling of Land Surface Processes and Land/Atmosphere Interactions. (4)** (Same as Geography M206.) Lecture, two hours; laboratory, one hour; reading period, one hour. Designed for graduate students. Presentation of introductory knowledge for graduate students to understand nature, principles, and scope of biophysical modeling of land surface processes, including ideal canopy model, radiation, heat and CO<sub>2</sub> fluxes transfer, and satellite data application. Laboratory sessions included. S/U or letter grading.

**209. Climate Change Assessment. (4)** Lecture, three hours; discussion, one hour. Corequisites: graduate atmospheric, oceanic, hydrological, or climate science courses. Lectures, readings, and projects on current issues in projections of future anthropogenic climate change; design and use of resources from Coupled Model Intercomparison Projects (CMIPs), topics from large multiscientist climate assessments, including Intergovernmental Panel on Climate Change (IPCC). Issues in modeling current climate, including natural climate variability, paleoclimate, and global change under standardized scenarios for future anthropogenic greenhouse gases and aerosols. May be repeated for credit. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

## Dynamic and Synoptic Meteorology

**M210. Planetary Atmospheres and Climates. (4)** (Same as Earth, Planetary, and Space Sciences M229.) Lecture, three hours. Enforced requisite: Physics 1C. Planetary atmospheric structure and composition, radiative transfer, and climate dynamics. Topics include origin and evolution of atmospheres, paleoclimate of Earth and Mars, atmospheric thermodynamics, plane-parallel radiative transfer, climate dynamics, climate forcings/feedbacks, bifurcation, and climate hysteresis. S/U or letter grading.

**211. Planetary Wave Dynamics and Teleconnections in Atmosphere/Ocean. (4)** Lecture, three hours. Requisite: course 201B. Dynamics of stationary and low-frequency waves in Earth's atmosphere and ocean with applications to remote impacts of climate variability. Propagation of barotropic and baroclinic Rossby waves in spatially varying flow. Interactions with storm tracks and mean flow. Teleconnection patterns. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**212A. Numerical Methods in Geophysical Fluid Dynamics. (4)** Lecture, three hours. Requisite or corequisite: course 201A. Basic numerical methods for initial-boundary value problems in fluid dynamics, with emphasis on applications to atmospheric and oceanographic problems. Finite-difference methods and trun-

cation error. Linear and nonlinear computational instability. Computational modes and computational boundary conditions. Nonlinear shallow-water equation model. Spectral methods. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**212B. Numerical Modeling of Atmosphere I. (4)** Lecture, three hours. Requisites: courses 201B, 212A. Dynamics of numerical weather prediction and climate models and their computational design. Basic governing equations. Vertical and horizontal coordinates. Quasi-geostrophic and balanced models. Shallow-water equation model. Three-dimensional primitive equation models. Limited-area modeling. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**212C. Numerical Modeling of Atmosphere II. (4)** Lecture, three hours. Requisite: course 201C. Formulation of physical processes in numerical weather prediction and climate models. Planetary boundary layer processes. Turbulence closure models. Condensation processes. Parameterization of moist-convective processes. Cloudiness parameterization. Parameterization of gravity wave drag. S/U grading.

**213. Global Circulation of Atmosphere. (4)** Lecture, three hours; discussion, one hour. Requisite: course 200B. Global atmospheric circulation and its variability in changing climate. Topics include theory of Rossby waves and application to global circulation of atmosphere, dynamics of Hadley cell and monsoon circulations, wave-mean interaction and application to jets/storm tracks, energetics of eddies and available potential energy in atmosphere, and coupling among circulation, moisture, and clouds. S/U or letter grading.

**214. Theoretical Climatic Dynamics. (4)** Lecture, three hours. Radiative transfer and energy-balance models (EBMs). Multiple equilibrium climates and their stability. Coupled EBMs of atmosphere and oceans. Climatic history of our planet. Continuum mechanics of ice sheets and mantle. Oscillatory models of Quaternary glaciation cycles. Transitions from equilibrium to periodic and aperiodic climate behavior. Climatic predictability. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**215. Ocean Circulation. (4)** Lecture, three hours. Requisites: courses 200A, 202. Phenomena, theory, and modeling of ocean circulations with global to regional scope. Circulation types include thermohaline and wind-driven currents. Examination of relationships between ocean circulations and smaller-scale motions, atmospheric climate, and biogeochemical transport. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**216A. Tropical Motions with Moist Processes. (4)** Lecture, three hours. Requisite: course 201C. Cumulus convection and the boundary layer in tropics. Cloud clusters and mesoscale convection systems. Interaction of cumulus convection with large-scale environment. Tropical cyclones. Monsoon meteorology. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**216B. Wave Motions in Tropical Atmosphere. (4)** Lecture, three hours. Requisite: course 201B. Basic theory of equatorially trapped waves. Observations of tropical wave disturbances. Generation mechanisms of tropical waves. Tropical 30–50 day oscillation. Quasi-biennial and semiannual oscillations. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**217. Regional Climate Dynamics. (4)** Lecture, three hours; discussion, one hour. Global distribution of climate regimes with spatial scales smaller than 100 km. Mechanisms maintaining regional climate variation

against larger-scale atmospheric and climate gradients. Regional climate/ecosystem/human system interactions. S/U or letter grading.

**218. Dynamics of Atmosphere/Ocean System. (4)** Lecture, three hours. Transfer of properties between atmosphere and ocean; wind-driven ocean currents; coastal upwelling. Air/sea interactions. Effects of oceans on climate. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**219. Statistical Analysis and Visual Explanation of Large Climate Data. (4)** Lecture, three hours; discussion, one hour. Introduction to statistical methods to analyze climate data and principles of visual presentation of quantitative information. Review of basic statistical concepts. Principles of visual display of quantitative information. Parametric and non-parametric tests for auto-correlated and non-stationary data, multiplicity, and field significance. Spatial-tempo pattern analyses including cross-spectral analysis, spatio-temporal spectral analysis, empirical orthogonal function (EOF) and extension of EOFs (complex EOF, multivariate EOF, extended EOF). Spatial-temporal canonical correlation analysis (CCA), time-lagged CCA, maximum correlation analysis (or singular value decomposition). Self-organizing map. S/U or letter grading.

**C222. Atmospheric Boundary Layer. (4)** Lecture, three hours. Atmospheric boundary layer is lowest portion of atmosphere, representing interface between Earth's surface and atmosphere, is strongly affected by turbulence, and plays important role in exchange of heat, momentum, trace gases, and aerosols between Earth's surface and free troposphere. Investigation of properties of atmospheric boundary layer and processes that determine them. Concurrently scheduled with course C144. S/U or letter grading.

**224A. Atmospheric Turbulence. (4)** Lecture, three hours. Kinematics of homogeneous and shear flow turbulence. Surface and planetary boundary layers, including heat transfer and turbulent convection. Survey of field and laboratory observations and their interpretation by theory. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**M224B. Atmospheric Diffusion and Air Pollution. (4)** (Same as Civil Engineering M262B.) Lecture, three hours. Nature and sources of atmospheric pollution; diffusion from point, line, and area sources; pollution dispersion in urban complexes; meteorological factors and air pollution potential; meteorological aspects of air pollution. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**225. Advanced Topics in Aerosol Chemistry and Physics. (4)** Lecture, three hours. Requisites: courses M203A, 203B (may be taken concurrently). Study of advanced aerosol processes, including emission processes, optical properties, secondary organic aerosol formation and heterogeneous chemistry, and methods for aerosol measurements. Each student performs class project looking in detail at one aspect covered. May be repeated for credit. S/U or letter grading.

**C227. Advanced Dynamic and Synoptic Meteorology. (4)** Lecture, three and one half hours. Weather map analysis, thermodynamic diagrams, satellite interpretation, severe weather forecasting, isentropic analysis, frontogenesis, quasi-geostrophic omega equation. Concurrently scheduled with course C110. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**C227L. Advanced Dynamic and Synoptic Meteorology Laboratory. (2)** Laboratory, two hours. Comprehensive weather forecasting exercises and map discussions led by meteorologist. Concurrently scheduled with course C110L. S/U or letter grading.

**C228. Mesometeorology. (4)** Lecture, three hours. Requisite: course 101. Observations of phenomena with length scales ranging from 20 km to 2,000 km.

Topics include polar lows, airmass thunderstorms, multicell storms, supercell tornadoes, gust fronts, downbursts, microbursts, and dry line. Discussions on design of field project. Concurrently scheduled with course C115. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**229. Mesoscale Modeling. (4)** Lecture, three hours. Requisites: courses 201C, C228. Numerical and analytical modeling of convective and mesoscale motions, from shallow heat sources to large complex systems. Model frameworks, assumptions, parameterizations, and solution techniques. Role of modeling efforts in understanding dynamic structure and behavior of systems. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

## Atmospheric Physics and Chemistry

**230A. Atmospheric Chemistry I. (4)** Lecture, three hours. Requisite: course M203A. Photochemistry of troposphere; physical chemistry of surfaces and solutions; precipitation chemistry and acid rain; atmospheric organic chemistry; regional and global biogeochemical cycles; current issues in global change. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**230B. Atmospheric Chemistry II. (4)** Lecture, three hours. Requisite: course M203A. Photochemistry of stratosphere and mesosphere; basic ionospheric processes; stratospheric pollution and ozone layer; physical chemistry of upper atmosphere clouds and aerosols; comparative photochemistry of planetary atmospheres; observational techniques and results. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**232. Chemical Transport Modeling. (4)** Lecture, three hours. Requisites: courses M203A, 230A, 230B. Equations of tracer transport and chemical kinetics modeling in three dimensions; numerical techniques; coupled simulations of gas-phase and aerosol microphysics and chemistry; computational versus observational results; current problems in tracer modeling. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**M235. Ocean Biogeochemical Dynamics and Climate. (4)** (Same as Ecology and Evolutionary Biology M238.) Lecture, three hours. Interaction of ocean biogeochemical cycles with physical climate system. Biogeochemical processes controlling carbon dioxide and oxygen in oceans and atmosphere over timescales from few million years to several years. Anthropogenic perturbation of global carbon cycle and climate. Response of ocean ecosystems to past and future global changes. Use of isotopes to study ocean biogeochemical cycles and climate. Interactions between biogeochemical cycles on land and in ocean. S/U or letter grading.

**236. Terrestrial Biogeochemical Dynamics and Climate. (4)** Lecture, three hours. Corequisites: graduate atmospheric, oceanic, hydrological, and climate science courses. Biogeochemical cycles in terrestrial biosphere. Carbon/water/energy/nutrient dynamics. Observational techniques and results. Interactions of terrestrial biogeochemical cycles with climate system on timescales of seconds to centuries. Use of isotopes to study land biogeochemical cycles and climate. Anthropogenic perturbations of global terrestrial biogeochemical cycles and climate feedbacks. Response of land ecosystems to past and future global changes. S/U or letter grading.

**CM237A. Aquatic Geomicrobiology: Metabolisms. (4)** (Formerly numbered CM237.) (Same as Earth, Planetary, and Space Sciences CM214A.) Lecture, three hours. Recommended requisite: course M105 or

Earth, Planetary, and Space Sciences C107. Study of fundamental geomicrobiological metabolisms and biogeochemical reactions occurring in aquatic systems and how these processes interact with environment. Metabolisms include photoautotrophic (anoxygenic and oxygenic photosynthesis), chemoheterotrophic (fermentation and respiration of organic matter), photoheterotrophic (organic matter degradation with light), and chemoautotrophic (iron, nitrogen, manganese, methane, and sulfur oxidation) pathways. Introduction of principals of bioenergetics (adenosine triphosphate production, Gibbs free energy, chemiosmosis, thermodynamic calculations) and biological isotope fractionation. Concurrently scheduled with course CM114A. S/U or letter grading.

**CM237B. Aquatic Geomicrobiology: Environments. (4)** (Same as Earth, Planetary, and Space Sciences CM214B.) Lecture, three hours. Recommended requisite: course CM237A. Broad overview of aquatic geomicrobiological processes in diverse environmental settings (e.g., sediments, microbial mats, water column, wetlands, cold seeps, hydrothermal vents, deep biosphere), and how these processes drive element cycling on Earth. Concurrently scheduled with course CM114B. S/U or letter grading.

**M238. How to Write and Publish Scientific Papers. (4)** (Formerly numbered 238.) (Same as Earth, Planetary, and Space Sciences M237.) Lecture, three hours. Recommended preparation: planning to prepare or in the process of preparing manuscripts. Introduction to process of scientific manuscript writing and publishing. Offers insights into fun and frustration of manuscript writing, important rules for manuscript structuring and scientific language, and advice on how to deal with review process. Students gain familiarity with general principles of successful publishing process. Addresses different stages of manuscript writing and publishing by answering when are data ready for publishing, where to publish, how to structure manuscript, best way to present data, how to properly get out message, which writing ethics to consider, how to effectively use citation program, how to communicate with reviewers and editors, and efficient ways to manage coauthors. S/U or letter grading.

**240A. Radar Meteorology. (4)** Lecture, three hours. Radar detection of spherical and nonspherical particles; use of radar in studying size distributions of cloud and precipitation particles, precipitation intensity and amount, updraft velocities, horizontal wind speed, and turbulence; radar observations of convective clouds, thunderstorms, tornadoes, hurricanes, squall lines, and fronts; clear air echoes. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**C240B. Remote Sensing of Atmosphere and Oceans. (4)** Lecture, three hours. Requisite: Physics 1C or 5B. Theory and techniques of remote sensing; atmospheric spectroscopy, scattering, and polarization; passive and active techniques; relevant satellite systems; inversion methods; remote sensing of clouds, aerosols, temperature, precipitation, and trace constituents; remote sensing of oceans and biosphere. Concurrently scheduled with course C160. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**244A. Atmospheric Radiation. (4)** Lecture, three hours. Requisite: course 203B. Presentation of computational methods for solar and thermal infrared radiative fluxes and heating rates in clear, aerosol, and cloudy atmospheres for climate studies. Topics include line-by-line and correlated k-distribution methods for treating gaseous absorption, simplified methods for radiative transfer in Rayleigh and Lorenz/Mie atmospheres, and global radiative equilibrium. Use of user-friendly computer code required to perform calculations of radiative fluxes and heating rates in various atmospheric conditions for climate applications. S/U or letter grading.

**244B. Radiation and Climate. (4)** Lecture, three hours; laboratory, one hour. Requisite: course 203B. Radiation budget of Earth/atmosphere system observed

from satellites. Introduction to one-dimensional radiative-convective and energy-balance climate models. Climatic impact of increases in greenhouse gases and anthropogenic aerosols. Climatic impact of changes in solar constant, solar insolation, and volcanic eruption. Radiative forcing in global climate models: clouds and aerosols. Role of radiation in numerical simulation of interannual variability. S/U or letter grading.

**245. Aerosol-Climate Interactions. (4)** Lecture, three hours. Requisite: course 203B. Recommended requisite: course 203A. Study of how aerosols can affect weather and climate by interacting with clouds through their potential to act as cloud condensation or ice nuclei and with radiation through their ability to scatter and absorb solar and terrestrial radiation. Origin of large uncertainty estimates attributed to aerosol-cloud and aerosol-radiation interactions in climate change assessments. Structured around reading and discussion of scientific publications. S/U or letter grading.

## Upper Atmosphere and Space Physics

**M250A. Solar System Magnetohydrodynamics. (4)** (Same as Earth, Planetary, and Space Sciences M263A.) Lecture, three hours. Requisite: course C205A. Derivation of MHD equations with two fluid aspects, generalized Ohm's law, small amplitude waves, discontinuities, shock waves, and instabilities. Applications to statics and dynamics of solar wind and planetary magnetospheres and to solar wind/magnetosphere/ionosphere coupling. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**250B. Solar System Microscopic Plasma Processes. (4)** Lecture, three hours. Requisite: course C205A. Adiabatic charged particle dynamics; incoherent radiation processes; collective effects in plasma; propagation characteristics of electrostatic and electromagnetic waves; introduction to resonant interaction between charged particles and plasma waves. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**256. Ionospheric Electrodynamics. (4)** Lecture, three hours. Ionospheric structure, currents, and electric fields; equatorial and high-latitude ionospheres; ionospheric control of magnetospheric phenomena. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**257. Radiation Belt Plasma Physics. (4)** Lecture, three hours. Requisite: course 250B. Turbulent plasma instabilities and their relation to satellite observations and magnetospheric structure. Processes responsible for source, loss, and transport of energetic radiation belt particles. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**258. Sources and Losses of Magnetospheric Plasma. (4)** Lecture, three hours. Transfer of plasma across magnetopause, sources for magnetotail, ionospheric plasma flow to magnetosphere, precipitation of magnetospheric particles, plasmasphere, and ring current. S/U or letter grading.

**259. Space Weather. (4)** Lecture, three hours. Identification, description, and theories for major disturbances in magnetosphere/ionosphere/thermosphere system. Storms, substorms, convection bays, and other disturbances. Connections to interplanetary conditions, particle injection and precipitation, currents and fields. S/U or letter grading.

**C260. Data Analysis in Atmospheric and Oceanic Sciences. (4)** Lecture, three hours; laboratory, one hour. Enforced requisite: one course from 101 through M105. Overview of data analytic methods in common use in atmospheric and oceanic research. Linear models, principal component analysis (empirical orthogonal function), time-series analysis, and clustering

methods. Model validation and evaluation, significance tests, error analysis, bias detection. Emphasis on practical applications, with specific examples from atmospheric and oceanic sciences. Concurrently scheduled with course C182. S/U or letter grading.

### Special Studies

**270. Seminar: Atmospheric Sciences. (2)** Seminar, one hour. May be repeated for credit. S/U or letter grading.

**271. Seminar: Atmospheric Dynamics. (2)** Seminar, one hour. May be repeated for credit. S/U or letter grading.

**M272A-M272B-M272C. Seminars: Climate Dynamics. (2 to 4 each)** (Same as Earth, Planetary, and Space Sciences M270A-M270B-M270C and Geography M270A-M270B-M270C.) Seminar, two hours. Archaeological, geochemical, micropaleontological, and stratigraphic evidence for climate change throughout geological past. Rheology and dynamics of climatic subsystems: atmosphere and oceans, ice sheets and marine ice, lithosphere and mantle. Climate of other planets. Modeling, simulation, and prediction of modern climate on monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading.

**274. Seminar: Atmospheric Composition and Processes. (2)** Seminar, one hour. Seminar series covering talks in broad research area of atmospheric composition and processes. Presentations by internal and external speakers. May be repeated for credit. S/U letter grading.

**M275A-M275B-M275C. Current Research in Space Physics. (2–2–2)** (Same as Earth, Planetary, and Space Sciences M288A-M288B-M288C.) Seminar, two hours. Problems of current interest concerning particles and fields in space. May be repeated for credit. S/U grading.

**276. Seminar: Mesoscale Processes. (2)** Seminar, one hour. Selected topics of current research interest in convection, extratropical cyclones, and fronts. May be repeated for credit. S/U or letter grading.

**277. Seminar: Coastal Ocean. (2)** Seminar, one hour. Selected topics of current interdisciplinary research in marine and coastal sciences, including physical oceanography, biogeochemistry, marine biology, coastal engineering, atmospheric processes, and health-related issues. May be repeated for credit. S/U grading.

**281. Special Topics in Dynamic Meteorology. (2 to 4)** Lecture, two hours. Individual meetings with instructor to be arranged. Content varies from year to year. S/U or letter grading.

**282. Special Topics in Oceanography. (2 to 4)** Lecture, two hours. Individual meetings with instructor to be arranged. May be repeated for credit. S/U or letter grading.

**283. Special Topics in Atmospheric Physics. (2 to 4)** Lecture, two hours. Individual meetings with instructor to be arranged. May be repeated for credit. S/U or letter grading.

**284. Special Topics in Atmospheric Chemistry. (2 to 4)** Lecture, two hours. Individual meetings with instructor to be arranged. May be repeated for credit. S/U or letter grading.

**285. Special Topics in Solar Planetary Relations. (2 to 4)** Lecture, two hours. Individual meetings with instructor to be arranged. Selected topics of current research interest in solar wind, magnetospheric, or ionospheric physics. S/U or letter grading.

**286. Statistical Prediction and Verification. (3)** Seminar, one hour; discussion, one hour. Statistical prediction and verification. Topics include multiple linear regression, logistic regression (probability prediction), objective prediction using traditional statistical methods, ensemble prediction. S/U grading.

**287. Machine Learning Approaches for Determining Causality in Coupled Earth System Data. (3)** Seminar, three hours; discussion, one hour. Determining causality in earth system data is challenging because of strong coupling between different variables. Study of state-of-art statistical approaches that are designed to infer causality between variables that are strongly

coupled on different time scales—for example, ocean-atmospheric coupling and land-vegetation-atmospheric coupling, and for nonlinear coupling. Methods include but not limited to Granger causality, generalized equilibrium feedback assessment, step-wise generalized equilibrium feedback assessment, empirical dynamic modeling, and area weighted connectivity. Offers stimulating group learning experience through reading papers and discussion, and if possible, application of some of methods to earth system data. S/U grading.

**296A-296L. Advanced Topics in Atmospheric Sciences. (2 each)** Discussion, two hours. Advanced study and analysis of current topics in atmospheric sciences. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.  
**296A.** Ocean Dynamics. Research group meeting, two hours. **296B.** Boundary Layers, Clouds, and Climate. **296C.** Numerical Mesoscale Modeling. **296D.** Climate Dynamics. **296E.** Numerical Modeling of Atmosphere and Ocean. **296F.** Hierarchical Modeling of Ocean/Atmosphere System. **296G.** Upper Atmosphere and Space Physics. **296H.** Recent Advances in Atmospheric Chemistry. **296I.** Upper Atmospheric Dynamics. **296J.** Experimental Mesoscale Meteorology. **296K.** Tropical Meteorology. **296L.** Geophysical Fluid Dynamics, Oceanography, and Climate. **296M.** Radiation and Remote Sensing. **296N.** Tropospheric Chemistry and Climate Modeling and Analysis. **296P.** Atmospheric Chemistry of Air Pollution, Aerosols, and Climate.

**296O. Regional to Local Modeling of Atmospheric Composition and Climate Interactions. (2)** Research group meeting, two hours. Presentation and discussion of research on modeling of air quality and atmospheric composition from local to regional scales. Some topics include research in air quality forecasting to improve predictive capability of pollution episodes (e.g., haze conditions, forest fires, dust outbreaks); data assimilation and inverse modeling, i.e., using atmospheric composition observations (e.g., satellite, ground based, airborne) to improve air quality forecasts or better constrain emission sources; and investigation on modeling of aerosols (particles in atmosphere) and their interactions with clouds and radiation, which are in part responsible for uncertainties in climate change projections. Presentations by participants and invited speakers from other research groups. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Atmospheric and Oceanic Sciences. (2)** Seminar, one hour; two-day intensive training session prior to Fall Quarter. Required of all new teaching assistants and recommended for new PhD students and graduate students intending to be teaching assistants during academic year. Introduction to classroom teaching for general education and upper-division departmental courses. Topics include pedagogical techniques, preparation, academic integrity, and integration of technology and electronic communications. S/U grading.

**596. Directed Studies for Graduate Students. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597. Preparation for MS Comprehensive Examination. (2 to 8)** Tutorial, to be arranged. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. Research for PhD Dissertation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## BIOENGINEERING

Henry Samueli School of Engineering and Applied Science

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Bioengineering

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Dino Di Carlo, PhD, *Graduate Vice Chair*

Jacob J. Schmidt, PhD, *Undergraduate Vice Chair*

## Faculty Roster

### Professors

Denise R. Aberle, MD

Pei-Yu Chiou, PhD

Mark S. Cohen, PhD, *in Residence*

Linda L. Demer, MD, PhD

Timothy J. Deming, PhD

Dino Di Carlo, PhD (*Armond and Elena Hairapetian Professor of Engineering and Medicine*)

Elisa Franco, PhD

Robin L. Garrell, PhD

Tzung K. Hsiai, MD, PhD, *in Residence*

Daniel T. Kamei, PhD

Andrea M. Kasko, PhD

H. Pirouz Kavehpour, PhD

Chang-Jin (CJ) Kim, PhD (*Volgenau Endowed Professor of Engineering*)

Debiao Li, PhD, *in Residence*

Song Li, PhD

Wentai Liu, PhD

Arash Naeim, PhD, *in Residence*

Aydogan Ozcan, PhD (*Volgenau Professor of Engineering Innovation*)

Jacob Rosen, PhD

Jacob J. Schmidt, PhD

Vivek Shetty, DDS, DrMedDent

Kalyanam Shivkumar, MD, PhD, *in Residence*

Maie A. St. John, MD, PhD

Ren Sun, PhD

Yi Tang, PhD (*Ralph M. Parsons Foundation Professor of Chemical Engineering*)

Michael A. Teitell, PhD

Cun-Yu Wang, DDS, PhD (*Dr. No-Hee Park Professor of Dentistry*)

Paul S. Weiss, PhD (*Presidential Professor of Chemistry*)

Gerard C.L. Wong, PhD

Yang Yang, PhD

### Professors Emeriti

Chih-Ming Ho, PhD (*Ben Rich Lockheed Martin Professor Emeritus of Aeronautics*)

Bahram Jalali, PhD (*Fang Lu Endowed Professor Emeritus of Engineering*)

Edward R.B. McCabe, MD, PhD (*Mattel Executive Endowed Professor Emeritus of Pediatrics*)

Benjamin M. Wu, DDS, PhD

### Associate Professors

Corey W. Arnold, PhD, *in Residence*



Liang Gao, PhD  
 Weizhe Hong, PhD  
 William Hsu, PhD, *in Residence*  
 Shantanu H. Joshi, PhD, *in Residence*  
 Dan Ruan, PhD, *in Residence*

### Assistant Professors

Jun Chen, PhD  
 Tyler R. Clites, PhD  
 Mireille Kamariza, PhD  
 Neil Y.C. Lin, PhD  
 Aaron S. Meyer, PhD  
 Jaimie Stewart, PhD  
 Jennifer L. Wilson, PhD  
 Holden H. Wu, PhD, *in Residence*

### Adjunct Professors

Keisuke Goda, PhD  
 Zhen Gu, PhD

### Adjunct Associate Professors

Sophia N. Barbarie, PhD  
 Stephanie K. Seidlits, PhD  
 Bill J. Tawil, MBA, PhD

### Adjunct Assistant Professor

Chase Linsley, PhD

## Overview

The faculty members in the Department of Bioengineering have created state-of-the-art facilities for cutting-edge research and developed an innovative curriculum for the education of the next generation of bioengineers.

The bioengineering program offers forward-looking courses dedicated to producing graduates who are well-grounded in the fundamental sciences and highly proficient in rigorous analytical engineering tools necessary for lifelong success in the wide range of possible bioengineering careers. Combined with a strong emphasis on research, the program provides a unique engineering educational experience that responds to the growing needs and demands of bioengineering.

## Undergraduate Major

### Bioengineering BS

The bioengineering program is accredited by the Engineering Accreditation Commission of [ABET](#).

### Capstone Major

The Bioengineering major is a designated capstone major. Utilizing knowledge from previous courses and new skills learned from the capstone courses, undergraduate students work in teams to apply advanced knowledge of mathematics, science, and engineering principles to address problems at the interface of biology and engineering and to develop innovative bioengineering solutions to meet specific sets of design criteria. Coursework entails construction of student designs, project updates, presentation of projects in written and oral format, and team competition.

## Learning Outcomes

The Bioengineering major has the following learning outcomes:

- Application of advanced knowledge of mathematics, science, and engineering principles to address problems at the interface of biology and engineering
- Design of a system, component, or process to meet desired needs
- Function as a productive member of a multi-disciplinary team
- Effective oral and written communication
- Identification, formulation, and solution of engineering problems

## Requirements

### Preparation for the Major

*Required:* Bioengineering 10; Chemistry and Biochemistry 20A, 20B, 20L, 30A, 30AL, 30B; Civil and Environmental Engineering M20 or Computer Science 31 or Mechanical and Aerospace Engineering M20; Life Sciences 7A (satisfies school GE life sciences requirement) and 7C; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL.

### The Major

Students must complete the following courses:

1. Bioengineering 100, 110, 120, 167L, 175, 176, 180, Electrical and Computer Engineering 100; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone design courses (Bioengineering 177A, 177B)
2. Six additional major field elective courses (24 units) from Bioengineering C101, C102, C104, C105, C106, C107, 121, 122, C131, 132, C135, C139A, C139B, CM140, CM145, C147, M153, C155, 170, CM178, C179, 180L, M182, C183, C185, CM186, CM187, 199 (8 units maximum)

Three of the major field elective courses and the three technical breadth courses may also be selected from one of the following tracks. Bioengineering majors cannot take bioengineering technical breadth courses to fulfill the technical breadth requirement.

*Biomaterials and Regenerative Medicine:* Bioengineering C104, C105, CM140, C147, C183, C185, 199 (8 units maximum), Materials Science and Engineering 104, 110, C111, 120, 130, 132, 143A, 150, 151, 160, 161. The above materials science and engineering courses may be used to satisfy the technical breadth requirement.

*Biomedical Devices:* Bioengineering C131, M153, 199 (8 units maximum), Electrical and Computer Engineering 102, Mechanical and Aerospace Engineering C187L. The electrical and computer engineering or mechanical and aerospace engineering courses listed above may be used to satisfy the technical breadth requirement.

For Bioengineering 199 to fulfill a track requirement, the research project must fit within the scope of the track field, and the research report must be approved by the supervisor and vice chair.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Graduate Major

### Bioengineering MS, PhD

The graduate program in bioengineering trains future leaders in the wide range of possible bioengineering careers at the interface of engineering, life sciences, and medical practice. Graduates from the program are trained to be well-grounded in the fundamental sciences, adept at addressing open-ended problems, and highly proficient in rigorous analytical engineering tools necessary for lifelong success.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Bioengineering

### Lower-Division Courses

**10. Introduction to Bioengineering.** (2) Lecture, two hours; discussion, one hour; outside study, three hours. Preparation: high school biology, chemistry, mathematics, physics. Introduction to scientific and technological bases for established and emerging subfields of bioengineering, including biosensors, bioinstrumentation, and biosignal processing, biomechanics, biomaterials, tissue engineering, biotechnology, biological imaging, biomedical optics and lasers, neuroengineering, and biomolecular machines. Letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Bioengineering Fundamentals.** (4) Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: Mathematics 32A, Physics 1A. Fundamental basis for analysis and design of biological and biomedical devices and systems. Classical and statistical thermodynamic analysis of biological systems. Material, energy, charge, and force balances. Introduction to network analysis. Letter grading.

**C101. Engineering Principles for Drug Delivery.** (4) Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: Mathematics 33B, Physics 1B. Application of engineering principles for designing and understanding delivery of therapeutics. Discussion of physics and mathematics required for understanding colloidal stability. Analysis of concepts related to both modeling and experimentation of endocytosis and intracellular trafficking mechanisms. Analysis of diffusion of drugs, coupled with computational and engineering mathematics approaches. Concurrently scheduled with course C201. Letter grading.



**C102. Human Physiological Systems for Bioengineering I. (4)** Lecture, three hours; laboratory, two hours. Preparation: human molecular biology, biochemistry, and cell biology. Not open for credit to Physiological Science majors. Broad overview of basic biological activities and organization of human body in system (organ/tissue) to system basis, with particular emphasis on molecular basis. Modeling/simulation of functional aspect of biological system included. Actual demonstration of biomedical instruments, as well as visits to biomedical facilities. Concurrently scheduled with course C202. Letter grading.

**C104. Physical Chemistry of Biomacromolecules. (4)** Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: Chemistry 20A, 20B, 30A, Life Sciences 7A. To understand biological materials and design synthetic replacements, it is imperative to understand their physical chemistry. Biomacromolecules such as protein or DNA can be analyzed and characterized by applying fundamentals of polymer physical chemistry. Investigation of polymer structure and conformation, bulk and solution thermodynamics and phase behavior, polymer networks, and viscoelasticity. Application of engineering principles to problems involving biomacromolecules such as protein conformation, solvation of charged species, and separation and characterization of biomacromolecules. Concurrently scheduled with course C204. Letter grading.

**C105. Engineering of Bioconjugates. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: Chemistry 20A, 20B, 20L. Highly recommended: one organic chemistry course. Bioconjugate chemistry is science of coupling biomolecules for wide range of applications. Oligonucleotides may be coupled to one surface in gene chip, or one protein may be coupled to one polymer to enhance its stability in serum. Wide variety of bioconjugates are used in delivery of pharmaceuticals, in sensors, in medical diagnostics, and in tissue engineering. Basic concepts of chemical ligation, including choice and design of conjugate linkers depending on type of biomolecule and desired application, such as degradable versus nondegradable linkers. Presentation and discussion of design and synthesis of synthetic bioconjugates for some sample applications. Concurrently scheduled with course C205. Letter grading.

**C106. Topics in Bioelectricity for Bioengineers. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisites: Chemistry 20B, Life Sciences 7A, Mathematics 33B, Physics 1C. Coverage in depth of physical processes associated with biological membranes and channel proteins, with specific emphasis on electrophysiology. Basic physical principles governing electrostatics in dielectric media, building on complexity to ultimately address action potentials and signal propagation in nerves. Topics include Nernst/Planck and Poisson/Boltzmann equations, Nernst potential, Donnan equilibrium, GHK equations, energy barriers in ion channels, cable equation, action potentials, Hodgkin/Huxley equations, impulse propagation, axon geometry and conduction, dendritic integration. Concurrently scheduled with course C206. Letter grading.

**C107. Polymer Chemistry for Bioengineers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course C104 or C105. Fundamental concepts of polymer synthesis, including step-growth, chain growth (ionic, radical, metal catalyzed), and ring-opening, with focus on factors that can be used to control chain length, chain length distribution, and chain-end functionality, chain copolymerization, and stereochemistry in polymerizations. Presentation of applications of use of different polymerization techniques. Concepts of step-growth, chain-growth, ring-opening, and coordination polymerization, and effects of synthesis route on polymer properties. Lectures include both theory and practical issues demonstrated through examples. Concurrently scheduled with course C207. Letter grading.

**110. Biotransport and Bioreaction Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: course 100, Mathematics 33B. Introduction to analysis of fluid flow, heat transfer, mass transfer, binding events, and

biochemical reactions in systems of interest to bioengineers, including cells, tissues, organs, human body, extracorporeal devices, tissue engineering systems, and bioartificial organs. Introduction to pharmacokinetic analysis. Letter grading.

**120. Biomedical Transducers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: Chemistry 30A, Electrical Engineering 100, Mathematics 32B, Physics 1C. Principles of transduction, design characteristics for different measurements, reliability and performance characteristics, and data processing and recording. Emphasis on silicon-based microfabricated and nanofabricated sensors. Novel materials, biocompatibility, biostability. Safety of electronic interfaces. Actuator design and interfacing control. Letter grading.

**121. Introduction to Microcontrollers. (4)** Lecture, one hour; discussion, one hour; laboratory, three hours. Requisites: Civil and Environmental Engineering M20 or Mechanical and Aerospace Engineering M20 or Computer Science 31, and Electrical and Computer Engineering 100, or equivalent. Project-based hands-on introduction to basic and advanced concepts involved in development of projects using microcontrollers for projects in robotics and motion, light and sound, sensing and data acquisition, signal amplification and filtering, communication with specialty integrated circuits, and computer interface using Java-based processing language. Uses of Arduino platform to explore digital and analog input/output, SPI and I2C, interrupts, timing, use and writing of software libraries, and other advanced topics. Students construct and analyze first-order passive filters, operational amplifier (op-amp) circuits, and related material to equip them to make creative software and hardware projects, as well as develop their own instrumentation for subsequent laboratory or design work. Project-based homework has small theory component. Includes final design project. Letter grading.

**122. Introduction to Medical Imaging. (4)** Lecture, four hours; discussion, four hours; outside study, four hours. Requisites: Mathematics 33A, Physics 1C, or consent of instructor. Introduction of principles and survey of technology and applications in field of biomedical imaging. Letter grading.

**C131. Nanopore Sensing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 100, 120, Life Sciences 7A, Physics 1A, 1B, 1C. Analysis of sensors based on measurements of fluctuating ionic conductance through artificial or protein nanopores. Physics of pore conductance. Applications to single molecule detection and DNA sequencing. Review of current literature and technological applications. History and instrumentation of resistive pulse sensing, theory and instrumentation of electrical measurements in electrolytes, nanopore fabrication, ionic conductance through pores and GHK equation, patch clamp and single channel measurements and instrumentation, noise issues, protein engineering, molecular sensing, DNA sequencing, membrane engineering, and future directions of field. Concurrently scheduled with course C231. Letter grading.

**132. Nanogenerators for Bioengineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Addresses fundamentals, materials, processes, manufacturing, and devices fabrication for nanogenerators. Showcases key biomedical applications, in particular, nanogenerators made for circulatory system, neural system, cell modulation, microbe disinfection, and biodegradable electronics. Functionality of nanogenerators can serve for energy, sensing, and therapy purposes in bioengineering. Nanogenerators can be key components to realize autonomous intelligent closed-loop sensing and therapeutic system on human body for personalized health care to conquer medical fields in Internet of Things era. Letter grading.

**C135. Orthopaedic Biomechanical Engineering. (4)** (Formerly numbered 125.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: Physics 1A, 1B. Overview of central topics of orthopaedic biomechanical engineering, with focus on orthopaedic implant performance and how to evaluate new and existing implants. Topics include orthopaedic and biomechanical terminology and basic anatomy;

introduction to free body diagrams and calculations of joint reaction forces; material versus structural properties; introduction to stress analysis; mechanisms of fracture patterns and fracture fixation; biomechanics of total joint replacement; contemporary bearing materials and tribology; design and evaluation of total joint replacements; and introduction to spine biomechanics, spine implants, and pure moment testing. Concurrently scheduled with course C235. Letter grading.

**C139A. Biomolecular Materials Science I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Overview of chemical and physical foundations of biomolecular materials science that concern materials aspects of molecular biology, cell biology, and bioengineering. Understanding of different types of interactions that exist between biomolecules, such as van der Waals interactions, entropically modulated electrostatic interactions, hydrophobic interactions, hydration and solvation interactions, polymer-mediated interactions, depletion interactions, molecular recognition, and others. Illustration of these ideas using examples from bioengineering and biomedical engineering. Students should be able to make simple calculations and estimates that allow them to engage broad spectrum of bioengineering problems, such as those in drug and gene delivery and tissue engineering. May be taken independently for credit. Concurrently scheduled with course C239A. Letter grading.

**C139B. Biomolecular Materials Science II. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Course C139A is not requisite to C139B. Overview of chemical and physical foundations of biomolecular materials science that concern materials aspects of molecular biology, cell biology, and bioengineering. Understanding of different basic types of biomolecules, with emphasis on nucleic acids, proteins, and lipids. Study of how biological and biomimetic systems organize into their functional forms via self-assembly and how these structures impart biological function. Illustration of these ideas using examples from bioengineering and biomedical engineering. Case study on current topics, including drug delivery, gene therapy, cancer therapeutics, emerging pathogens, and relation of self-assembly to disease states. May be taken independently for credit. Concurrently scheduled with course C239B. Letter grading.

**CM140. Introduction to Biomechanics. (4)** (Same as Mechanical and Aerospace Engineering CM140.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Mechanical and Aerospace Engineering 101, 102, and 156A or 166A. Introduction to mechanical functions of human body; skeletal adaptations to optimize load transfer, mobility, and function. Dynamics and kinematics. Fluid mechanics applications. Heat and mass transfer. Power generation. Laboratory simulations and tests. Concurrently scheduled with course CM240. Letter grading.

**CM145. Molecular Biotechnology for Engineers. (4)** (Same as Chemical Engineering CM145.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: Chemical Engineering 45 or Life Sciences 7C. Selected topics in molecular biology that form foundation of biotechnology and biomedical industry today. Topics include recombinant DNA technology, molecular research tools, manipulation of gene expression, directed mutagenesis and protein engineering. DNA-based diagnostics and DNA microarrays, antibody and protein-based diagnostics, genomics and bioinformatics, isolation of human genes, gene therapy, and tissue engineering. Concurrently scheduled with course CM245. Letter grading.

**C147. Applied Tissue Engineering: Clinical and Industrial Perspective. (4)** Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: course CM102, Chemistry 20A, 20B, 20L, Life Sciences 7A. Overview of central topics of tissue engineering, with focus on how to build artificial tissues into regulated clinically viable products. Topics include biomaterials selection, cell source, delivery methods, FDA approval processes, and physical/chemical and biological testing. Case studies include skin and artificial skin, bone and cartilage, blood vessels, neuro-tissue engineering, and liver, kidney, and other organs.

Clinical and industrial perspectives of tissue engineering products. Manufacturing constraints, clinical limitations, and regulatory challenges in design and development of tissue-engineering devices. Concurrently scheduled with course C247. Letter grading.

**M153. Introduction to Microscale and Nanoscale Manufacturing. (4)** (Same as Chemical Engineering M153, Electrical and Computer Engineering M153, and Mechanical and Aerospace Engineering M183B.) Lecture, three hours; laboratory, four hours; outside study, five hours. Enforced requisites: Chemistry 20A, Physics 1A, 1B, 1C, 4AL. Introduction to general manufacturing methods, mechanisms, constraints, and microfabrication and nanofabrication. Focus on concepts, physics, and instruments of various microfabrication and nanofabrication techniques that have been broadly applied in industry and academia, including various photolithography technologies, physical and chemical deposition methods, and physical and chemical etching methods. Hands-on experience for fabricating microstructures and nanostructures in modern clean-room environment. Letter grading.

**C155. Fluid-Particle and Fluid-Structure Interactions in Microflows. (4)** Lecture, four hours; laboratory, one hour; outside study, seven hours. Enforced requisite: course 110. Introduction to Navier/Stokes equations, assumptions, and simplifications. Analytical framework for calculating simple flows and numerical methods to solve and gain intuition for complex flows. Forces on particles in Stokes flow and finite-inertia flows. Flows induced around particles with and without finite inertia and implications for particle-particle interactions. Secondary flows induced by structures and particles in confined flows. Particle separations by fluid dynamic forces: field-flow fractionation, inertial focusing, structure-induced separations. Application concepts in internal biological flows and separations for biotechnology. Helps students become sufficiently fluent with fluid mechanics vocabulary and techniques, design and model microfluidic systems to manipulate fluids, cells, and particles, and develop strong intuition for how fluid and particles behave in arbitrarily structured microchannels over range of Reynolds numbers. Concurrently scheduled with course C255. Letter grading.

**165EW. Bioengineering Ethics. (4)** Lecture, four hours; discussion, three hours; outside study, five hours. All professions have ethical rules that derive from moral theory. Bioethics is well-established discipline that addresses ethical problems about life, such as when do fertilized eggs become people? Should ending of life ever be assisted? At what cost should it be maintained? Unlike physicians, bioengineers do not make these decisions in practice. Engineering ethics addresses ethical problems about producing devices from molecules to bridges, such as when do concerns about risk outweigh concerns about cost? When are weapons too dangerous to design? At what point does benefit of committing to building devices outweigh need to wait for more scientific confirmation of their effectiveness? Bioengineers must be aware of consequences of applying such devices to all living systems. Emphasis on research and writing within engineering environments. Satisfies engineering writing requirement. Letter grading.

**C166. Wearable Bioelectronics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Practice of human health care may be on cusp of revolution, driven by unprecedented level of personalization enabled by advances in technology, specifically, transformation of wearable devices from curiosities that provide qualitative information for fitness enthusiasts to sophisticated systems that produce clinical-grade data for physicians. Introduction of cutting-edge research in field of wearable bioelectronics. Addresses fundamentals, materials, processes, and devices for wearable bioelectronics, showcasing key applications including device fabrication, manufacturing, and health-care applications. Concurrently scheduled with course C266. Letter grading.

**167L. Bioengineering Laboratory. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Enforced requisite: Chemistry 20L. Laboratory experiments in fluorescence microscopy, bioconjugation, soft lithography, and cell culture culminate in design of

engineered surface for cell growth. Introduction to techniques used in laboratories and their underlying physical or chemical properties. Case studies connect laboratory techniques to current biomedical engineering research and reinforce experimental design skills. Letter grading.

**170. Cell Engineering and Laboratory. (4)** Lecture, four hours; laboratory, four hours; outside study, four hours. Preparation: general background on cell biology, calculus, and differential equations. Comprehensive introduction of cell engineering. Topics include quantitative and experimental analysis of cell behavior such as cell growth, migration and differentiation, biomaterial fabrication, cell-material interactions, cell signaling, tissue remodeling, and immunomodulation/isolation. Letter grading.

**175. Machine Learning and Data-Driven Modeling in Bioengineering. (4)** (Formerly numbered C175.) Lecture, four hours; laboratory, two hours; outside study, six hours. Requisites: Civil Engineering M20 or Mechanical and Aerospace Engineering M20 or Computer Science 31, Mathematics 32B, 33A. Overview of foundational data analysis and machine-learning methods in bioengineering, focusing on how these techniques can be applied to interpret experimental observations. Topics include probabilities, distributions, cross-validation, analysis of variance, reproducible computational workflows, dimensionality reduction, regression, hidden Markov models, and clustering. Students gain theoretical and practical knowledge of data analysis and machine-learning methods relevant to bioengineering. Application of these methods to experimental data from bioengineering studies. Students become sufficiently familiar with these techniques to design studies incorporating such analyses, execute analysis, and work in teams using similar approaches, and ensure correctness of their results. Letter grading.

**176. Principles of Biocompatibility. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: course 100, Mathematics 33B, Physics 1C. Biocompatibility at systemic, tissue, cellular, and molecular levels. Biomechanical compatibility, stress/strain constitutive equations, cellular and molecular response to mechanical signals, biochemical and cellular compatibility, immune response. Letter grading.

**177A. Bioengineering Capstone Design I. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Enforced requisites: courses 167L, 176. Lectures, seminars, and discussions on aspects of biomedical device and therapeutic design, including topics such as need finding, intellectual property, entrepreneurship, regulation, and project management. Working in teams, students develop innovative solutions to address current problems in medicine and biology. Sourcing and ordering of materials and supplies relevant to student projects. Exploration of different experimental and computational methods. Scientific presentation of progress. Letter grading.

**177B. Bioengineering Capstone Design II. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Enforced requisite: course 177A. Lectures, seminars, and discussions on aspects of biomedical device and therapeutic design, including meetings with scientific/clinical advisers and guest lectures from scientists in industry. Working in teams, students develop innovative solutions to address current problems in medicine and biology. Students conduct directed experiments and computational modeling, give oral presentations, write reports, and participate in bioengineering design competition. Letter grading.

**CM178. Introduction to Biomaterials. (4)** (Same as Materials Science CM180.) Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: Chemistry 20A, 20B, and 20L, or Materials Science 104. Engineering materials used in medicine and dentistry for repair and/or restoration of damaged natural tissues. Topics include relationships between material properties, suitability to task, surface chemistry, processing and treatment methods, and biocompatibility. Concurrently scheduled with course CM278. Letter grading.

**C179. Biomaterials-Tissue Interactions. (4)** Lecture, three hours; outside study, nine hours. Requisite: course CM178. In-depth exploration of host cellular response to biomaterials: vascular response, interface, and clotting, biocompatibility, animal models, inflammation, infection, extracellular matrix, cell adhesion, and role of mechanical forces. Concurrently scheduled with course C279. Letter grading.

**180. System Integration in Biology, Engineering, and Medicine I. (4)** Lecture, three hours; discussion, two hours; outside study, seven hours. Enforced requisites: courses 100, 110, 120, Life Sciences 7A, Physics 1C. Corequisite: course 180L. Part I of two-part series. Molecular basis of normal physiology and pathophysiology, and engineering design principles of cardiovascular and pulmonary systems. Fundamental engineering principles of selected medical therapeutic devices. Letter grading.

**180L. System Integration in Biology, Engineering, and Medicine I Laboratory. (4)** Lecture, one hour; laboratory, four hours; clinical visits, four hours; outside study, three hours. Corequisite: course 180. Hands-on experimentation and clinical applications of selected medical therapeutic devices associated with cardiovascular and pulmonary disorders. Letter grading.

**M182. Dynamic Biosystem Modeling and Simulation Methodology. (4)** (Same as Computer Science M182.) Lecture, four hours; discussion, one hour; laboratory, two hours; outside study, five hours. Requisites: Life Sciences 30A and 30B, or Mathematics 3A and 3B, or 31A and 31B. Recommended requisite or corequisite: Mathematics 3C, 32A, or 32T. For undergraduate students in life, computational, engineering, and mathematical sciences. Active learning approach. Introduction to explicit modeling and simulation of dynamic biological systems. Basic methodology for transforming biology, biochemistry, and physiology into system diagrams, graphs, and mathematical expressions for studying their behavior. Structural models, formulated from basic conservation and mass action laws and feedback concepts, are further transformed into first-order differential equations, and implemented in simulation diagrams for quantifying and exploring biosystem properties. Examples show how to use these explicit models to gain clarity on nature of biosystem phenomena, and frame questions and explore new ideas for research. Letter grading.

**C183. Targeted Drug Delivery and Controlled Drug Release. (4)** Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: Chemistry 20A, 20B, 20L. New therapeutics require comprehensive understanding of modern biology, physiology, biomaterials, and engineering. Targeted delivery of genes and drugs and their controlled release are important in treatment of challenging diseases and relevant to tissue engineering and regenerative medicine. Drug pharmacodynamics and clinical pharmacokinetics. Application of engineering principles (diffusion, transport, kinetics) to problems in drug formulation and delivery to establish rationale for design and development of novel drug delivery systems that can provide spatial and temporal control of drug release. Introduction to biomaterials with specialized structural and interfacial properties. Exploration of both chemistry of materials and physical presentation of devices and compounds used in delivery and release. Concurrently scheduled with course C283. Letter grading.

**M184. Introduction to Computational and Systems Biology. (2)** (Same as Computational and Systems Biology M184 and Computer Science M184.) Lecture, two hours; outside study, four hours. Enforced requisites: one course from Civil Engineering M20, Computer Science 31, Mechanical and Aerospace Engineering M20, or Program in Computing 10A; and Life Sciences 30B or Mathematics 3B or 31B. Survey course designed to introduce students to computational and systems modeling and computation in biology and medicine, providing motivation, flavor, culture, and cutting-edge contributions in computational biosciences and aiming for more informed basis for focused studies by students with computational and systems biology interests. Presentations by individual UCLA researchers discussing their active computational and systems biology research. P/NP grading.

**C185. Introduction to Tissue Engineering. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisites: course CM102 or CM202, Chemistry 20A, 20B, 20L. Tissue engineering applies principles of biology and physical sciences with engineering approach to regenerate tissues and organs. Guiding principles for proper selection of three basic components for tissue engineering: cells, scaffolds, and molecular signals. Concurrently scheduled with course C285. Letter grading.

**CM186. Computational Systems Biology: Modeling and Simulation of Biological Systems. (5)** (Same as Computational and Systems Biology M186, Computer Science CM186, and Ecology and Evolutionary Biology M178.) Lecture, four hours; laboratory, two hours; discussion, one hour. Requisites: Life Sciences 30A, 30B, Mathematics 32A or M32T, 33A, and 33B; or Mathematics 31A, 31B, 32A or M32T, 33A, and 33B. Dynamic biosystem modeling and computer simulation methods for studying biological/biomedical processes and systems at multiple levels of organization. Intermediate linear and nonlinear control system, multicompartmental, epidemiological, pharmacokinetic, and other biomodeling methods applied to life sciences problems at molecular, cellular, organ, and population levels. Both theory- and data-driven modeling, with focus on translating biomodeling goals and data into dynamical mathematical models, and implementing them for simulation, quantification, and analysis. Numerical simulation, optimization, and parameter identifiability and search algorithms, with model discrimination and analysis and software exercises in PC laboratory assignments. Concurrently scheduled with course CM286. Letter grading.

**CM187. Research Communication in Computational and Systems Biology. (4)** (Same as Computational and Systems Biology M187 and Computer Science CM187.) Lecture, four hours; outside study, eight hours. Requisites: course M182 or CM186 or Computational and Systems Biology M150; and research experience (course 199, Computational and Systems Biology 199, Computer Science 199, or equivalent). Closely directed, interactive, and real research experience in active quantitative systems biology research laboratory. Direction on how to focus on topics of current interest in scientific community, appropriate to student interests and capabilities. Critiques of oral presentations and written progress reports explain how to proceed with search for research results. Major emphasis on effective research reporting, both oral and written. Concurrently scheduled with course CM287. Letter grading.

**188. Special Courses in Bioengineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Special topics in bioengineering for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated for credit with topic or instructor change. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**194. Research Group Seminars: Bioengineering. (4)** Seminar, three hours. Limited to bioengineering undergraduate students who are part of research group. Study and analysis of current topics in bioengineering. Discussion of current research literature in research specialty of faculty member teaching course. Student presentation of projects in research specialty. May be repeated for credit. Letter grading.

**199. Directed Research in Bioengineering. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**C201. Engineering Principles for Drug Delivery. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: Mathematics 33B, Physics 1B. Application of engineering principles for designing and understanding delivery of therapeutics. Discussion of physics and mathematics required for understanding colloidal stability. Analysis of concepts related to both modeling and experimentation of endocytosis and intracellular trafficking mechanisms. Analysis of diffusion of drugs, coupled with computational and engineering mathematics approaches. Concurrently scheduled with course C101. Letter grading.

**C202. Human Physiological Systems for Bioengineering I. (4)** Lecture, three hours; laboratory, two hours. Preparation: human molecular biology, biochemistry, and cell biology. Not open for credit to Physiological Science majors. Broad overview of basic biological activities and organization of human body in system (organ/tissue) to system basis, with particular emphasis on molecular basis. Modeling/simulation of functional aspect of biological system included. Actual demonstration of biomedical instruments, as well as visits to biomedical facilities. Concurrently scheduled with course C102. Letter grading.

**C204. Physical Chemistry of Biomacromolecules. (4)** Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: Chemistry 20A, 20B, 30A, Life Sciences 7A. To understand biological materials and design synthetic replacements, it is imperative to understand their physical chemistry. Biomacromolecules such as protein or DNA can be analyzed and characterized by applying fundamentals of polymer physical chemistry. Investigation of polymer structure and conformation, bulk and solution thermodynamics and phase behavior, polymer networks, and viscoelasticity. Application of engineering principles to problems involving biomacromolecules such as protein conformation, solvation of charged species, and separation and characterization of biomacromolecules. Concurrently scheduled with course C104. Letter grading.

**C205. Engineering of Bioconjugates. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: Chemistry 20A, 20B, 20L. Highly recommended: one organic chemistry course. Bioconjugate chemistry is science of coupling biomolecules for wide range of applications. Oligonucleotides may be coupled to one surface in gene chip, or one protein may be coupled to one polymer to enhance its stability in serum. Wide variety of bioconjugates are used in delivery of pharmaceuticals, in sensors, in medical diagnostics, and in tissue engineering. Basic concepts of chemical ligation, including choice and design of conjugate linkers depending on type of biomolecule and desired application, such as degradable versus nondegradable linkers. Presentation and discussion of design and synthesis of synthetic bioconjugates for some sample applications. Concurrently scheduled with course C105. Letter grading.

**C206. Topics in Bioelectricity for Bioengineers. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisites: Chemistry 20B, Life Sciences 7A, Mathematics 33B, Physics 1C. Coverage in depth of physical processes associated with biological membranes and channel proteins, with specific emphasis on electrophysiology. Basic physical

principles governing electrostatics in dielectric media, building on complexity to ultimately address action potentials and signal propagation in nerves. Topics include Nernst/Planck and Poisson/Boltzmann equations, Nernst potential, Donnan equilibrium, GHK equations, energy barriers in ion channels, cable equation, action potentials, Hodgkin/Huxley equations, impulse propagation, axon geometry and conduction, dendritic integration. Concurrently scheduled with course C106. Letter grading.

**C207. Polymer Chemistry for Bioengineers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course C204 or C205. Fundamental concepts of polymer synthesis, including step-growth, chain growth (ionic, radical, metal catalyzed), and ring-opening, with focus on factors that can be used to control chain length, chain length distribution, and chain-end functionality, chain copolymerization, and stereochemistry in polymerizations. Presentation of applications of use of different polymerization techniques. Concepts of step-growth, chain-growth, ring-opening, and coordination polymerization, and effects of synthesis route on polymer properties. Lectures include both theory and practical issues demonstrated through examples. Concurrently scheduled with course C107. Letter grading.

**M209. Signal and Image Processing for Biomedicine. (4)** (Same as Physics and Biology and Medicine M209.) Lecture, three hours. Preparation: basic calculus or linear algebra and undergraduate probability. Mathematics and statistical fundamentals prevalent in biomedical physics studies. Notion and basic descriptions of linear shift-invariance and point spread functions in continuous and discrete time. Sampling theory and Fourier analysis. Signal representation of vector spaces, projection theorem, and least-squares approximations. Discussion of signal subspace methods, correlation and independence, principal component analysis, and independent component analysis. Basic ideas in inverse problems and optimization. Application in medical and signal processing. Development of geometric and informatics intuitions behind mathematics and statistics. Light derivations and MATLAB programming. S/U or letter grading.

**M214A. Digital Speech Processing. (4)** (Same as Electrical and Computer Engineering M214A.) Lecture, three hours; laboratory, two hours; outside study, seven hours. Requisite: Electrical and Computer Engineering 113. Theory and applications of digital processing of speech signals. Mathematical models of human speech production and perception mechanisms, speech analysis/synthesis. Techniques include linear prediction, filter-bank models, and homomorphic filtering. Applications to speech synthesis, automatic recognition, and hearing aids. Letter grading.

**M215. Biochemical Reaction Engineering. (4)** (Same as Chemical Engineering CM215.) Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: Chemical Engineering 101C. Use of previously learned concepts of biophysical chemistry, thermodynamics, transport phenomena, and reaction kinetics to develop tools needed for technical design and economic analysis of biological reactors. Letter grading.

**M217. Biomedical Imaging. (4)** (Same as Electrical and Computer Engineering M217.) Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: Electrical and Computer Engineering 114 or 211A. Optical imaging modalities in biomedicine. Other nonoptical imaging modalities discussed briefly for comparison purposes. Letter grading.

**M219. Principles and Applications of Magnetic Resonance Imaging. (4)** (Same as Physics and Biology in Medicine M219.) Lecture, three hours; discussion, one hour. Basic principles of magnetic resonance (MR), physics, and image formation. Emphasis on hardware, Bloch equations, analytic expressions, image contrast mechanisms, spin and gradient echoes, Fourier transform imaging methods, structure of pulse sequences, and various scanning parameters. Introduction to advanced techniques in rapid imaging, quantitative imaging, and spectroscopy. Letter grading.

**220. Introduction to Medical Informatics. (2)** Lecture, two hours; outside study, four hours. Designed for graduate students. Introduction to research topics

and issues in medical informatics for students new to field. Definition of this emerging field of study, current research efforts, and future directions in research. Key issues in medical informatics to expose students to different application domains, such as information system architectures, data and process modeling, information extraction and representations, information retrieval and visualization, health services research, telemedicine. Emphasis on current research endeavors and applications. S/U grading.

**221. Human Anatomy and Physiology for Medical and Imaging Informatics. (4)** Lecture, four hours; outside study, eight hours. Designed for graduate students. Introduction to basic human anatomy and physiology, with particular emphasis on understanding and visualization of anatomy and physiology through medical images. Topics relevant to acquisition, representation, and dissemination of anatomical knowledge in computerized clinical applications. Topics include chest, cardiac, neurology, gastrointestinal/genitourinary, endocrine, and musculoskeletal systems. Introduction to basic imaging physics (magnetic resonance, computed tomography, ultrasound, computed radiography) to provide context for imaging modalities predominantly used to view human anatomy. Geared toward nonphysicians who require more formal understanding of human anatomy/physiology. Letter grading.

**223A-223B-223C. Programming Laboratories for Medical and Imaging Informatics I, II, III. (4-4-4)** Lecture, two hours; laboratory, two hours; outside study, eight hours. Designed for graduate students. Programming laboratories to support coursework in other medical and imaging informatics core curriculum courses. Exposure to programming concepts for medical applications, with focus on basic abstraction techniques used in image processing and medical information system infrastructures. Letter grading. **223A.** Requisites: Computer Science 31, 32, Program in Computing 20A, 20B. Course 223A is requisite to 223B, which is requisite to 223C. Integrated with topics presented in course M227 to reinforce concepts presented with practical experience. Projects focus on understanding medical networking issues and implementation of basic protocols for healthcare environment, with emphasis on use of DICOM. Introduction to basic tools and methods used within informatics. **223B.** Requisite: course 223A. Integrated with topics presented in courses 223A, M227, and M228 to reinforce concepts presented with practical experience. Projects focus on medical image manipulation and decision support systems. **223C.** Requisite: course 223B. Exposure to programming concepts for medical applications, with focus on basic abstraction techniques used to extract meaningful features from medical text and imaging data and visualize results. Integrated with topics presented in courses 224B and M226 to reinforce concepts presented with practical experience. Projects focus on medical information retrieval, knowledge representation, and visualization.

**224A. Physics and Informatics of Medical Imaging. (4)** Lecture, four hours; laboratory, eight hours. Requisites: Mathematics 33A, 33B. Designed for graduate students. Introduction to principles of medical imaging and imaging informatics for nonphysicists. Overview of core imaging modalities: X ray, computed tomography (CT), and magnetic resonance (MR). Topics include signal generation, localization, and quantization. Image representation and analysis techniques such as Markov random fields, spatial characterization (atlases), denoising, energy representations, and clinical imaging workstation design. Provides basic understanding of issues related to basic medical image acquisition and analysis. Current research efforts with focus on clinical applications and new types of information made available through these modalities. Letter grading.

**224B. Advances in Imaging Informatics. (4)** Lecture, four hours; outside study, eight hours. Overview of informatics-based applications of medical imaging with focus on various advances in field, such as content-based image retrieval, computer-aided detection/diagnosis, and imaging genomics. Introduction to core concepts in information retrieval (IR), reviewing seminal papers on evaluating IR systems and their use in medicine (e.g., teaching files, case-based retrieval,

etc.). Examination of specific techniques for image feature extraction and processing, feature representation, indexing and querying, and classification (machine/deep learning). Survey of clinical applications of these techniques and ongoing challenges. Letter grading.

**M225. Bioseparations and Bioprocess Engineering. (4)** (Same as Chemical Engineering CM225.) Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced corequisite: Chemical Engineering 101C. Separation strategies, unit operations, and economic factors used to design processes for isolating and purifying materials like whole cells, enzymes, food additives, or pharmaceuticals that are products of biological reactors. Letter grading.

**M226. Medical Knowledge Representation. (4)** (Same as Information Studies M253.) Seminar, four hours; outside study, eight hours. Designed for graduate students. Issues related to medical knowledge representation and its application in healthcare processes. Topics include data structures used for representing knowledge (conceptual graphs, frame-based models), different data models for representing spatiotemporal information, rule-based implementations, current statistical methods for discovery of knowledge (data mining, statistical classifiers, and hierarchical classification), and basic information retrieval. Review of work in constructing ontologies, with focus on problems in implementation and definition. Common medical ontologies, coding schemes, and standardized indices/terminologies (SNOMED, UMLS). Letter grading.

**M227. Medical Information Infrastructures and Internet Technologies. (4)** (Same as Information Studies M254.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Introduction to networking, communications, and information infrastructures in medical environment. Exposure to basic concepts related to networking at several levels: low-level (TCP/IP, services), medium-level (network topologies), and high-level (distributed computing, Web-based services) implementations. Commonly used medical communication protocols (HL7, DICOM) and current medical information systems (HIS, RIS, PACS). Advances in networking, such as wireless health systems, peer-to-peer topologies, grid/cloud computing. Introduction to security and encryption in networked environments. Letter grading.

**M228. Medical Decision Making. (4)** (Same as Information Studies M255.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Overview of issues related to medical decision making. Introduction to concept of evidence-based medicine and decision processes related to process of care and outcomes. Basic probability and statistics to understand research results and evaluations, and algorithmic methods for decision-making processes (Bayes theorem, decision trees). Study design, hypothesis testing, and estimation. Focus on technical advances in medical decision support systems and expert systems, with review of classic and current research. Introduction to common statistical and decision-making software packages to familiarize students with current tools. Letter grading.

**M229. Advanced Topics in Magnetic Resonance Imaging. (4)** (Same as Physics and Biology in Medicine M219.) Lecture, four hours. Requisite: course M219. Designed for students interested in pursuing research related to development or translation of new magnetic resonance imaging (MRI) technique. Basic tools and understanding of recent MRI developments that have had high impact on field, involve novel pulse sequence design or image reconstructions, and enable imaging of anatomy or function in way that surpasses what is currently possible with any modality. Topics include in-depth sequence simulation, RF pulse design, rapid image acquisition, parallel imaging, compressed sensing, image reconstruction and processing, motion encoding and compensation, chemical-shift imaging and understanding, and understanding/avoiding artifacts. Programming exercises in MATLAB to provide hands-on experience. Letter grading.

**C231. Nanopore Sensing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 100, 120, Life Sciences 7A, Physics 1A,

1B, 1C. Analysis of sensors based on measurements of fluctuating ionic conductance through artificial or protein nanopores. Physics of pore conductance. Applications to single molecule detection and DNA sequencing. Review of current literature and technological applications. History and instrumentation of resistive pulse sensing, theory and instrumentation of electrical measurements in electrolytes, nanopore fabrication, ionic conductance through pores and GHK equation, patch clamp and single channel measurements and instrumentation, noise issues, protein engineering, molecular sensing, DNA sequencing, membrane engineering, and future directions of field. Concurrently scheduled with course C131. Letter grading.

**M233A. Medtech Innovation I: Entrepreneurial Opportunities in Medical Technology. (4)** (Same as Management M271A.) Lecture, three hours; outside study, nine hours. Designed for graduate and professional students in engineering, dentistry, design, law, management, and medicine. Focus on understanding how to identify unmet clinical needs, properly filtering through these needs using various acceptance criteria, and selecting promising needs for which potential medtech solutions are explored. Students work in groups to expedite traditional research and development processes to invent and implement new medtech devices that increase quality of clinical care and result in improved patient outcomes in hospital system. Introduction to intellectual property basics and various medtech business models. Letter grading.

**M233B. Medtech Innovation II: Prototyping and New Venture Development. (4)** (Same as Management M271B.) Lecture, three hours; outside study, nine hours. Requisite: course M233A. Designed for graduate and professional students in engineering, dentistry, design, law, management, and medicine. Development of medtech solutions for unmet clinical needs previously identified in course M233A. Steps necessary to commercialize viable medtech solutions. Exploration of concept selection, business plan development, intellectual property filing, financing strategies, and device prototyping. Letter grading.

**C235. Orthopaedic Biomechanical Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: Physics 1A, 1B. Overview of central topics of orthopaedic biomechanical engineering, with focus on orthopaedic implant performance and how to evaluate new and existing implants. Topics include orthopaedic and biomechanical terminology and basic anatomy; introduction to free body diagrams and calculations of joint reaction forces; material versus structural properties; introduction to stress analysis; mechanisms of fracture patterns and fracture fixation; biomechanics of total joint replacement; contemporary bearing materials and tribology; design and evaluation of total joint replacements; and introduction to spine biomechanics, spine implants, and pure moment testing. Concurrently scheduled with course C135. Letter grading.

**C239A. Biomolecular Materials Science I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Overview of chemical and physical foundations of biomolecular materials science that concern materials aspects of molecular biology, cell biology, and bioengineering. Understanding of different types of interactions that exist between biomolecules, such as van der Waals interactions, entropically modulated electrostatic interactions, hydrophobic interactions, hydration and solvation interactions, polymer-mediated interactions, depletion interactions, molecular recognition, and others. Illustration of these ideas using examples from bioengineering and biomedical engineering. Students should be able to make simple calculations and estimates that allow them to engage broad spectrum of bioengineering problems, such as those in drug and gene delivery and tissue engineering. May be taken independently for credit. Concurrently scheduled with course C139A. Letter grading.

**C239B. Biomolecular Materials Science II. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Course C239A is not requisite to C239B. Overview of chemical and physical foundations of biomolecular materials science that concern materials aspects of molecular biology, cell biology, and bioen-

gineering. Understanding of different basic types of biomolecules, with emphasis on nucleic acids, proteins, and lipids. Study of how biological and biomimetic systems organize into their functional forms via self-assembly and how these structures impart biological function. Illustration of these ideas using examples from bioengineering and biomedical engineering. Case study on current topics, including drug delivery, gene therapy, cancer therapeutics, emerging pathogens, and relation of self-assembly to disease states. May be taken independently for credit. Concurrently scheduled with course C139B. Letter grading.

**CM240. Introduction to Biomechanics. (4)** (Same as Mechanical and Aerospace Engineering CM240.) Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisites: Mechanical and Aerospace Engineering 101, 102, and 156A or 166A. Introduction to mechanical functions of human body; skeletal adaptations to optimize load transfer, mobility, and function. Dynamics and kinematics. Fluid mechanics applications. Heat and mass transfer. Power generation. Laboratory simulations and tests. Concurrently scheduled with course CM140. Letter grading.

**242. Biophotonics. (4)** Lecture, four hours; outside study, eight hours. Introduction of principles and survey applications in field of biophotonics. Letter grading.

**CM245. Molecular Biotechnology for Engineers. (4)** (Same as Chemical Engineering CM245.) Lecture, four hours; discussion, one hour; outside study, seven hours. Selected topics in molecular biology that form foundation of biotechnology and biomedical industry today. Topics include recombinant DNA technology, molecular research tools, manipulation of gene expression, directed mutagenesis and protein engineering, DNA-based diagnostics and DNA microarrays, antibody and protein-based diagnostics, genomics and bioinformatics, isolation of human genes, gene therapy, and tissue engineering. Concurrently scheduled with course CM145. Letter grading.

**C247. Applied Tissue Engineering: Clinical and Industrial Perspective. (4)** Lecture, three hours; discussion, two hours; outside study, seven hours. Prerequisites: course CM202, Chemistry 20A, 20B, 20L, Life Sciences 7A. Overview of central topics of tissue engineering, with focus on how to build artificial tissues into regulated clinically viable products. Topics include biomaterials selection, cell source, delivery methods, FDA approval processes, and physical/chemical and biological testing. Case studies include skin and artificial skin, bone and cartilage, blood vessels, neuro-tissue engineering, and liver, kidney, and other organs. Clinical and industrial perspectives of tissue engineering products. Manufacturing constraints, clinical limitations, and regulatory challenges in design and development of tissue-engineering devices. Concurrently scheduled with course C147. Letter grading.

**M248. Introduction to Molecular Imaging. (4)** (Same as Pharmacology M248 and Physics and Biology in Medicine M248.) Lecture, three hours; laboratory, one hour; outside study, seven hours. Exploration of role of molecular imaging in modern biology and medicine, including imaging physics, instrumentation, image processing, and applications of imaging for range of modalities. Practical experience provided through series of imaging laboratories. Letter grading.

**M250B. Microelectromechanical Systems (MEMS) Fabrication. (4)** (Same as Electrical and Computer Engineering M250B and Mechanical and Aerospace Engineering M280B.) Lecture, three hours; discussion, one hour; outside study, eight hours. Enforced prerequisite: course M153. Advanced discussion of micromachining processes used to construct MEMS. Coverage of many lithographic, deposition, and etching processes, as well as their combination in process integration. Materials issues such as chemical resistance, corrosion, mechanical properties, and residual/intrinsic stress. Letter grading.

**M252. Microelectromechanical Systems (MEMS) Device Physics and Design. (4)** (Same as Electrical and Computer Engineering M252 and Mechanical and Aerospace Engineering M282.) Lecture, four hours; discussion, one hour; outside study, seven hours. Introduction to MEMS design. Design methods, design rules, sensing and actuation mechanisms, microsensors,

and microactuators. Designing MEMS to be produced with both foundry and nonfoundry processes. Computer-aided design for MEMS. Design project required. Letter grading.

**C255. Fluid-Particle and Fluid-Structure Interactions in Microflows. (4)** Lecture, four hours; laboratory, one hour; outside study, seven hours. Enforced prerequisite: course 110. Introduction to Navier/Stokes equations, assumptions, and simplifications. Analytical framework for calculating simple flows and numerical methods to solve and gain intuition for complex flows. Forces on particles in Stokes flow and finite-inertia flows. Flows induced around particles with and without finite inertia and implications for particle-particle interactions. Secondary flows induced by structures and particles in confined flows. Particle separations by fluid dynamic forces: field-flow fractionation, inertial focusing, structure-induced separations. Application concepts in internal biological flows and separations for biotechnology. Helps students become sufficiently fluent with fluid mechanics vocabulary and techniques, design and model microfluidic systems to manipulate fluids, cells, and particles, and develop strong intuition for how fluid and particles behave in arbitrarily structured microchannels over range of Reynolds numbers. Concurrently scheduled with course C155. Letter grading.

**256. Drug Delivery Devices: Innovation and Translation. (4)** Lecture, four hours; outside study, eight hours. Introduction to modern topics in drug delivery devices and relevant biomedical applications. Topics provide comprehensive and critical examination of current and emerging research and development on drug delivery devices, with emphasis on innovation and translation. Topics include bioresponsive drug delivery systems, drug delivery reservoirs, MEMS and micro/nanorobots for drug delivery, nanomedicine-device combination products, and development and regulation of drug delivery devices. Students acquire theoretical and practical knowledge of drug delivery devices. Students gain ability to identify advanced approaches for drug delivery mediated by devices in effective and safe manner, from systemic administration to site-specific release; design appropriate mechanisms, materials, and structures for engineering drug delivery devices to deliver different therapeutics for treating variety of diseases; and propose methods and relevant experiments to validate efficacy of certain drug delivery devices. Letter grading.

**M260. Neuroengineering. (4)** (Same as Electrical and Computer Engineering M255 and Neuroscience M206.) Lecture, four hours; laboratory, three hours; outside study, five hours. Prerequisites: Mathematics 32A, Physics 1B or 5C. Introduction to principles and technologies of bioelectricity and neural signal recording, processing, and stimulation. Topics include bioelectricity, electrophysiology (action potentials, local field potentials, EEG, ECG), intracellular and extracellular recording, microelectrode technology, neural signal processing (neural signal frequency bands, filtering, spike detection, spike sorting, stimulation artifact removal), brain-computer interfaces, deep-brain stimulation, and prosthetics. Letter grading.

**M261A-M261B-M261C. Evaluation of Research Literature in Neuroengineering. (2-2-2)** (Same as Electrical and Computer Engineering M256A-M256B-M256C and Neuroscience M212A-M212B-M212C.) Discussion, two hours; outside study, four hours. Critical discussion and analysis of current literature related to neuroengineering research. S/U grading.

**M263. Anatomy of Central Nervous System. (4)** (Same as Neuroscience M203.) Lecture, 75 minutes; discussion/laboratory, two hours. Prior to first laboratory meeting, students must complete Bloodborne Pathogens training course through UCLA Environment, Health and Safety. Study of anatomical locations of and relationships between ascending and descending sensory and motor systems from spinal cord to cerebral cortex. Covers cranial nerves and brainstem anatomy along with anatomy of ventricular and vascular systems of brain. Subcortical forebrain areas covered in detail. Integrated anatomy laboratory includes brain dissections and overview of tools for MRI analysis. Letter grading.

**C266. Wearable Bioelectronics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Practice of human health care may be on cusp of revolution, driven by unprecedented level of personalization enabled by advances in technology, specifically, transformation of wearable devices from curiosities that provide qualitative information for fitness enthusiasts to sophisticated systems that produce clinical-grade data for physicians. Introduction of cutting-edge research in field of wearable bioelectronics. Addresses fundamentals, materials, processes, and devices for wearable bioelectronics, showcasing key applications including device fabrication, manufacturing, and health-care applications. Concurrently scheduled with course C166. Letter grading.

**271. Biotechnology of Cellular Therapies. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Examination of how to design cells and cellular systems to perform therapeutic tasks in complex physiological environments. Discussion of immune system as case study of engineering functionality based on certain required specifications (e.g., not attacking self, recognition of pathogens, preventing cancer). Discussion also of methods and techniques used to genetically modify, separate, and analyze cells, which—just like in chemical synthesis and purification of drugs—are important to creating therapies with well-defined properties based on cells. Letter grading.

**M273. Micro- and Nanoscale Biosensing for Molecular Diagnostics. (4)** (Same as Electrical and Computer Engineering M275.) Lecture, four hours; discussion, one hour; outside study, seven hours. Covers state-of-art and emerging biosensors in context of molecular diagnostics. Students learn relevant biology and biochemistry pertinent to molecular diagnostics. Students gain thorough understanding of interfaces between bioparticles, biofluids, and electronics. Topics include biosensor performance parameters, modes of detection, sample preparation challenges, microfluidics, and emerging wearable biosensing platforms, as well as proteomics, genomics, and DNA sequencing technologies. Letter grading.

**275. Machine Learning and Data-Driven Modeling in Bioengineering. (4)** (Formerly numbered C275.) Lecture, four hours; laboratory, two hours; outside study, six hours. Prerequisites: Civil Engineering M20 or Mechanical and Aerospace Engineering M20 or Computer Science 31, Mathematics 32B, 33A. Overview of foundational data analysis and machine-learning methods in bioengineering, focusing on how these techniques can be applied to interpret experimental observations. Topics include probabilities, distributions, cross-validation, analysis of variance, reproducible computational workflows, dimensionality reduction, regression, hidden Markov models, and clustering. Students gain theoretical and practical knowledge of data analysis and machine-learning methods relevant to bioengineering. Application of these methods to experimental data from bioengineering studies. Students become sufficiently familiar with these techniques to design studies incorporating such analyses, execute analysis, and work in teams using similar approaches, and ensure correctness of their results. Letter grading.

**CM278. Introduction to Biomaterials. (4)** (Same as Materials Science CM280.) Lecture, three hours; discussion, two hours; outside study, seven hours. Prerequisites: Chemistry 20A, 20B, and 20L, or Materials Science 104. Engineering materials used in medicine and dentistry for repair and/or restoration of damaged natural tissues. Topics include relationships between material properties, suitability to task, surface chemistry, processing and treatment methods, and biocompatibility. Concurrently scheduled with course CM178. Letter grading.

**C279. Biomaterials-Tissue Interactions. (4)** Lecture, three hours; outside study, nine hours. Prerequisite: course CM278. In-depth exploration of host cellular response to biomaterials: vascular response, interface, and clotting, biocompatibility, animal models, inflammation, infection, extracellular matrix, cell adhesion, and role of mechanical forces. Concurrently scheduled with course C179. Letter grading.



**281. Advanced Bioconjugate Design and Methods.**

(4) Lecture, four hours; outside study, eight hours. Requisite: course C205. Builds upon basic concepts of chemical ligation covered in course C205, and focuses on current state-of-art methods and designs for precise bioconjugate formation, especially in context of living cells. Focus on recently developed bioconjugate methods from primary literature, and their applications in bioengineering. Students gain deep understanding of principles of bioconjugation: coupling of biologically active molecules to substrates, devices, or one another, especially for applications in living cells and in vivo. Letter grading.

**282. Biomaterial Interfaces.** (4) Lecture, four hours; laboratory, eight hours. Requisite: course CM178 or CM278. Function, utility, and biocompatibility of biomaterials depend critically on their surface and interfacial properties. Discussion of morphology and composition of biomaterials and nanoscales, mesoscales, and macroscales, techniques for characterizing structure and properties of biomaterial interfaces, and methods for designing and fabricating biomaterials with prescribed structure and properties in vitro and in vivo. Letter grading.

**C283. Targeted Drug Delivery and Controlled Drug Release.**

(4) Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: Chemistry 20A, 20B, 20L. New therapeutics require comprehensive understanding of modern biology, physiology, biomaterials, and engineering. Targeted delivery of genes and drugs and their controlled release are important in treatment of challenging diseases and relevant to tissue engineering and regenerative medicine. Drug pharmacodynamics and clinical pharmacokinetics. Application of engineering principles (diffusion, transport, kinetics) to problems in drug formulation and delivery to establish rationale for design and development of novel drug delivery systems that can provide spatial and temporal control of drug release. Introduction to biomaterials with specialized structural and interfacial properties. Exploration of both chemistry of materials and physical presentation of devices and compounds used in delivery and release. Concurrently scheduled with course C183. Letter grading.

**M284. Functional Neuroimaging: Techniques and Applications.**

(3) (Same as Neuroscience M285, Physics and Biology in Medicine M285, Psychiatry M285, and Psychology M278.) Lecture, three hours. In-depth examination of activation imaging, including MRI and electrophysiological methods, data acquisition and analysis, experimental design, and results obtained thus far in human systems. Strong focus on understanding technologies, how to design activation imaging paradigms, and how to interpret results. Laboratory visits and design and implementation of functional MRI experiment. S/U or letter grading.

**C285. Introduction to Tissue Engineering.**

(4) Lecture, three hours; discussion, one hour; outside study, eight hours. Requisites: course CM102 or CM202, Chemistry 20A, 20B, 20L. Tissue engineering applies principles of biology and physical sciences with engineering approach to regenerate tissues and organs. Guiding principles for proper selection of three basic components for tissue engineering: cells, scaffolds, and molecular signals. Concurrently scheduled with course C185. Letter grading.

**CM286. Computational Systems Biology: Modeling and Simulation of Biological Systems.**

(5) (Same as Computer Science CM286.) Lecture, four hours; laboratory, two hours; discussion, one hour. Requisites: Life Sciences 30A, 30B, Mathematics 32A or M32T, 33A, and 33B; or Mathematics 31A, 31B, 32A or M32T, 33A, and 33B. Dynamic biosystem modeling and computer simulation methods for studying biological/biomedical processes and systems at multiple levels of organization. Intermediate linear and non-linear control system, multicompartmental, epidemiological, pharmacokinetic, and other biomodeling methods applied to life sciences problems at molecular, cellular, organ, and population levels. Both theory- and data-driven modeling, with focus on translating biomodeling goals and data into dynamical mathematical models, and implementing them for simulation, quantification, and analysis. Numerical simulation, optimization, and parameter identifiability

and search algorithms, with model discrimination and analysis and software exercises in PC laboratory assignments. Concurrently scheduled with course CM186. Letter grading.

**CM287. Research Communication in Computational and Systems Biology.**

(4) (Same as Computer Science CM287.) Lecture, four hours; outside study, eight hours. Requisites: course M182 or CM286 or Computational and Systems Biology M150; and research experience (course 199, Computational and Systems Biology 199, Computer Science 199, or equivalent). Closely directed, interactive, and real research experience in active quantitative systems biology research laboratory. Direction on how to focus on topics of current interest in scientific community, appropriate to student interests and capabilities. Critiques of oral presentations and written progress reports explain how to proceed with search for research results. Major emphasis on effective research reporting, both oral and written. Concurrently scheduled with course CM187. Letter grading.

**295A-295K. Seminars: Research Topics in Bioengineering.**

(2 each) Seminar, two hours; outside study, four hours. Limited to bioengineering graduate students. Advanced study and analysis of current topics in bioengineering. Discussion of current research and literature in research specialty of faculty member teaching course. Student presentation of projects in research specialty. May be repeated for credit. S/U grading. **295A.** Biomaterial Research. **295B.** Biomaterials and Tissue Engineering Research. **295C.** Minimally Invasive and Laser Research. **295D.** Hybrid Device Research. **295E.** Molecular Cell Bioengineering Research. **295F.** Biopolymer Materials and Chemistry. **295G.** Biomicrofluidics and Bionanotechnology Research. **295H.** Biomimetic System Research. **295J.** Neural Tissue Engineering and Regenerative Medicine. **295K.** Research in Synthetic Immunology and Microbiology.

**295L. Seminar: Research Topics in Bioengineering—Cell and Tissue Engineering.**

(2) Seminar, one to four hours; outside study, two to five hours. Limited to bioengineering graduate students. Advanced study and analysis of current topics in bioengineering. Discussion of current research and literature in cell engineering, mechanobiology, immunoengineering, and regenerative medicine. Student presentation of projects in research specialty. May be repeated for credit. S/U grading.

**295M. Seminar: Research Topics in Bioengineering—Research in Biological Systems Engineering.**

(2) Seminar, two hours; outside study, four hours. Limited to bioengineering graduate students. Advanced study and analysis of current topics in bioengineering. Discussion of current research and literature in systems biology, immune engineering, computational analysis of cell signaling, machine learning, quantitative molecular biology. Student presentation of projects in research specialty. May be repeated for credit. S/U grading.

**295N. Seminar: Research Topics in Bioengineering—Research in Biophotonics.**

(2) Seminar, one to four hours; outside study, two to five hours. Limited to bioengineering graduate students. Advanced study and analysis of current topics in bioengineering. Discussion of current research and literature in biophotonics, medical imaging, and computational imaging. Student presentation of projects in research specialty. May be repeated for credit. S/U grading.

**295O. Seminar: Research Topics in Bioengineering—Research in Modeling of Drug Effects.**

(2) Seminar, one to four hours; outside study, two to five hours. Limited to bioengineering graduate students. Advanced study and analysis of current topics in bioengineering. Discussion of current research and literature in protein-protein interaction network modeling, clinical estimation of drug effects, drug repurposing, and drug pathways. Student presentation of projects in research specialty. May be repeated for credit. S/U grading.

**295P. Seminar: Research Topics in Bioengineering—Research in Wearable Bioelectronics for Personalized Health Care.**

(2) Seminar, one to four hours; outside study, two to five hours. Limited to bioengineering graduate students. Advanced study and anal-

ysis of current topics in biomedical instrumentations. Discussion of current research and literature in biomaterials synthesis, biosensors and bioelectronics fabrications, circuitry and signal processing. Student presentation of projects every week in research specialty. May be repeated for credit. S/U grading.

**295Q. Seminar: Research Topics in Bioengineering—Research in Biomolecular Engineering and Microbial Biosensing.**

(2) Seminar, one to four hours; outside study, two to five hours. Limited to bioengineering graduate students. Advanced study and analysis of current topics in bioengineering. Discussion of current research and literature in molecular and cellular engineering, glycoengineering, genetic engineering, biosensor development and transcriptional signaling. Student presentation of projects in research specialty. May be repeated for credit. S/U grading.

**M296A. Advanced Modeling Methodology for Dynamic Biomedical Systems.**

(4) (Same as Computer Science M296A and Medicine M270C.) Lecture, four hours; outside study, eight hours. Requisite: Electrical Engineering 141 or 142 or Mathematics 115A or Mechanical and Aerospace Engineering 171A. Development of dynamic systems modeling methodology for physiological, biomedical, pharmacological, chemical, and related systems. Control system, multicompartmental, noncompartmental, and input/output models, linear and nonlinear. Emphasis on model applications, limitations, and relevance in biomedical sciences and other limited data environments. Problem solving in PC laboratory. Letter grading.

**M296B. Optimal Parameter Estimation and Experiment Design for Biomedical Systems.**

(4) (Same as Biomathematics M270, Computer Science M296B, and Medicine M270D.) Lecture, four hours; outside study, eight hours. Requisite: course CM286 or M296A or Biomathematics 220. Estimation methodology and model parameter estimation algorithms for fitting dynamic system models to biomedical data. Model discrimination methods. Theory and algorithms for designing optimal experiments for developing and quantifying models, with special focus on optimal sampling schedule design for kinetic models. Exploration of PC software for model building and optimal experiment design via applications in physiology and pharmacology. Letter grading.

**M296C. Advanced Topics and Research in Biomedical Systems Modeling and Computing.**

(4) (Same as Computer Science M296C and Medicine M270E.) Lecture, four hours; outside study, eight hours. Requisite: course M296B. Research techniques and experience on special topics involving models, modeling methods, and model/computing in biological and medical sciences. Review and critique of literature. Research problem searching and formulation. Approaches to solutions. Individual MS- and PhD-level project training. Letter grading.

**M296D. Introduction to Computational Cardiology.**

(4) (Same as Computer Science M296D.) Lecture, four hours; outside study, eight hours. Requisite: course CM186. Introduction to mathematical modeling and computer simulation of cardiac electrophysiological process. Ionic models of action potential (AP). Theory of AP propagation in one-dimensional and two-dimensional cardiac tissue. Simulation on sequential and parallel supercomputers, choice of numerical algorithms, to optimize accuracy and to provide computational stability. Letter grading.

**298. Special Studies in Bioengineering.**

(4) Lecture, four hours; outside study, eight hours. Study of selected topics in bioengineering taught by resident and visiting faculty members. May be repeated for credit. Letter grading.

**299. Seminar: Bioengineering Topics.**

(2) Seminar, two hours; outside study, four hours. Designed for graduate bioengineering students. Seminar by leading academic and industrial bioengineers from UCLA, other universities, and bioengineering companies such as Baxter, Amgen, Medtronic, and Guidant on development and application of recent technological advances in discipline. Exploration of cutting-edge developments and challenges in wound healing models, stem cell biology, angiogenesis, signal transduction,

gene therapy, cDNA microarray technology, bioartificial cultivation, nano- and micro-hybrid devices, scaffold engineering, and bioinformatics. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Assistant Training Seminar. (2)** Seminar, two hours; outside study, four hours. Limited to graduate bioengineering students. Required of all departmental teaching assistants. May be taken concurrently while holding TA appointment. Seminar on communicating bioengineering and biomedical engineering principles, concepts, and methods; teaching assistant preparation, organization, and presentation of material, including use of visual aids, grading, advising, and rapport with students. S/U grading.

**596. Directed Individual or Tutorial Studies. (2 to 8)** Tutorial, to be arranged. Limited to graduate bioengineering students. Petition forms to request enrollment may be obtained from program office. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for MS Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. Limited to graduate bioengineering students. Reading and preparation for MS comprehensive examination. S/U grading.

**597B. Preparation for PhD Preliminary Examinations. (2 to 16)** Tutorial, to be arranged. Limited to graduate bioengineering students. S/U grading.

**597C. Preparation for PhD Oral Qualifying Examination. (2 to 16)** Tutorial, to be arranged. Limited to graduate bioengineering students. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 12)** Tutorial, to be arranged. Limited to graduate bioengineering students. Supervised independent research for MS candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Limited to graduate bioengineering students. Usually taken after students have been advanced to candidacy. S/U grading.

## BIOINFORMATICS

Interdepartmental Program  
College of Letters and Science

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310-825-0068  
**Program e-mail**

Xinshu Grace Xiao, PhD, *Chair*

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Jason Ernst, PhD (*Biological Chemistry, Computational Medicine, Computer Science*)

Eleazar Eskin, PhD (*Computational Medicine, Computer Science, Human Genetics*)

Alexander Hoffmann, PhD (*Microbiology, Immunology, and Molecular Genetics*)

Kirk E. Lohmueller, PhD (*Ecology and Evolutionary Biology*)

Paivi E. Pajukanta, MD, PhD (*Human Genetics*)

Bogdan Pasaniuc, PhD (*Computational Medicine, Human Genetics, Pathology and Laboratory Medicine*)

Matteo Pellegrini, PhD (*Human Genetics; Molecular, Cell, and Developmental Biology*)

Xinshu Grace Xiao, PhD (*Integrative Biology and Physiology*)

Xianghong Jasmine Zhou, PhD (*Pathology and Laboratory Medicine*)

## Overview

Bioinformatics is defined broadly as the study of the inherent structure of biological information. It is the marriage of biology and the information sciences. Examples of current bioinformatics research include the analysis of gene and protein sequences to reveal protein evolution and alternative splicing, the development of computational approaches to study and predict protein structure to further understanding of function, the analysis of mass spectrometry data to understand the connection between phosphorylation and cancer, the development of computational methods to utilize expression data to reverse engineer gene networks in order to more completely model cellular biology, and the study of population genetics and its connection to human disease.

Graduates in bioinformatics can expect to engage in any combination of research, teaching, clinical service, and consultation. Within universities and research centers there is a growing need for bioinformatics researchers who can analyze new sources of high-throughput experimental data in biology, medicine, and bioengineering. Biotechnology and pharmaceutical companies also seek bioinformatics graduates for applied research on disease—and drug discovery. Medical centers are also increasingly hiring bioinformatics graduates as genomics data become important in medical research and clinical applications.

## Graduate Major

### Bioinformatics MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Bioinformatics

### Graduate Courses

**201. Seminar: Advanced Methods in Computational Biology. (2)** Seminar, one hour; discussion, one hour. Designed for advanced graduate students. Examination of computational methodology in bioinformatics and computational biology through presentation of current research literature. How to select and apply methods from computational and mathematical disci-

plines to problems in bioinformatics and computational biology; development of novel methodologies. S/U or letter grading.

**202. Bioinformatics Interdisciplinary Research Seminar. (4)** Seminar, two hours; discussion, two hours. Concrete examples of how biological questions about genomics data map to and are solved by methodologies from other disciplines, including statistics, computer science, and mathematics. May be repeated for credit. S/U or letter grading.

**M221. Introduction to Bioinformatics. (4)** (Same as Chemistry CM260A, Computer Science CM221, and Human Genetics M260A.) Lecture, four hours; discussion, two hours. Prerequisites: Computer Science 32 or Program in Computing 10C with grade of C– or better, and one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Introduction to bioinformatics and methodologies, with emphasis on concepts and inventing new computational and statistical techniques to analyze biological data. Focus on sequence analysis and alignment algorithms. S/U or letter grading.

**M223. Statistical Methods in Computational Biology. (4)** (Same as Biomathematics M271 and Statistics M254.) Lecture, three hours; discussion, one hour. Preparation: elementary probability concepts. Prerequisite: course M221 or Statistics 100A or 200A. Introduction to statistical methods developed and widely applied in several branches of computational biology, such as gene expression, sequence alignment, motif discovery, comparative genomics, and biological networks, with emphasis on understanding of basic statistical concepts and use of statistical inference to solve biological problems. Letter grading.

**M224. Machine Learning Applications in Genetics. (4)** (Same as Computer Science CM224 and Human Genetics CM224.) Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisites: Computer Science 32 or Program in Computing 10C with grade of C– or better, Mathematics 33A, and one course from Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Designed for engineering students as well as students from biological sciences and medical school. Introduction to computational analysis of genetic variation and computational interdisciplinary research in genetics. Topics include introduction to genetics, identification of genes involved in disease, inferring human population history, technologies for obtaining genetic information, and genetic sequencing. Focus on formulating interdisciplinary problems as computational problems and then solving those problems using computational techniques from statistics and computer science. Letter grading.

**M225. Computational Methods in Genomics. (4)** (Same as Computer Science M225 and Human Genetics M265.) Lecture, two and one half hours; discussion, two and one half hours; outside study, seven hours. Introduction to computational approaches in bioinformatics, genomics, and computational genetics and preparation for computational interdisciplinary research in genetics and genomics. Topics include genome analysis, regulatory genomics, association analysis, association study design, isolated and admixed populations, population substructure, human structural variation, model organisms, and genomic technologies. Computational techniques and methods include those from statistics and computer science. Letter grading.

**M226. Machine Learning in Bioinformatics. (4)** (Same as Biomathematics M226, Computer Science M226, and Human Genetics M226.) Lecture, four hours; outside study, eight hours. Enforced prerequisite: Computer Science 32 or Program in Computing 10C with grade of C– or better. Recommended: one course from Biostatistics 100A, 110A, Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, or Statistics 100A. Familiarity with probability, statistics, linear algebra, and algorithms expected. Designed for engineering students as well as students from biological sciences and medical school.

Biology has become data-intensive science. Bottleneck in being able to make sense of biological processes has shifted from data generation to statistical models and inference algorithms that can analyze these datasets. Statistical machine learning provides important toolkit in this endeavor. Biological datasets offer new challenges to field of machine learning. Examination of statistical and computational aspects of machine learning techniques and their application to key biological questions. Letter grading.

**275A. Applied Bioinformatics Lab for Biologists: Fundamentals. (2)** Laboratory, six hours (five weeks). Introduction to contemporary methods and techniques in bioinformatics that are used to analyze high-throughput genomic data. Topics include introduction to UNIX, Next Generation Sequence (NGS) data analysis, ChIP-seq, BS-seq and RNA-seq, and others. Letter grading.

**275B. Applied Bioinformatics Lab for Biologists: Intermediate. (2)** Laboratory, six hours (five weeks). Prerequisite: course 275A. Contemporary methods and techniques in bioinformatics that are used to analyze high-throughput genomic data. Topics include Galaxy server, R, MATLAB, Python, and variant calling. Letter grading.

**296. Seminar: Research Topics in Bioinformatics. (2)** Seminar, to be arranged; discussion, three hours. Advanced study and analysis of current research topics in bioinformatics. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research in Bioinformatics. (2 to 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**597. Preparation for MS Comprehensive Examination or PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**598. MS Thesis Research and Writing. (2 to 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**599. PhD Dissertation Research and Writing. (2 to 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

## BIOLOGICAL CHEMISTRY

David Geffen School of Medicine

310 Biomedical Sciences Research Building  
Box 951737  
Los Angeles, CA 90095-1737

Biological Chemistry  
310-825-4625

Siavash K. Kurdistani, MD, *Chair*  
John J. Colicelli, PhD, *Vice Chair*

## Overview

Biological chemistry has grown to include studies of cellular, molecular, and developmental biology, molecular genetics and genetic engineering, and many aspects of the health sciences. The research activities of the department include these areas as well as the classic topics of metabolism, enzymology, and biomole-

cular structure. Courses and seminar programs are designed to provide students with the necessary background and approach to encourage their continuing growth in these rapidly changing areas of science.

Interaction with other graduate programs provides access to scientists in a variety of related disciplines. Through its primary affiliation with the Geffen School of Medicine, the Department of Biological Chemistry is also involved in the basic education of students who will be physicians, dentists, and other health professionals. Many of these students become involved in laboratory research in the department. In part because of this breadth of experience students find careers in many aspects of basic and applied scientific research and education.

Biological Chemistry faculty information is available from the department.

## Biological Chemistry

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M140. Cancer Cell Biology. (5)** (Same as Molecular, Cell, and Developmental Biology M140.) Lecture, three hours; discussion, one hour. Prerequisite: Molecular, Cell, and Developmental Biology 165A. Cancer causes and genetics. Effects of cell transformation on cell growth and metabolism. Altered cell cycle, metabolism, and differentiation pathways in cancer cells. Tumor microenvironment contributions to cancer malignancy, including angiogenesis, metastasis, and immune system evasion. Letter grading.

**194. Research Group Seminars: Biological Chemistry. (2)** Seminar, two hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field or of research of faculty members or students. May be repeated for credit. P/NP grading.

**199. Directed Research or Senior Project in Biological Chemistry. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for maximum of 16 units. Individual contract required. P/NP or letter grading.

### Graduate Courses

**201A-201B. Biological Chemistry. (5-5)** Lecture, five hours. Preparation: organic chemistry. Open to non-medical students with consent of instructor. Primarily for first-year medical students and runs throughout School of Medicine's second semester. General biochemistry with emphasis on mammalian systems. Structure, function, and metabolism of major cellular components. To receive credit, both courses must be taken together in same academic year. In Progress (201A) and S/U (201B) grading.

**M202. Advanced Topics in Cryogenic Electron Microscopy. (3)** (Formerly numbered 202.) (Same as Molecular Biology M202.) Lecture, two hours; discussion, one hour. Students master advanced topics in membrane protein biology, and learn both theory and practice of cryogenic electron microscopy (cryo-EM) as emerging technology in structural biology. Cryo-EM methodologies covered include cryotomography, single particle reconstruction, electron crystallography, and microcrystal electron diffraction. Letter grading.

**204. Human Biological Chemistry and Nutrition Laboratory. (3)** Laboratory, four hours. Open to non-medical students with consent of instructor. Experiments illustrating techniques and procedures in medically related biochemistry and nutrition, analysis of experimental results. S/U or letter grading.

**205. Biological Chemistry and Nutrition Lecture: Dental Students. (6)** Lecture, six hours; computer laboratory. Designed for dental students. Biochemical and genetic factors influencing normal and disease states: structure and metabolism of cellular constituents, intermediary metabolism and its regulation, endocrine and neurobiochemical mechanisms, connective tissue/mineralization. Includes computer laboratory and self-instruction on dietary assessment in dentistry. S/U or letter grading.

**220A-220B-220C. Research Laboratory Rotations. (2 to 8 each)** Laboratory, two to eight hours. Students arrange apprenticeships in laboratories of one or more departmental faculty members and engage in research project under close faculty direction. Allows students to acquire in-depth laboratory experience in specific research areas and facilitates informed decision on their part in selection of thesis/research adviser. S/U grading.

**M229S. Seminar: Current Topics in Bioinformatics. (4)** (Same as Computer Science M229S and Human Genetics M229S.) Seminar, four hours; outside study, eight hours. Designed for graduate engineering students as well as students from biological sciences and medical school. Introduction to current topics in bioinformatics, genomics, and computational genetics and preparation for computational interdisciplinary research in genetics and genomics. Topics include genome analysis, regulatory genomics, association analysis, association study design, isolated and admixed populations, population substructure, human structural variation, model organisms, and genomic technologies. Computational techniques include those from statistics and computer science. May be repeated for credit with topic change. Letter grading.

**M234. Genetic Control of Development. (4)** (Same as Molecular, Cell, and Developmental Biology M234.) Lecture, four hours. Topics at forefront of molecular developmental biology, including problems in oogenesis and early embryogenesis, pattern formation, axis determination, nervous system development, cellular morphogenesis, and cell-cell and cell-matrix interactions. S/U or letter grading.

**M237. Cellular and Molecular Basis of Disease. (4)** (Same as Pathology M237.) Lecture, two hours; laboratory, two hours. Preparation: one course each in molecular biology, cell biology, and biological chemistry. Discussion of key issues in disease mechanisms, with emphasis on experiments leading to understanding of these mechanisms. Identification of important questions still remaining unanswered. Letter grading.

**248. Tumor Cell Biology. (2)** Seminar, one hour per month. Limited to students selected for one of following National Institutes of Health (NIH) training programs: tumor cell biology, tumor immunology, and training in immuno-targeted therapy for cancer. Formal presentation of research to other class members and faculty. Questions are asked during and after each presentation. Faculty provide each speaker with feedback on effectiveness of presentation. S/U grading.

**251A-251B-251C. Seminars: Transcriptional Regulation. (2-2-2)** Seminar, two hours. Advanced courses on mechanics of gene transcription in both eukaryotes and prokaryotes intended for students actively working or highly interested in transcription. S/U grading.



**M255. Mitochondria in Medicine, Biology, and Chemistry. (1)** (Same as Chemistry CM255.) Seminar, two hours every other week. Open to undergraduate and graduate science majors considering or currently conducting research in areas related to mitochondria. Large number of physiological and pathophysiological processes involve mitochondrial function and dysfunction. Focus on understanding how mitochondria metabolism, form, and function impact health and disease. Physiology and cell biology of healthy and dysfunctional mitochondria critically assessed at subcellular, cellular, tissue, and organismal levels. Topics include in-depth analyses of literature and critical evaluation of experimental design and methods of current research. May be repeated for credit. S/U grading.

**M259. Mechanisms of Gene Regulation. (4)** (Same as Chemistry CM259.) Lecture, four hours. Prerequisite: Chemistry 153B. RNA polymerase structures and mechanisms; promoter recognition and transcription cycle; mechanisms of activation; transcriptional poising and elongation control; Mediator of transcription; chromatin remodeling and modification; epigenetic regulation; cotranscriptional and transcription-coupled RNA processing; impact of transcription on mRNA processing and stability; nuclear export of mRNA. S/U or letter grading.

**266A-266B-266C. Seminars: Cell, Stem Cell, and Developmental Biology. (2-2-2)** Seminar, two hours. Open to undergraduate students with consent of instructor. Advanced courses in cell, stem cell, and developmental biology intended for graduate students working or rotating in laboratories of new cell and developmental biology home area. S/U grading.

**296. Research Seminar Series in Biological Chemistry. (1)** Seminar, one hour. Limited to biological chemistry students. Research presentations from second-through fourth-year graduate students related to their research. Designed to be highly interactive, with time for questions from fellow graduate students, postdoctoral students, and faculty members during and after presentations. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study and Research. (2 to 12)** Tutorial, to be arranged. S/U or letter grading.

**597. Preparation for Examinations. (2 to 4)** Tutorial, to be arranged. Individual study for PhD qualifying examinations or MS comprehensive examination. S/U grading.

**598. Preparation of MS Thesis. (4)** Tutorial, to be arranged. Preparation of research data and writing of MS thesis. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Preparation of research data and writing of PhD dissertation. S/U grading.

## BIOMEDICAL RESEARCH

*Interdisciplinary Minor  
College of Letters and Science*

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310-825-0237

**E-mail contact**

Karen M. Lyons, PhD, *Chair*

## Faculty Committee

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Andrew Goldstein, PhD (*Molecular, Cell, and Developmental Biology; Urology*)

Thomas G. Graeber, PhD (*Molecular and Medical Pharmacology*)

Aldons J. Lusic, PhD (*Human Genetics; Medicine; Microbiology, Immunology, and Molecular Genetics*)

Karen M. Lyons, PhD (*Molecular, Cell, and Developmental Biology; Orthopaedic Surgery*)

Megan M. McEvoy, PhD (*Society and Genetics*)

Carlos Portera-Cailliau, PhD (*Neurobiology*)

Margot E. Quinlan, PhD (*Chemistry and Biochemistry*)

Felix E. Schweizer, PhD (*Neurobiology*)

## Overview

The Biomedical Research minor is designed to incorporate research into undergraduate science education at UCLA. Applications may be submitted by any UCLA student who meets the admission requirements and has the potential to satisfy the requirements. Students explore the scientific questions and experimental approaches of biomedical research. Faculty members and staff facilitate early placement of students into laboratories on campus for independent research. Students are trained to analyze research literature, present their research in oral and poster formats, and appreciate the ethical, historical, and philosophical issues facing biomedical research.

## Undergraduate Minor Biomedical Research Minor Admission

Admission to the Biomedical Research minor is competitive, and application follows completion of Biomedical Research 5HA, 10H, Honors Collegium 70A, Molecular, Cell, and Developmental Biology 30H, or an approved alternative course. Applications (see the [minor website](#)) must be submitted no later than the first term of the junior year. Students must be in good academic standing and demonstrate a genuine interest in research. All degree requirements, including the specific requirements for this minor, must be fulfilled within the unit maximum set forth by the College of Letters and Science.

### The Minor

*Required Lower-Division Courses (9 units):* Biomedical Research 5HB (or an approved alternative course) and Molecular, Cell, and Developmental Biology 60.

*Required Upper-Division Courses (24 units):* (1) Sixteen units (four courses) of approved laboratory research through either course 198 or 199 (or an approved alternative course); (2) one his-

tory of science or philosophy of science course selected from History 179A, 179B, 180A, Neurobiology M169, Philosophy 124, 125, 137, or 155A (or an approved alternative course); and (3) Biomedical Research 193H and 194H, or the required journal club seminars (such as Chemistry and Biochemistry 193A) for students in the Integrated and Interdisciplinary Undergraduate Research Program, MARC, or UC LEADS.

Students are expected to file a senior research thesis after completion of their 16 research units and must participate in at least one conference in which they present their research. Up to 8 units of research may be applied toward departmental requirements for the major. The research project and thesis may be the same as those for departmental honors.

### Policies

Transfer credit for any required course is subject to approval. Students with a grade of less than B (3.0) in any minor course or a cumulative grade-point average of less than 3.0 are subject to dismissal from the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade. Successful completion of the minor is indicated on the transcript and diploma.

## Biomedical Research

### Lower-Division Courses

**1A. Science in Your Time. (5)** Lecture, three hours; discussion, one hour. Exploration of current topics in biology from media sources like news organizations and TED Talks, tracing information back to primary research. Students learn to critically evaluate primary sources. Discussion of bias in system producing primary research from undergraduate education through tenured faculty, and medicine and national science funding (National Institutes of Health and National Science Foundation). Addresses lack of Black and Latinx representation and its impact on science valued by current system. Letter grading.

**5HA. Biomedical Research: Concepts and Strategies. (4)** Lecture, three hours. Designed for freshmen/sophomores. Exploration of scientific concepts and experimental approaches through seminars by UCLA faculty members on their cutting-edge research. Topics may include areas of study such as cancer, stem cells, and infectious disease, as well as more basic research in cell and molecular biology. Letter grading.

**5HB. Biomedical Research: Essential Skills and Concepts. (4)** Lecture, three hours; discussion, one hour. Prerequisite: course 5HA. Designed for freshmen/sophomores. Exploration of scientific concepts and experimental approaches through seminars by UCLA faculty members on their cutting-edge research. Topics may include areas of study such as cancer, stem cells, and infectious disease, as well as more basic research in cell and molecular biology. Student investigation of one or more laboratories on campus and presentation of brief synopsis of single research project from one laboratory. Letter grading.

**10H. Research Training in Genes, Genetics, and Genomics. (6)** Lecture, 90 minutes; laboratory, six hours; computer laboratory, 90 minutes. Limited to 30 students. Basic training in biological research, including techniques in genetics, model organism, bioinformatics, functional genomics, electron microscopy.

Part of Undergraduate Research Consortium in Functional Genomics sponsored by Howard Hughes Medical Institute Professors Program. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100HA-100HB-100HC. Advanced Research in Genes, Genetics, and Genomics. (4-4-4)** Lecture, two hours; laboratory, 10 hours. Requisite: course 10H. Course 100HA is requisite to 100HB, which is requisite to 100HC. Designed for undergraduates who are committed to pursuing research. Advanced research training in genetics, cell and developmental biology, bioinformatics, functional genomics. Techniques include electron microscopy, other light microscopies, immunohistochemistry. Part of Undergraduate Research Consortium in Functional Genomics sponsored by Howard Hughes Medical Institute Professors Program. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore

topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**193H. Journal Club Seminars: Current Topics in Biomedical Research. (2)** Seminar, three hours. Limited to Biomedical Research minor students. Presentation and discussion of recent papers from primary literature in biosciences. Letter grading.

**194H. Research Group Seminars: Data Presentation in Biomedical Research. (2)** Seminar, three hours. Requisite: course 193H. Limited to Biomedical Research minor students. Preparation of oral presentations based on student laboratory research at UCLA. May be repeated for credit. Letter grading.

**199. Directed Biomedical Research. (4)** Tutorial, 12 hours. Limited to Biomedical Research minor students. Supervised individual research under guidance of faculty mentor. Culminating report describing progress and signed by student and faculty mentor required. May be repeated for credit. Individual contract required. Letter grading.

## BIostatISTICS

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**Biostatistics**

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**Sudipto Banerjee, PhD, Chair**

**Thomas R. Belin, PhD, Vice Chair**

## Faculty Roster

### Professors

Sudipto Banerjee, PhD

Thomas R. Belin, PhD

Ronald S. Brookmeyer, PhD

Catherine M. Crespi, PhD, *in Residence*

Michele Guindani, PhD

Grace H.J. Kim, PhD, *in Residence*

Gang Li, PhD

Jingyi Jessica Li, PhD

Honghu Liu, PhD

Christina M. Ramirez, PhD

Damla Senturk, PhD

Marc A. Suchard, PhD

Catherine A. Sugar, PhD, *in Residence*

Donatello Telesca, PhD

Robert E. Weiss, PhD

Weng Kee Wong, PhD

Hua Zhou, PhD

### Professors Emeriti

Abdelmonem A. Afifi, PhD

William G. Cumberland, PhD

Dorota M. Dabrowska, PhD

### Assistant Professors

Hilary J. Aralis, PhD, *in Residence*

Sean A. Darling-Hammond, PhD

Andrew J. Holbrook, PhD

### Adjunct Professors

David Elashoff, PhD

David W. Gjertson, PhD

Martin L. Lee, PhD

Jason Hall Moore, PhD

### Adjunct Associate Professor

Jin Zhou, PhD

### Adjunct Assistant Professor

Zhe Fei, PhD

## Overview

In recent years biostatistics has become one of the most stimulating areas of applied statistics. The field encompasses the methodology and theory of statistics as applied to problems in the life and health sciences. Biostatisticians are trained in the skilled application of statistical methods to the solution of problems encountered in public health and medicine. They collaborate with scientists in nearly every area related to health and have made major contributions to our understanding of AIDS, cancer, genetics, bioinformatics, and immunology, as well as other areas. Further, biostatisticians spend a considerable amount of time developing and evaluating the statistical methodology used in those projects. The Department of Biostatistics offers Master of Science (MS) and Doctor of Philosophy (PhD) degrees in Biostatistics and, through the Fielding School of Public Health, Biostatistics MPH (see [Public Health Schoolwide Programs](#)). All students receive a balanced education, blending theory and practice.

A degree in biostatistics prepares students for work in a wide variety of challenging positions in government, industry, and education. Graduates have found careers involving teaching, research, and consulting in such fields as medicine, public health, life sciences, and survey research. There has always been a strong demand for well-trained biostatisticians; graduates have had little difficulty finding employment well suited to their particular interests.

## Graduate Majors

### Biostatistics MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Master of Data Science in Health

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.



# Biostatistics

## Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100A. Introduction to Biostatistics. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Preparation: one biological or physical sciences course. Suitable for juniors/seniors. Limited to nonmajors. Not open for credit to students with credit for course 120. Students who have completed courses in statistics may enroll only with consent of instructor. Introduction to methods and concepts of statistical analysis. Sampling situations, with special attention to those occurring in biological sciences. Topics include distributions, tests of hypotheses, estimation, types of error, significance and confidence levels, sample size. P/NP or letter grading.

**100B. Introduction to Biostatistics. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Requisite: course 100A or Public Health 200A. Introduction to analysis of variance, linear regression, and correlation analysis. P/NP or letter grading.

**120. Biostatistics in Public Health. (5)** Lecture, three hours; discussion, one hour. Limited to Public Health majors. Not open for credit to students with credit for course 100A. Introduction to basic concepts in biostatistical analysis, presentation of data, and biostatistical aspects of design of public health studies. Special emphasis on application of biostatistical concepts to public health issues. Interpretation and communication of biostatistical findings is stressed. Focus on concepts and applications rather than mathematical theory. Letter grading.

**197. Individual Studies in Biostatistics. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Methods in Biostatistics A. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. First course in biostatistical methods intended for graduate students in biostatistics to prepare students pursuing careers as practicing biostatisticians. Prior knowledge of probability or statistics not assumed. Students should have working knowledge of calculus and be very comfortable with mathematical and algebraic reasoning. Introduction to basic concepts in analysis, presentation of data, and statistical aspects of design of studies. Special emphasis is given to application of statistical methods to public health, medical, biological, and health sciences. Interpretation and communication of statistical findings is stressed. Focus on methodology, applications, and concepts rather than mathematical statistics or probability theory. S/U or letter grading.

**200B. Methods in Biostatistics B. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Preparation: linear algebra. Requisite: course 200A. Designed for students pursuing graduate degrees in biostatistics. Theory and practice of linear regression analysis and analysis of variance (ANOVA). S/U or letter grading.

**200C. Methods in Biostatistics C. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Preferred preparation: courses 200A, 200B, and previous coursework in linear algebra. Designed for students pursuing graduate degrees in biostatistics. Generalized linear models, description, and analysis of discrete data with applications to public health. Students are trained to identify different types of discrete data; use statistical software package STATA to manage, summarize, and analyze data; use appropriate statistical techniques for analyzing public health data using generalized linear models; apply generalized estimating equations for analyzing longitudinal data; and write formal statistical report of data analysis for public health researcher. S/U or letter grading.

**201A. Topics in Applied Regression. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Requisites: courses 100A and 100B, or 200A and 200B. Designed for master's and doctoral students in fields outside biostatistics. Topics in linear regression and other related methods. When and how to use linear regression and related methods and how to properly interpret results. Heavy emphasis on practical application as opposed to theoretical development. S/U or letter grading.

**201B. Topics in Applied Regression. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Requisite: course 201A. Further studies in multiple linear regression, including applied multiple regression models, regression diagnostics and model assessment, factorial and repeated measure analysis of variance models, nonlinear regression, logistic regression, propensity scores, matching versus stratification, Poisson regression, and classification trees. Applications to biomedical and public health scientific problems. Letter grading.

**202A-202B. Mathematical Statistics A, B. (4-4)** Lecture, three hours; discussion, one hour. Designed primarily for students pursuing DrPh, MS, and PhD degrees in biostatistics. Introduction to main principles of probability, random variables, discrete and continuous distributions, multivariate distributions, and distributions of functions of random variables. S/U or letter grading. **202B.** Requisite: course 202A.

**202C. Theory of Bayesian Statistics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 200A, 200B, 202A, 202B, or equivalent, or consent of instructor. Mathematical underpinnings of Bayesian approach to statistical inference; closed form computations; computation; hierarchical models; model selection; hypothesis testing; prior specification; comparative inference; nonparametric methods. S/U or letter grading.

**203A. Introduction to Data Management and Statistical Computing. (4)** Lecture, three hours; laboratory, two hours. Prior knowledge of programming not assumed. Coverage of mechanics of converting data from whatever form it may arrive and preparing it for processing by statistical software. Letter grading.

**203B. Introduction to Data Science. (4)** Lecture, three hours; laboratory, two hours. Requisite: course 203A. Principles of data science. Topics include Health Insurance Portability and Accountability Act (HIPAA) and data ethics, databases and data retrieval, data merging and cleaning, data visualization and web presentation, reproducible research, collaborative research, cluster computing, and cloud computing. S/U or letter grading.

**M208. Introduction to Demographic Methods. (4)** (Same as Community Health Sciences M208, Economics M208, and Sociology M213A.) Lecture, four hours. Preparation: one introductory statistics course. Introduction to methods of demographic analysis. Topics include demographic rates, standardization, decomposition of differences, life tables, survival analysis, cohort analysis, birth interval analysis, models of population growth, stable populations, population projection, and demographic data sources. Letter grading.

**210. Statistical Methods for Categorical Data. (4)** Lecture, three hours; discussion, one hour. Requisites: course 100B, Statistics 100B. Statistical techniques for analysis of categorical data; discussion and illustration of their applications and limitations. S/U or letter grading.

**212. Distribution Free Methods. (4)** Lecture, three hours; discussion, one hour. Requisite: course 200B or Statistics 100B. Theory and application of distribution free methods in biostatistics. S/U or letter grading.

**213. Introduction to Computational Methods in Biostatistics. (4)** Lecture, three hours; discussion, one hour. Requisites: course 200B or Statistics 100B. Introduction to computational methods for biostatistical inference: simulation techniques, numerical integration, numerical optimization. S/U or letter grading.

**214. Finite Population Sampling. (4)** Lecture, three hours. Requisites: courses 200A, 200B, 202B. Theory and methods for sampling finite populations and estimating population characteristics. S/U or letter grading.

**M215. Survival Analysis. (4)** (Same as Biomathematics M281.) Lecture, three hours; discussion, one hour. Requisite: course 202B or Statistics 100C. Statistical methods for analysis of survival data. S/U or letter grading.

**216. Mathematical Methods for Biostatistics. (4)** Lecture, four hours. Requisites: Mathematics 31A, 31B, 33A. Designed and required for incoming first-year MS and PhD students. Introduction to specialized topics in advanced calculus, linear algebra, and scientific computing that are pertinent for subsequent courses in MS and PhD Biostatistical curriculum. Offers more in-depth understanding of mathematical rigor used in subsequent required courses such as Biostatistics 200B, 200C, 202A, 202B, and 202C. Emphasis on interplay between mathematical methods and scientific computing within R statistics computing environment. Offers detailed training on numerical algorithms used in linear algebra and probabilistic simulations commonly used by statisticians. Examination of several of the most common R functions used in statistical modeling such as regression analysis and random effects models. S/U or letter grading.

**219. Special Topics: Supplemental Topics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 202B. Topics in biostatistics not covered in other courses. Letter grading.

**230. Statistical Graphics. (4)** Lecture, three hours; laboratory, one hour. Requisite: course 200A (may be taken concurrently). Graphical data analysis emphasizes use of visual displays of quantitative data to gain insight into data structure by exploring patterns and relationships, and to enhance classical numerical analyses, especially assumption validity checking. Principles of graph construction, graphical methods, and perception issues. S/U or letter grading.

**231. Statistical Power and Sample Size Methods for Health Research. (4)** Lecture, three hours; laboratory, one hour. Requisites: courses 200A, 200B. Strongly recommended: variety of other graduate coursework. Sample size and power analysis methods for common study designs, including comparisons of means and proportions, ANOVA, time-to-event data, group sequential trials, linear regression, cluster randomized trials and multilevel data, with emphasis on designing randomized trials. Discussion also of multiple endpoints. S/U or letter grading.

**M232. Statistical Analysis of Incomplete Data. (4)** (Same as Biomathematics M232.) Lecture, three hours; discussion, one hour. Requisites: courses 200C, 202B or equivalent. Sources of incomplete data, recognizing familiar methods as solutions to missing-data problems, missing-data mechanisms, weighting and imputation strategies, model-based and design-based inference, likelihood-based and Bayesian methods, statistical computing strategies, multivariate models for diverse data types, nonignorable models, review of available statistical software. Emphasis on incorporating incomplete-data perspective into broader statistical-science framework. S/U or letter grading.

**233. Statistical Issues in Global Health. (4)** Lecture, three hours. Requisite: course 200C. Recommended requisite or corequisite: course M215. Consideration of statistical issues in addressing contemporary global health challenges. Topics include statistical methods for analyzing public health surveillance data, methods and models for measuring and forecasting health of

populations, epidemic modeling, agent-based modeling, evaluating and addressing sampling issues in public health data, and design and analysis of large-scale public health interventions such as vaccine trials and cancer screening programs. Applications to both infectious and noninfectious diseases. Case studies include HIV/AIDS, cancer, pandemic flu, and topical global health challenges such as recent outbreaks of emerging pathogens. S/U or letter grading.

**M234. Applied Bayesian Inference. (4)** (Same as Biomathematics M234.) Lecture, three hours; laboratory, one hour. Requisite: course 200B or another substantial regression course. Bayesian approach to statistical inference, with emphasis on biomedical applications and concepts rather than mathematical theory. Topics include large sample Bayes inference from likelihoods, noninformative and conjugate priors, empirical Bayes, Bayesian approaches to linear and nonlinear regression, model selection, Bayesian hypothesis testing, and numerical methods. S/U or letter grading.

**M235. Causal Inference. (4)** (Same as Psychiatry M232.) Lecture, three hours; discussion, one hour. Requisites: courses 200C, 202B, or equivalent. Philosophical foundations, logical paradoxes, decision analysis, selection bias, confounding, ecological paradox, historical development, potential outcomes, Rubin causal model, propensity scores, competing perspectives on path analysis and graphical/structural-equation models, experiments with noncompliance, principal stratification, decision making when causality is disputed, role of ethics in decision making. S/U or letter grading.

**M236. Longitudinal Data. (4)** (Same as Biomathematics M282.) Lecture, three hours; laboratory, one hour. Requisite: course 200B or another substantial regression course. Analysis of continuous responses for which multivariate normal model may be assumed. Students learn how to think about longitudinal data, plot data, and how to specify mean and variance of longitudinal response. Advanced topics include introductions to clustered, multivariate, and discrete longitudinal data. S/U or letter grading.

**M237. Applied Genetic Modeling. (4)** (Same as Biomathematics M207B and Human Genetics M207B.) Lecture, three hours; laboratory, one hour. Requisites: courses 200B, 202B (may be taken concurrently) or equivalent coursework or consent of instructor. Covers basic genetic concepts (prior knowledge of human genetics not required). Topics include statistical methodology underlying genetic analysis of both quantitative and qualitative complex traits. Laboratory for hands-on computer analysis of genetic data; laboratory reports required. Course complements M272; students may take either and are encouraged to take both. S/U or letter grading.

**M238. Methodology of Clinical Trials. (4)** (Same as Biomathematics M284.) Lecture, three hours; discussion, one hour. Requisite: course 200B. Introductory material on design and analysis of clinical trials, including adaptive methods for early and late randomized trials. S/U or letter grading.

**M239. Mathematical and Statistical Phylogenetics. (4)** (Same as Biomathematics M211 and Human Genetics M211.) Lecture, three hours; laboratory, one hour. Preparation: undergraduate course in statistics and probability. Theoretical models in molecular evolution focusing on phylogenetic techniques. Topics include evolutionary tree reconstruction methods, studies of viral evolution, phylogeography and coalescent approaches. Examples provided from evolutionary biology and evolutionary medicine, with unique focus on implications for human disease processes. Laboratory for hands-on computer analysis of sequence data. S/U or letter grading.

**241. Spatial Modeling and Data Analysis for Health Sciences. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 200A, 200B, 202A, 202B. Introduction of various methods for exploring, modeling, and analyzing spatially referenced datasets, with emphasis on environmental/natural sciences and public health. Statistical theory and foundations for carrying out principled and scientifically rigorous inference on spatially referenced datasets and computational methods and algorithms for executing statistical modeling in practice. Practical examples and applications

demonstrated using open-source statistical software environment R and datasets from diverse fields, such as public health, environmental health, natural sciences, and economics. Letter grading.

**244. Master's Seminar and Research Resources for Graduating Biostatistics MS Students. (4)** Seminar, three hours. Introduction to resources for finding statistical literature. Discussion of principles of making statistical presentations and how to write statistical reports, including writing abstracts and choice of key words. Discussion of journal article preparation and submission format and refereeing process to help students make progress on their master's reports. Letter grading.

**245. Advanced Seminar: Biostatistics. (2)** Seminar, two hours. Requisites: courses 200C, 202B. Current research in biostatistics. May be repeated for credit. S/U grading.

**246. Doctoral Students Seminar. (2)** Seminar, two hours. Requisites: courses 200C, 202B. Limited to Biostatistics majors. Biostatistics doctoral seminar, with presentations given by students on current research topics in biostatistics and feedback provided by instructor and peers. S/U grading.

**250A. Linear Statistical Models. (4)** Lecture, three hours; discussion, one hour. Recommended preparation: statistical theory and linear algebra. Designed for students pursuing graduate degrees in biostatistics. Theoretical foundation for linear models with applications to different types of problems in biomedical field. Emphasis on mathematical training and understanding of theory and applications of linear models. Letter grading.

**250B. Linear Statistical Models. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 200A, 200B, 200C, 250A. Theoretical foundation for linear models with applications to different types of problems in biomedical field. Emphasis on mathematical training and understanding of theory of linear models, including linear mixed models and topics that may include theory and tests for various types of model misspecification, such as heteroscedasticity and outliers. Other selected topics may include ridge regression, Bayesian estimation in linear models, REML, prediction, and model selection issues. Some data analysis, instructions for STATA provided. Letter grading.

**250C. Multivariate Biostatistics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 250A, 250B. Recommended requisites: courses 255A, 255B. Theory and methods for multivariate analysis with non-exclusive focus on biomedical applications. Topics from multivariate linear models, graphical models, component analysis, factor analysis, clustering, discriminant analysis, models for longitudinal and clustered data. S/U or letter grading.

**255A. Advanced Probability and Statistics. (4)** Lecture, three hours; discussion, one hour. Requisites: course 202A or equivalent, Mathematics 131A or consent of instructor. Survey of probability theory, with special emphasis on applications to biostatistics. Topics include probability spaces and random variables, generating functions, conditioning, discrete-time martingales, applications to finite sample analysis of statistical procedures. S/U or letter grading.

**255B. Advanced Probability and Statistics. (4)** Lecture, three hours; discussion, one hour. Requisites: course 255A or consent of instructor, Mathematics 131A. Survey of advanced topics in probability and mathematical statistics, with special emphasis on applications to biostatistics. Topics include laws of large numbers, central limit theorems, basic concepts from stochastic processes, and applications to large sample theory in biostatistics. S/U or letter grading.

**M257. Computational Methods for Biostatistical Research. (4)** (Formerly numbered 257.) (Same as Biostatistics M257.) Lecture, three hours; discussion, one hour. Requisites: course 250A or Statistics 100C, Mathematics 115A. Preparation for quantitative research in statistics and data sciences. Numerical analysis and hands-on computing techniques for handling big data. Numerical analysis topics include computer arithmetic, solving linear equations, Cholesky factorization, QR factorization, regression computations, ei-

genvalue problems, iterative solvers, numerical optimization, and design and analysis of statistical simulation experiments. Computing techniques include basics of R programming, reproducible research using R and RStudio, collaborative research, parallel computing, and cloud computing. No prior knowledge of R assumed. S/U or letter grading.

**270. Stochastic Processes. (4)** Lecture, three hours; discussion, one hour. Requisites: course 202B or Mathematics 170B; Mathematics 131A. Recommended requisite: course 255A. Overview of common stochastic process models arising in biostatistical applications. Topics include discrete and continuous time martingales, discrete and continuous time Markov chains, renewal processes and diffusion processes. S/U or letter grading.

**M272. Theoretical Genetic Modeling. (4)** (Same as Biomathematics M207A and Human Genetics M207A.) Lecture, three hours; discussion, one hour. Requisites: Mathematics 115A, 131A, Statistics 100B. Mathematical models in statistical genetics. Topics include population genetics, genetic epidemiology, gene mapping, design of genetics experiments, DNA sequence analysis, and molecular phylogeny. S/U or letter grading.

**273. Machine Learning. (4)** Lecture, three hours. Requisites: course 200C and Mathematics 115A. Covers theoretical underpinnings and practical applications of modern machine-learning and other data-intensive algorithms, including support vector machines and random forest algorithms. Students learn to download and use variety of software tools that are available for free on web. S/U or letter grading.

**274. Topics in Statistical Machine Learning. (4)** Lecture, four hours. Requisites: courses 200A, 200B. Designed for PhD students. Topics in machine learning with focus on both statistics and applications. Letter grading.

**275. Advanced Survival Analysis. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 250A, 255. Time-to-event data arise in many fields, such as medicine, reliability theory, demography, sociology, economics, and astronomy. Overview of common stochastic process models and methods for analysis of such data. Examples include continuous-time Markov chain and semi-Markov models, and frailty and copula models. S/U or letter grading.

**276. Inferential Techniques that Use Simulation. (4)** Lecture, three hours; discussion, one hour. Requisites: Statistics 200A, 200B. Recommended: course 213. Theory and application of recently developed techniques for statistical inference that use computer simulation. Topics include bootstrap, multiple imputation, data augmentation, stochastic relaxation, and sampling/importance resampling algorithm. S/U or letter grading.

**277. Robustness and Modern Nonparametrics. (4)** Lecture, three hours. Requisite: Statistics 200A. Topics include M-estimation, influence curves, breakdown point, bootstrap, jackknife, smoothing, nonparametric regression, generalized additive models, density estimation. S/U or letter grading.

**279. Optimal Design Theory and Application. (4)** Lecture, three hours. Preparation: basic programming skills. Requisite: Statistics 200B. Presentation of design methodology for regression problems, with applications to biostatistical problems. Letter grading.

**M280. Statistical Computing. (4)** (Same as Biomathematics M280 and Statistics M230.) Lecture, three hours. Requisites: Mathematics 115A, Statistics 100C. Introduction to theory and design of statistical programs: computing methods for linear and nonlinear regression, dealing with constraints, robust estimation, and general maximum likelihood methods. Letter grading.

**285. Advanced Topics: Recent Developments. (4)** Lecture, three hours; discussion, one hour. Advanced topics and developments in biostatistics not covered in Biostatistics M210 through 219 or 270 through 276 or in other courses. Possible topics include time-series analysis, classification procedures, correspondence analysis, etc. S/U or letter grading.

**296. Seminar: Research Topics in Biostatistics. (1 to 4)** Seminar, two hours. Advanced study and analysis of current topics in biostatistics. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. Apprentices meet with faculty and other apprentice teachers to discuss both substance of curriculum and appropriate approaches to teaching, learning, and evaluation. May be repeated for credit. S/U grading.

**400. Field Studies in Biostatistics. (4)** Fieldwork, to be arranged. Field observation and studies in selected community organizations for health promotion or medical care. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward MS minimum course requirement; 4 units may be applied toward 44-unit minimum total required for MPH degree. Letter grading.

**402A. Principles of Biostatistical Consulting. (2)** Lecture, one hour; discussion, one hour. Requisites: courses 100B or 200B, and 200A. Presentation of structural format for statistical consulting. Role of statistician and client. Reviews of actual statistician/client interactions and case studies. S/U or letter grading.

**402B. Biostatistical Consulting. (4)** Discussion, two hours; laboratory, two hours. Requisite: course 402A. Principles and practices of biostatistical consulting. May be repeated for credit. S/U grading.

**M403B. Computer Management and Analysis of Health Data Using SAS. (4)** (Same as Epidemiology M403.) Lecture, two hours; laboratory, two hours. Introduction to practical issues in management and analysis of health data using SAS programming language. Cross-sectional and longitudinal population-based data sets to be used throughout to illustrate principles of data management and analysis for addressing biomedical and health-related hypotheses. Letter grading.

**406. Applied Multivariate Biostatistics. (4)** Lecture, three hours; laboratory, one hour. Preparation: at least two upper-division research courses. Requisite: course 100B. Use of multiple regression, principal components, factor analysis, discriminant function analysis, logistic regression, and canonical correlation in biomedical data analysis. S/U (optional only for non-division majors) or letter grading.

**409. Doctoral Statistical Consulting Seminar. (2)** Seminar, one hour; laboratory, four hours. Designed for doctoral students. Development of experience and expertise in collaborating with faculty in Schools of Public Health and Medicine. Students meet with investigators and develop design and protocol for data analysis, implement data protocol when data is obtained, and write up study with lead investigators. S/U grading.

**410. Statistical Methods in Clinical Trials. (4)** Lecture, three hours; discussion, two hours. Requisites: courses 100A, 100B. Design of studies in animals to assess antitumor response; randomization, historical controls, p-values, size of study, and stratification in human experimentation; various types of controls; prognostic factors, survivorship studies, and design of prognostic studies; organization of clinical trials—administration, comparability, protocols, clinical standards, data collection and management. S/U (optional only for nonmajors) or letter grading.

**411. Analysis of Correlated Data. (4)** Lecture, three hours. Requisite: course 200A. Statistical techniques designed for analysis of correlated data, including cluster samples, multilevel models, and longitudinal studies. Computations done on SAS and STATA. Mixed models and generalized estimation equations (GEE). Emphasis on application, not theory. S/U or letter grading.

**413. Introduction to Pharmaceutical Statistics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 100A, 100B. Exploration of various types of statistical techniques used in pharmaceutical and related industries. Topics include bioassay and other

assay techniques (e.g., ELISAs and FACs analysis), quality control techniques, and pharmacokinetic and pharmacodynamic modeling. S/U or letter grading.

**414. Principles of Sampling. (4)** Lecture, three hours; discussion, one hour. Requisites: course 100B, Epidemiology 100. Statistical aspects of design and implementation of sample survey. Techniques for analysis of data, including estimates and standard errors. Avoiding improper use of survey data. Letter grading.

**495. Teacher Preparation in Biostatistics. (2)** Seminar, two hours. Preparation: 18 units of cognate courses in area of specialization. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**595. Effective Integration of Biostatistical Concepts in Public Health Research. (4)** Tutorial, to be arranged. Enforced requisites: courses 110A, 110B, 400, 402A. Students meet weekly with their adviser and also work independently on their proposed projects. Course fosters ability of students to select relevant design and analysis techniques, synthesize knowledge, and apply insights to address public health problems. Oral examination and written report describing how students have used biostatistical methods to assess data from public health study required. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Limited to graduate students. Individual guided studies under direct faculty supervision. Only 4 units may be applied toward MPH and MS minimum total course requirement. May be repeated for credit. Letter grading.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research. (2 to 12)** Tutorial, to be arranged. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## BRAIN AND BEHAVIORAL HEALTH

*Interdisciplinary Minor  
College of Letters and Science*

B7-357 Semel Institute  
Box 951759  
Los Angeles, CA 90095-1759

**Brain and Behavioral Health**

310-825-8514

**E-mail contact**

Andrew J. Fuligni, PhD, *Chair*

### Faculty Committee

Robert M. Bilder, PhD (*Psychiatry and Biobehavioral Sciences, Psychology*)

Christopher J. Evans, PhD (*Psychiatry and Biobehavioral Sciences, Psychology*)

Andrew J. Fuligni, PhD (*Psychiatry and Biobehavioral Sciences, Psychology*)

Adriana Galván, PhD (*Psychiatry and Biobehavioral Sciences, Psychology*)

Christina G.S. Palmer, PhD (*Human Genetics, Psychiatry and Biobehavioral Sciences, Society and Genetics*)

Tara S. Peris, PhD (*Psychiatry and Biobehavioral Sciences*)

## Overview

Issues of brain and behavioral health have become central to the understanding of human development, well-being, and productivity. Sometimes called translational science, the focus on evidence-based prevention and treatment programs at multiple levels—individual, family, school, community—has become a primary focus of the behavioral health fields. Key features of the approach include an understanding of the basic science of the brain and behavioral issues at hand, their interaction with contextual factors, the development of programs and policies derived directly from that science, and the rigorous evaluation of those programs and policies.

## Undergraduate Minor

### Brain and Behavioral Health Minor

The minor offers students the opportunity to learn about how to apply scientific advances to the promotion of brain and behavioral health across the lifespan. The Brain and Behavioral Health minor is intended to supplement the education of undergraduate students enrolled in the Cognitive Science, Human Biology and Society, Neuroscience, Psychobiology, and Psychology majors. As a minor, the program is able to take advantage of the core knowledge gained by students from their majors and focus on how to use that knowledge to develop programs and policies focusing on brain and behavioral health. The program offers students depth in a topic (e.g., autism, dementia) that is required when trying to solve a pressing problem.

### Admission

To enter the minor students must have an overall grade-point average of 2.7 or better, have completed Psychiatry 79, and submit an application demonstrating interest in the application of science to improving brain and behavioral health by the end of the fall quarter of the student's third year.

### The Minor

*Required Lower-Division Courses (5 units):* Psychiatry 79.

*Required Upper-Division Courses (24 units):* (1) Psychiatry 174 or 176; (2) three upper-division electives selected from Neuroscience CM123, C177, M187, 192CX, Physiological Sciences 140, Psychiatry 174 or 176 (whichever course was not applied above), 175, M182, Psychology M107, 127B, 129C, 152, 161, 164, Society and Genetics 102, 141, M144; (3) two capstone courses: Psychiatry 177A, 177B.

### Policies

Each course must be completed with a grade of C or better.

A minimum of 20 units applied toward the minor requirements must be in addition to units

applied toward major requirements or another minor.

Each minor course must be taken for a letter grade. Successful completion of the minor is indicated on the transcript and diploma.

## CHEMICAL AND BIOMOLECULAR ENGINEERING

*Henry Samueli School of Engineering and Applied Science*

5531 Boelter Hall  
Box 951592  
Los Angeles, CA 90095-1592

**Chemical and Biomolecular Engineering**  
310-825-2046  
**Department e-mail**

Panagiotis D. Christofides, PhD, *Chair*  
Philippe Sautet, PhD, *Vice Chair*  
Dante A. Simonetti, PhD, *Vice Chair*

### Faculty Roster

#### Professors

Jane P. Chang, PhD (*William Frederick Seyer Professor of Materials Electrochemistry*)  
Panagiotis D. Christofides, PhD (*William D. Van Vorst Professor of Chemical Engineering Education*)  
Yoram Cohen, PhD  
James F. Davis, PhD  
Vasilios I. Manousiouthakis, PhD  
Harold G. Monbouquette, PhD  
Stanley J. Osher, PhD  
Philippe Sautet, PhD (*Levi James Knight, Jr. Term Professor of Excellence*)  
Yi Tang, PhD (*Ralph M. Parsons Foundation Professor of Chemical Engineering*)

#### Professors Emeriti

Vijay K. Dhir, PhD  
Robert F. Hicks, PhD  
Eldon L. Knuth, PhD  
James C. Liao, PhD  
Yunfeng Lu, PhD  
Selim M. Senkan, PhD  
Vincent L. Vilker, PhD  
A.R. Frank Wazzan, PhD, *Dean Emeritus*

#### Associate Professors

Irene A. Chen, PhD  
Yvonne Y. Chen, PhD  
Dante A. Simonetti, PhD

#### Assistant Professors

Nasim Annabi, PhD  
Carissa N. Eisler, PhD  
Yuzhang Li, PhD  
Carlos G. Morales-Guio, PhD  
Junyoung O. Park, PhD  
Joseph Peterson, PhD  
Samanvaya Srivastava, PhD  
Thaiesha A. Wright, PhD

### Overview

The Department of Chemical and Biomolecular Engineering conducts undergraduate and graduate programs of teaching and research that focus on the areas of biomolecular engineering, systems engineering, and advanced materials processing and span the general themes of energy/environment and nanoengineering. Aside from the fundamentals of chemical engineering (thermodynamics, transport phenomena, kinetics, reactor engineering and separations), particular emphasis is given to air pollution, biomaterials, bionanotechnology, chemical vapor deposition, environmental modeling, membrane science, metabolic engineering, molecular simulation, plasma processing, pollution prevention, polymer engineering, process systems engineering, protein engineering, semiconductor processing, and synthetic biology.

Students are trained in the fundamental principles of these fields while acquiring sensitivity to society's needs—a crucial combination needed to address the challenge of continued industrial growth and innovation in an era of economic, environmental, and energy constraints.

The undergraduate curriculum leads to a Bachelor of Science (BS) in Chemical Engineering and includes the standard core curriculum, as well as biomedical engineering, biomolecular engineering, environmental engineering, and semiconductor manufacturing engineering options. The department also offers graduate courses and research leading to Master of Science (MS) and Doctor of Philosophy (PhD) degrees. Both graduate and undergraduate programs closely relate teaching and research to important industrial problems.

### Undergraduate Major

#### Chemical Engineering BS

The Chemical Engineering curricula offer a high-quality, professionally oriented education in modern chemical engineering. The biomedical engineering, biomolecular engineering, environmental engineering, and semiconductor manufacturing engineering options provide students with an opportunity for exposure to a subfield of chemical and biomolecular engineering. In all cases, balance is sought between engineering science and practice.

The chemical engineering program is accredited by the Engineering Accreditation Commission of **ABET**.

#### Capstone Major

The Chemical Engineering major is a designated capstone major. The capstone project requires students to first work individually and learn how to integrate chemical engineering fundamentals taught in prior required courses; they then work in groups to produce a paper design of a realistic chemical process using appropriate software tools. Graduates should be able to design a chemical or biological system, component, or process that meets technical and economical design objectives, with consideration of environmental, social, and ethical

issues, as well as sustainable development goals. In addition, they should be able to apply their knowledge of mathematics, physics, chemistry, biology, and chemical and biological engineering to analysis and design of chemical and biochemical processes and products; function on multidisciplinary teams; identify, formulate, and solve complex chemical and biological engineering problems; and communicate effectively, both orally and in writing.

#### Learning Outcomes

The Chemical Engineering major has the following learning outcomes:

- Application of knowledge of mathematics, physics, chemistry, biology, and chemical and biological engineering, especially to integration of molecular- to micro-scale information into macro-scale analysis and design of chemical and biochemical processes and products
- Design of a chemical or biological system, component, or process that meets technical and economical design objectives with consideration of environmental, social, and ethical issues, as well as sustainable development goals
- Identification, formulation, and solution of complex chemical and biological engineering problems
- Function as a productive member of a multidisciplinary team
- Effective oral and written communication

### Requirements

#### Chemical Engineering Core Option

##### Preparation for the Major

*Required:* Chemical Engineering 10; Chemistry and Biochemistry 20A, 20B, 20L, 30A, 30AL, 30B; Civil and Environmental Engineering M20 or Mechanical and Aerospace Engineering M20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL.

##### The Major

*Required:* Chemical Engineering 45, 100, 101A, 101B, 101C, 102A, 102B, 103, 104A, 104B, 106, 107, 109; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone analysis and design courses (Chemical Engineering 108A, 108B); and two elective courses (8 units) from Chemical Engineering 110, C111, C112, 113, CM114, C115, C116, C118, C119, C121, C125, C128, C135, C140.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

#### Biomedical Engineering Option

##### Preparation for the Major

*Required:* Chemical Engineering 10; Chemistry and Biochemistry 20A, 20B, 20L, 30A, 30AL, 30B; Civil and Environmental Engineering M20 or Mechanical and Aerospace Engineering M20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL.



**The Major**

*Required:* Chemical Engineering 45, 100, 101A, 101B, 101C, 102A, 102B, 103, 104A, 104B, 106, 107, 109, CM145; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone analysis and design courses (Chemical Engineering 108A, 108B); and one biomedical elective course (4 units) from Bioengineering C105, C183, Chemical Engineering C112, Chemistry and Biochemistry C105, 153A, or C159 (another chemical engineering elective may be substituted for one of these with approval of the faculty adviser).

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

**Biomolecular Engineering Option****Preparation for the Major**

*Required:* Chemical Engineering 10; Chemistry and Biochemistry 20A, 20B, 20L, 30A, 30AL, 30B; Civil and Environmental Engineering M20 or Mechanical and Aerospace Engineering M20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL.

**The Major**

*Required:* Chemical Engineering 45, 100, 101A, 101B, 101C, 102A, 102B, 104A, 104D, 107, 109, C115, C125, CM145; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone analysis and design courses (Chemical Engineering 108A, 108B); and one biomolecular elective course (4 units) from Bioengineering C105, C183, Chemical Engineering C112, Chemistry and Biochemistry C105, 153A, or C159 (another chemical engineering elective may be substituted with approval of the faculty adviser).

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

**Environmental Engineering Option****Preparation for the Major**

*Required:* Chemical Engineering 10; Chemistry and Biochemistry 20A, 20B, 20L, 30A, 30AL, 30B; Civil and Environmental Engineering M20 or Mechanical and Aerospace Engineering M20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL.

**The Major**

*Required:* Chemical Engineering 45, 100, 101A, 101B, 101C, 102A, 102B, 103, 104A, 104B, 106, 107, 109; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone analysis and design courses (Chemical Engineering 108A, 108B); and two elective courses (8 units) from Chemical Engineering 113, C118, C119, C121, C128, C135, C140 (another chemical engineering elective may be substituted with approval of the faculty adviser).

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

**Semiconductor Manufacturing Engineering Option****Preparation for the Major**

*Required:* Chemical Engineering 10; Chemistry and Biochemistry 20A, 20B, 20L, 30A, 30AL, 30B; Civil and Environmental Engineering M20 or Mechanical and Aerospace Engineering M20; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL.

**The Major**

*Required:* Chemical Engineering 45, 100, 101A, 101B, 101C, 102A, 102B, 103, 104A, 104C, 104CL, 106, 107, 109, C116; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone analysis and design courses (Chemical Engineering 108A, 108B); and one elective course (4 units) from chemical engineering or from Materials Science and Engineering 104, 120, 121, 122, or 150.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

**Graduate Major****Chemical Engineering MS, PhD****Requirements**

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

**Chemical Engineering****Lower-Division Courses**

**2. Technology and Environment. (4)** Lecture, four hours; outside study, eight hours. Natural and anthropogenic flows of materials at global and regional scales. Case studies of natural cycles include global warming (CO<sub>2</sub> cycles), stratospheric ozone depletion (chlorine and ozone cycles), and global nitrogen cycles. Flow of materials in industrial economies compared and contrasted with natural flows; presentation of lifecycle methods for evaluating environmental impact of processes and products. P/NP or letter grading.

**10. Introduction to Chemical and Biomolecular Engineering. (1)** Lecture, one hour; outside study, two hours. General introduction to field of chemical and biomolecular engineering. Description of how chemical and biomolecular engineering analysis and design skills are applied for creative solution of current technological problems in production of microelectronic devices, design of chemical plants for minimum environmental impact, application of nanotechnology to chemical sensing, and genetic-level design of recombinant microbes for chemical synthesis. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**45. Biomolecular Engineering Fundamentals. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Recommended prerequisites: Chemistry 20A, 20L, 30A, 30L. Intended for those students who have not taken Life Sciences 2, 3, and Chemistry 153A. Fundamentals of modern biomolecular engineering. Topics include structure and function of biomolecules, central dogma of molecular biology, cellular information and energy processing, and experimental methods, with strong emphasis on applications in medicine, industry, and bioenergy. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

**Upper-Division Courses**

**100. Fundamentals of Chemical and Biomolecular Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisites: Chemistry 20B, 20L (not enforced), Mathematics 32B (may be taken concurrently), Physics 1A. Introduction to analysis and design of industrial chemical processes. Material and energy balances. Introduction to programming in MATLAB. Letter grading.

**101A. Transport Phenomena I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisites: Mathematics 33A, 33B. Enforced corequisite: course 109. Introduction to analysis of fluid flow in chemical, biological, materials, and molecular processes. Fundamentals of momentum transport, Newton law of viscosity, mass and momentum conservation in laminar flow, Navier/Stokes equations, and engineering analysis of flow systems. Letter grading.

**101B. Transport Phenomena II: Heat Transfer. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 101A. Introduction to analysis of heat transfer in chemical, biological, materials, and molecular processes. Fundamentals of thermal energy transport, molecular-level heat transfer in gases, liquids, and solids, forced and free convection, radiation, and engineering analysis of heat transfer in process systems. Letter grading.

**101C. Mass Transfer. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 101B. Introduction to analysis of mass transfer in systems of interest to chemical engineering practice. Fundamentals of mass species transport, Fick law of diffusion, diffusion in chemically reacting flows, interphase mass transfer, multicomponent systems. Letter grading.

**102A. Thermodynamics I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Introduction to thermodynamics of chemical and biological processes. Work, energy, heat, and first law of thermodynamics. Second law, extremum principles, entropy, and free energy. Ideal and real gases, property evaluation. Thermodynamics of flow systems. Applications of first and second laws in biological processes and living organisms. Letter grading.

**102B. Thermodynamics II. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 102A. Fundamentals of classical and statistical thermodynamics in chemical and biological sciences. Phase equilibria in single and multicomponent systems. Thermodynamics of ideal and nonideal solutions. Chemical reaction equilibria. Statistical ensembles and partition functions. Statistical thermodynamics of ideal gases. Intermolecular interactions and liquid state. Thermodynamics of polymers and biological macromolecules. Letter grading.

**103. Separation Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisites: courses 100, 101B. Application of principles of heat, mass, and momentum transport to design and operation of separation processes such as distillation, gas absorption, filtration, and reverse osmosis. Letter grading.



**104A. Chemical and Biomolecular Engineering Laboratory I. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Enforced requisite: course 100. Enforced corequisite: course 101B. Recommended: course 102B. Investigation of basic transport phenomena in 10 predetermined experiments, collection of data for statistical analysis and individually written technical reports and group presentations. Design and performance of one original experimental study involving transport, separation, or another aspect of chemical and biomolecular engineering. Basic statistics: mean, standard deviation, confidence limits, comparison of two means and of multiple means, single and multiple variable linear regression, and brief introduction to factorial design of experiments. Oral and poster presentations. Technical writing of sections of technical reports and their contents; writing clearly, concisely, and consistently; importance of word choices and punctuation in multicultural engineering environment and of following required formatting. Letter grading.

**104B. Chemical and Biomolecular Engineering Laboratory II. (6)** Lecture, four hours; laboratory, eight hours; outside study, four hours; other, two hours. Enforced requisites: courses 101C, 103, 104A. Course consists of four experiments in chemical engineering unit operations, each of two weeks duration. Students present their results both written and orally. Written report includes sections on theory, experimental procedures, scaleup and process design, and error analysis. Letter grading.

**104C. Semiconductor Processing. (3)** Lecture, four hours; outside study, five hours. Enforced requisite: course 101C. Enforced corequisite: course 104CL. Basic engineering principles of semiconductor unit operations, including fabrication and characterization of semiconductor devices. Investigation of processing steps used to make CMOS devices, including wafer cleaning, oxidation, diffusion, lithography, chemical vapor deposition, plasma etching, metallization, and statistical design of experiments and error analysis. Presentation of student results in both written and oral form. Letter grading.

**104CL. Semiconductor Processing Laboratory. (3)** Laboratory, four hours; outside study, five hours. Enforced requisite: course 101C. Enforced corequisite: course 104C. Series of experiments that emphasize basic engineering principles of semiconductor unit operations, including fabrication and characterization of semiconductor devices. Investigation of processing steps used to make CMOS devices, including wafer cleaning, oxidation, diffusion, lithography, chemical vapor deposition, plasma etching, and metallization. Hands-on device testing includes transistors, diodes, and capacitors. Letter grading.

**104D. Molecular Biotechnology Laboratory: From Gene to Product. (6)** Lecture, two hours; laboratory, eight hours; outside study, eight hours. Enforced requisites: courses 101C, C125. Integration of molecular and engineering techniques in modern biotechnology. Cloning of protein-coding gene into plasmid, transformation of construct into *E. coli*, production of gene product in bioreactor, downstream processing of bioreactor broth to purify recombinant protein, and characterization of purified protein. Letter grading.

**106. Chemical Reaction Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 100, 101C, 102B. Fundamentals of chemical kinetics and catalysis. Introduction to analysis and design of homogeneous and heterogeneous chemical reactors. Letter grading.

**107. Process Dynamics and Control. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 101C, 103 (or C125), 106 (or C115). Principles of dynamics modeling and start-up behavior of chemical engineering processes. Chemical process control elements. Design and applications of chemical process computer control. Letter grading.

**108A. Process Economics and Analysis. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 103 (or C125), 104A, 106 (or C115). Integration of chemical engineering fundamentals such as transport phenomena, thermodynamics, separation operations, and reaction

engineering and simple economic principles for purpose of designing chemical processes and evaluating alternatives. Letter grading.

**108B. Chemical Process Computer-Aided Design and Analysis. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 103 (or C125), 106 (or C115), 108A, Civil and Environmental Engineering M20 (or Mechanical and Aerospace Engineering M20). Introduction to application of some mathematical and computing methods to chemical engineering design problems; use of simulation programs as automated method of performing steady state material and energy balance calculations. Letter grading.

**109. Numerical and Mathematical Methods in Chemical and Biological Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: Civil and Environmental Engineering M20 or Mechanical and Aerospace Engineering M20. Enforced corequisite: course 101A. Numerical methods for computation of solution of systems or linear and nonlinear algebraic equations, ordinary differential equations, and partial equations. Chemical and biomolecular engineering examples used throughout to illustrate application of these methods. Use of MATLAB as platform (programming environment) to write programs based on numerical methods to solve various problems arising in chemical engineering. Letter grading.

**110. Intermediate Engineering Thermodynamics. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 102B. Principles and engineering applications of statistical and phenomenological thermodynamics. Determination of partition function in terms of simple molecular models and spectroscopic data; nonideal gases; phase transitions and adsorption; nonequilibrium thermodynamics and coupled transport processes. Letter grading.

**C111. Cryogenics and Low-Temperature Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 102A, 102B (or Materials Science 130). Fundamentals of cryogenics and cryoengineering science pertaining to industrial low-temperature processes. Basic approaches to analysis of cryofluids and envelopes needed for operation of cryogenic systems; low-temperature behavior of matter, optimization of cryosystems and other special conditions. Concurrently scheduled with course C211. Letter grading.

**C112. Polymer Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 101A, Chemistry 30A. Formation of polymers, criteria for selecting reaction scheme, polymerization techniques, polymer characterization. Mechanical properties. Rheology of macromolecules, polymer process engineering. Diffusion in polymeric systems. Polymers in biomedical applications and in microelectronics. Concurrently scheduled with course C212. Letter grading.

**113. Air Pollution Engineering. (4)** Lecture, four hours; preparation, two hours; outside study, six hours. Enforced requisites: courses 101C, 102B. Integrated approach to air pollution, including concentrations of atmospheric pollutants, air pollution standards, air pollution sources and control technology, and relationship of air quality to emission sources. Links air pollution to multimedia environmental assessment. Letter grading.

**CM114. Electrochemical Processes. (4)** (Same as Materials Science CM163.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 102B, Mechanical and Aerospace Engineering 105A (or Materials Science 130). Fundamentals of electrochemistry and engineering applications to industrial electrochemical processes. Primary emphasis on fundamental approach to analyze electrochemical processes. Specific topics include electrochemical reactions on metal and semiconductor surfaces, electrodeposition, electroless deposition, electrosynthesis, fuel cells, aqueous and non-aqueous batteries, solid-state electrochemistry. May be concurrently scheduled with course CM214. Letter grading.

**C115. Biochemical Reaction Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 101C. Use of

previously learned concepts of biophysical chemistry, thermodynamics, transport phenomena, and reaction kinetics to develop tools needed for technical design and economic analysis of biological reactors. May be concurrently scheduled with course CM215. Letter grading.

**C116. Surface and Interface Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Introduction to surfaces and interfaces of engineering materials, particularly catalytic surface and thin films for solid-state electronic devices. Topics include classification of crystals and surfaces, analysis of structure and composition of crystals and their surfaces and interfaces. Examination of engineering applications, including catalytic surfaces, interfaces in microelectronics, and solid-state laser. May be concurrently scheduled with course C216. Letter grading.

**C118. Multimedia Environmental Assessment. (4)** Lecture, four hours; discussion, one hour; preparation, two hours; outside study, five hours. Recommended requisites: courses 101C, 102B. Pollutant sources, estimation of source releases, waste minimization, transport and fate of chemical pollutants in environment, intermedia transfers of pollutants, multimedia modeling of chemical partitioning in environment, exposure assessment and fundamentals of risk assessment, risk reduction strategies. Concurrently scheduled with course C218. Letter grading.

**C119. Pollution Prevention for Chemical Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 108A. Systematic methods for design of environment-friendly processes. Development of methods at molecular, unit-operation, and network levels. Synthesis of mass exchange, heat exchange, and reactor networks. Concurrently scheduled with course C219. Letter grading.

**C121. Membrane Science and Technology. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 101A, 101C, 103. Fundamentals of membrane science and technology, with emphasis on separations at micro, nano, and molecular/angstrom scale with membranes. Relationship between structure/morphology of dense and porous membranes and their separation characteristics. Use of nanotechnology for design of selective membranes and models of membrane transport (flux and selectivity). Examples provided from various fields/applications, including biotechnology, microelectronics, chemical processes, sensors, and biomedical devices. Concurrently scheduled with course C221. Letter grading.

**C124. Cell Material Interactions. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 45. Introduction to design and synthesis of biomaterials for regenerative medicine, in vitro cell culture, and drug delivery. Biological principles of cellular microenvironment and design of extracellular matrix analogs using biological and engineering principles. Biomaterials for growth factor, and DNA and siRNA delivery as therapeutics and to facilitate tissue regeneration. Use of stem cells in tissue engineering. Concurrently scheduled with course C224. Letter grading.

**C125. Bioprocesses and Bioprocess Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced corequisite: course 101C. Separation strategies, unit operations, and economic factors used to design processes for isolating and purifying materials like whole cells, enzymes, food additives, or pharmaceuticals that are products of biological reactors. Concurrently scheduled with course CM225. Letter grading.

**C126. Viruses and Biotechnology. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course CM145. Introduction of viruses and their varied roles in biotechnology, from utilization of viral enzymes to biotechnologies used to combat viral infectious diseases. Basic concepts of virology. Focus on use of viruses, including bacteriophages, and viral proteins as tools in biotechnology. Examples include bacteriophage display, virus-based nanomaterials, and viral vectors for gene delivery, and vaccines. Covers case studies of viral diseases and biotechnological strategies for diagnosis, prevention,

and treatment. Examples include human immunodeficiency virus and coronaviruses. Students conduct literature searches and write paper on relevant topic of their choice. Concurrently scheduled with course C226. Letter grading.

**CM127. Synthetic Biology for Biofuels. (4)** (Same as Chemistry CM127.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: Chemistry 153A. Engineering microorganisms for complex phenotype is common goal of metabolic engineering and synthetic biology. Production of advanced biofuels involves designing and constructing novel metabolic networks in cells. Such efforts require profound understanding of biochemistry, protein structure, and biological regulations and are aided by tools in bioinformatics, systems biology, and molecular biology. Fundamentals of metabolic biochemistry, protein structure and function, and bioinformatics. Use of systems modeling for metabolic networks to design microorganisms for energy applications. Concurrently scheduled with course CM227. Letter grading.

**C128. Hydrogen. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: Chemistry 20A. Electronic, physical, and chemical properties of hydrogen. Various methods of production, including production through methane steam reforming, electrolysis, and thermochemical cycles. Description in depth of several uses of hydrogen, including hydrogen combustion and hydrogen fuel cells. Concurrently scheduled with course C228. Letter grading.

**C135. Advanced Process Control. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 107. Introduction to advanced process control. Topics include (1) Lyapunov stability for autonomous nonlinear systems including converse theorems, (2) input to state stability, interconnected systems, and small gain theorems, (3) design of nonlinear and robust controllers for various classes of nonlinear systems, (4) model predictive control of linear and nonlinear systems, (5) advanced methods for tuning of classical controllers, and (6) introduction to control of distributed parameter systems. Concurrently scheduled with course C235. Letter grading.

**C140. Fundamentals of Aerosol Technology. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 101C. Technology of particle/gas systems with applications to gas cleaning, commercial production of fine particles, and catalysis. Particle transport and deposition, optical properties, experimental methods, dynamics and control of particle formation processes. Concurrently scheduled with course C240. Letter grading.

**CM145. Molecular Biotechnology for Engineers. (4)** (Same as Bioengineering CM145.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 45 or Life Sciences 7C. Selected topics in molecular biology that form foundation of biotechnology and biomedical industry today. Topics include recombinant DNA technology, molecular research tools, manipulation of gene expression, directed mutagenesis and protein engineering, DNA-based diagnostics and DNA microarrays, antibody and protein-based diagnostics, genomics and bioinformatics, isolation of human genes, gene therapy, and tissue engineering. Concurrently scheduled with course CM245. Letter grading.

**C146. Systems Biology: Intracellular Network Identification and Analysis. (4)** Lecture, four hours; outside study, eight hours. Requisites: course CM145, Mathematics 31A, 31B, 32A, 33B. Systems approach to intracellular network identification and analysis. Transcriptional regulatory networks, protein networks, and metabolic networks. Data from genome sequencing, large-scale expression analysis, and other high-throughput techniques provide bases for systems identification and analysis. Discussion of gene-metabolic network synthesis. Concurrently scheduled with course C246. Letter grading.

**M153. Introduction to Microscale and Nanoscale Manufacturing. (4)** (Same as Bioengineering M153, Electrical and Computer Engineering M153, and Mechanical and Aerospace Engineering M183B.) Lecture,

three hours; laboratory, four hours; outside study, five hours. Enforced requisites: Chemistry 20A, Physics 1A, 1B, 1C, 4AL. Introduction to general manufacturing methods, mechanisms, constraints, and microfabrication and nanofabrication. Focus on concepts, physics, and instruments of various microfabrication and nanofabrication techniques that have been broadly applied in industry and academia, including various photolithography technologies, physical and chemical deposition methods, and physical and chemical etching methods. Hands-on experience for fabricating microstructures and nanostructures in modern clean-room environment. Letter grading.

**188. Special Courses in Chemical Engineering. (4)** Seminar, four hours; outside study, eight hours. Special topics in chemical engineering for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated once for credit with topic or instructor change. Letter grading.

**194. Research Group Seminars: Chemical Engineering. (4)** Seminar, four hours; outside study, eight hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field. May be repeated for credit. Letter grading.

**199. Directed Research in Chemical Engineering. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation of selected topic under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**200. Advanced Engineering Thermodynamics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 102B. Phenomenological and statistical thermodynamics of chemical and physical systems with engineering applications. Presentation of role of atomic and molecular spectra and intermolecular forces in interpretation of thermodynamic properties of gases, liquids, solids, and plasmas. Letter grading.

**201. Methods of Molecular Simulation. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 200 or Chemistry C223A or Physics 215A. Modern simulation techniques for classical molecular systems. Monte Carlo and molecular dynamics in various ensembles. Applications to liquids, solids, and polymers. Letter grading.

**210. Advanced Chemical Reaction Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 101C, 106. Principles of chemical reactor analysis and design. Particular emphasis on simultaneous effects of chemical reaction and mass transfer on noncatalytic and catalytic reactions in fixed and fluidized beds. Letter grading.

**C211. Cryogenics and Low-Temperature Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Fundamentals of cryogenics and cryoengineering science pertaining to industrial low-temperature processes. Basic approaches to analysis of cryofluids and envelopes needed for operation of cryogenic systems; low-temperature behavior of matter, optimization of cryosystems and other special conditions. Concurrently scheduled with course C111. Letter grading.

**C212. Polymer Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 101A, Chemistry 30A. Formation of polymers, criteria for selecting reaction scheme, polymerization techniques, polymer characterization. Mechanical properties. Rheology of macromolecules, polymer process engineering. Diffusion in polymeric systems. Polymers in biomedical applications and in microelectronics. Concurrently scheduled with course C112. Letter grading.

**CM214. Electrochemical Processes. (4)** (Same as Materials Science CM263.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 102B, Mechanical and Aerospace Engineering 105A (or Materials Science 130). Fundamentals of electrochemistry and engineering applications

to industrial electrochemical processes. Primary emphasis on fundamental approach to analyze electrochemical processes. Specific topics include electrochemical reactions on metal and semiconductor surfaces, electrodeposition, electrodeless deposition, electrosynthesis, fuel cells, aqueous and non-aqueous batteries, solid-state electrochemistry. May be concurrently scheduled with course CM114. Letter grading.

**CM215. Biochemical Reaction Engineering. (4)** (Same as Bioengineering M215.) Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 101C. Use of previously learned concepts of biophysical chemistry, thermodynamics, transport phenomena, and reaction kinetics to develop tools needed for technical design and economic analysis of biological reactors. May be concurrently scheduled with course C115. Letter grading.

**C216. Surface and Interface Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Introduction to surfaces and interfaces of engineering materials, particularly catalytic surface and thin films for solid-state electronic devices. Topics include classification of crystals and surfaces, analysis of structure and composition of crystals and their surfaces and interfaces. Examination of engineering applications, including catalytic surfaces, interfaces in microelectronics, and solid-state laser. May be concurrently scheduled with course C116. Letter grading.

**217. Electrochemical Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisite: course C114. Transport phenomena in electrochemical systems; relationships between molecular transport, convection, and electrode kinetics, along with applications to industrial electrochemistry, fuel cell design, and modern battery technology. Letter grading.

**C218. Multimedia Environmental Assessment. (4)** Lecture, four hours; discussion, one hour; preparation, two hours; outside study, five hours. Recommended requisites: courses 101C, 102B. Pollutant sources, estimation of source releases, waste minimization, transport and fate of chemical pollutants in environment, intermedia transfers of pollutants, multimedia modeling of chemical partitioning in environment, exposure assessment and fundamentals of risk assessment, risk reduction strategies. Concurrently scheduled with course C118. Letter grading.

**C219. Pollution Prevention for Chemical Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 108A. Systematic methods for design of environment-friendly processes. Development of methods at molecular, unit-operation, and network levels. Synthesis of mass exchange, heat exchange, and reactor networks. Concurrently scheduled with course C119. Letter grading.

**220. Advanced Mass Transfer. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 101C. Advanced treatment of mass transfer, with applications to industrial separation processes, gas cleaning, pulmonary bioengineering, controlled release systems, and reactor design; molecular and constitutive theories of diffusion, interfacial transport, membrane transport, convective mass transfer, concentration boundary layers, turbulent transport. Letter grading.

**C221. Membrane Science and Technology. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 101A, 101C, 103. Fundamentals of membrane science and technology, with emphasis on separations at micro, nano, and molecular/angstrom scale with membranes. Relationship between structure/morphology of dense and porous membranes and their separation characteristics. Use of nanotechnology for design of selective membranes and models of membrane transport (flux and selectivity). Examples provided from various fields/applications, including biotechnology, microelectronics, chemical processes, sensors, and biomedical devices. Concurrently scheduled with course C121. Letter grading.

**222A. Stochastic Modeling and Simulation of Chemical Processes. (4)** Lecture, four hours; outside study, eight hours. Introduction, definition, rationale of stochastic processes. Distribution, moments, correlation. Mean square calculus. Wiener process, white

noise, Poisson process. Generalized functions. Linear systems with stochastic inputs, ergodicity. Application to chemical process modeling and simulation. Markov chains and processes. Ito integrals, stochastic difference, and differential equations. S/U or letter grading.

**222B. Stochastic Optimization and Control. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 222A. Introduction to linear and nonlinear systems theory and estimation theory. Prediction, Kalman filter, smoothing of discrete and continuous systems. Stochastic control, systems with multiplicative noise. Applications to control of chemical processes. Stochastic optimization, stochastic linear and dynamic programming. S/U or letter grading.

**223. Design for Environment. (4)** Lecture, four hours; outside study, eight hours. Limited to graduate chemical engineering, materials science and engineering, or Master of Engineering program students. Design of products for meeting environmental objectives; lifecycle inventories; lifecycle impact assessment; design for energy efficiency; design for waste minimization, computer-aided design tools, materials selection methods. Letter grading.

**C224. Cell Material Interactions. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 45. Introduction to design and synthesis of biomaterials for regenerative medicine, in vitro cell culture, and drug delivery. Biological principles of cellular microenvironment and design of extracellular matrix analogs using biological and engineering principles. Biomaterials for growth factor, and DNA and siRNA delivery as therapeutics and to facilitate tissue regeneration. Use of stem cells in tissue engineering. Concurrently scheduled with course C124. Letter grading.

**CM225. Bioprocesses and Bioprocess Engineering. (4)** (Same as Bioengineering M225.) Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 101C. Separation strategies, unit operations, and economic factors used to design processes for isolating and purifying materials like whole cells, enzymes, food additives, or pharmaceuticals that are products of biological reactors. Concurrently scheduled with course C125. Letter grading.

**C226. Viruses and Biotechnology. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course CM145. Introduction of viruses and their varied roles in biotechnology, from utilization of viral enzymes to biotechnologies used to combat viral infectious diseases. Basic concepts of virology. Focus on use of viruses, including bacteriophages, and viral proteins as tools in biotechnology. Examples include bacteriophage display, virus-based nanomaterials, and viral vectors for gene delivery, and vaccines. Covers case studies of viral diseases and biotechnological strategies for diagnosis, prevention, and treatment. Examples include human immunodeficiency virus and coronaviruses. Students conduct literature searches and write paper on relevant topic of their choice. Concurrently scheduled with course C126. Letter grading.

**CM227. Synthetic Biology for Biofuels. (4)** (Same as Chemistry CM227.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: Chemistry 153A. Engineering microorganisms for complex phenotype is common goal of metabolic engineering and synthetic biology. Production of advanced biofuels involves designing and constructing novel metabolic networks in cells. Such efforts require profound understanding of biochemistry, protein structure, and biological regulations and are aided by tools in bioinformatics, systems biology, and molecular biology. Fundamentals of metabolic biochemistry, protein structure and function, and bioinformatics. Use of systems modeling for metabolic networks to design microorganisms for energy applications. Concurrently scheduled with course CM127. S/U or letter grading.

**C228. Hydrogen. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: Chemistry 20A. Electronic, physical, and chemical properties of hydrogen. Various methods of production, including production through methane steam reforming, electrolysis, and thermochemical cycles.

Description in depth of several uses of hydrogen, including hydrogen combustion and hydrogen fuel cells. Concurrently scheduled with course C128. Letter grading.

**230. Reaction Kinetics. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 106, 200. Macroscopic descriptions: reaction rates, relaxation times, thermodynamic correlations of reaction rate constants. Molecular descriptions: kinetic theory of gases, models of elementary processes. Applications: absorption and dispersion measurements, unimolecular reactions, photochemical reactions, hydrocarbon pyrolysis and oxidation, explosions, polymerization. Letter grading.

**231. Molecular Dynamics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 106 or 110. Analysis and design of molecular-beam systems. Molecular-beam sampling of reactive mixtures in combustion chambers or gas jets. Molecular-beam studies of gas-surface interactions, including energy accommodations and heterogeneous reactions. Applications to air pollution control and to catalysis. Letter grading.

**232. Combustion Processes. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 106, 200, or Mechanical and Aerospace Engineering C132A. Fundamentals: change equations for multicomponent reactive mixtures, rate laws. Applications: combustion, including burning of (1) premixed gases or (2) condensed fuels. Detonation. Sound absorption and dispersion. Letter grading.

**233. Frontiers in Biotechnology. (2)** Lecture, one hour. Requisite: Life Sciences 3. Integration of science and business in biotechnology. Academic research leading to licensing and founding of companies that turn research breakthroughs into marketable products. Invited lecturers from academia and industry cover emerging areas of biotechnology from combination of science, engineering, and business points of view. S/U or letter grading.

**234. Plasma Chemistry and Engineering. (4)** Lecture, four hours; outside study, eight hours. Designed for graduate chemistry or engineering students. Application of chemistry, physics, and engineering principles to design and operation of plasma and ion-beam reactors used in etching, deposition, oxidation, and cleaning of materials. Examination of atomic, molecular, and ionic phenomena involved in plasma and ion-beam processing of semiconductors, etc. Letter grading.

**C235. Advanced Process Control. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 107. Introduction to advanced process control. Topics include (1) Lyapunov stability for autonomous nonlinear systems including converse theorems, (2) input to state stability, interconnected systems, and small gain theorems, (3) design of nonlinear and robust controllers for various classes of nonlinear systems, (4) model predictive control of linear and nonlinear systems, (5) advanced methods for tuning of classical controllers, and (6) introduction to control of distributed parameter systems. Concurrently scheduled with course C135. Letter grading.

**236. Chemical Vapor Deposition. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 210, C216. Chemical vapor deposition is widely used to deposit thin films that comprise microelectronic devices. Topics include reactor design, transport phenomena, gas and surface chemical kinetics, structure and composition of deposited films, and relationship between process conditions and film properties. Letter grading.

**C240. Fundamentals of Aerosol Technology. (4)** Lecture, four hours; outside study, eight hours. Enforced prerequisite: course 101C. Technology of particle/gas systems with applications to gas cleaning, commercial production of fine particles, and catalysis. Particle transport and deposition, optical properties, experimental methods, dynamics and control of particle formation processes. Concurrently scheduled with course C140. Letter grading.

**CM245. Molecular Biotechnology for Engineers. (4)** (Same as Bioengineering CM245.) Lecture, four hours; discussion, one hour; outside study, seven hours. Selected topics in molecular biology that form foundation of biotechnology and biomedical industry today. Topics include recombinant DNA technology, molecular research tools, manipulation of gene expression, directed mutagenesis and protein engineering, DNA-based diagnostics and DNA microarrays, antibody and protein-based diagnostics, genomics and bioinformatics, isolation of human genes, gene therapy, and tissue engineering. Concurrently scheduled with course CM145. Letter grading.

**C246. Systems Biology: Intracellular Network Identification and Analysis. (4)** (Formerly numbered 246.) Lecture, four hours; outside study, eight hours. Requisites: course CM245, Mathematics 31A, 31B, 32A, 33B. Systems approach to intracellular network identification and analysis. Transcriptional regulatory networks, protein networks, and metabolic networks. Data from genome sequencing, large-scale expression analysis, and other high-throughput techniques provide bases for systems identification and analysis. Discussion of gene-metabolic network synthesis. Concurrently scheduled with course C146. Letter grading.

**250. Computer-Aided Chemical Process Design. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 108B. Application of optimization methods in chemical process design; computer aids in process engineering; process modeling; systematic flowsheet invention; process synthesis; optimal design and operation of large-scale chemical processing systems. Letter grading.

**259. Theory of Applied Mathematics for Chemical Engineers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Recommended preparation: multivariable calculus. Review of functional analysis concepts. Vector spaces, norms, convexity, convergence, continuity, Banach/Hilbert/Sobolev spaces. Linear functionals. Orthonormal sets, linear operators and their spectrum. Minimum distance problems, least squares. Lagrange multipliers, nonlinear duality, variational methods. Finite difference and finite element approximation of partial differential equations (PDEs). Letter grading.

**260. Non-Newtonian Fluid Mechanics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 102A. Principles of non-Newtonian fluid mechanics. Stress constitutive equations. Rheology of polymeric liquids and dispersed systems. Applications in viscometry, polymer processing, bioengineering, oil recovery, and drag reduction. Letter grading.

**270. Principles of Reaction and Transport Phenomena. (4)** Lecture, four hours; laboratory, eight hours. Fundamentals in transport phenomena, chemical reaction kinetics, and thermodynamics at molecular level. Topics include Boltzmann equation, microscopic chemical kinetics, transition state theory, and statistical analysis. Examination of engineering applications related to state-of-art research areas in chemical engineering. Letter grading.

**270R. Advanced Research in Semiconductor Manufacturing. (6)** Laboratory, nine hours; outside study, nine hours. Limited to graduate chemical engineering students in MS semiconductor manufacturing option. Supervised research in processing semiconductor materials and devices. Letter grading.

**M280A. Linear Dynamic Systems. (4)** (Same as Electrical and Computer Engineering M240A and Mechanical and Aerospace Engineering M270A.) Lecture, four hours; outside study, eight hours. Requisite: Electrical and Computer Engineering 141 or Mechanical and Aerospace Engineering 171A. State-space description of linear time-invariant (LTI) and time-varying (LTV) systems in continuous and discrete time. Linear algebra concepts such as eigenvalues and eigenvectors, singular values, Cayley/Hamilton theorem, Jordan form; solution of state equations; stability, controllability, observability, realizability, and minimality. Stabilization design via state feedback and observers; separation principle. Connections with transfer function techniques. Letter grading.

**M280C. Optimal Control. (4)** (Same as Electrical and Computer Engineering M240C and Mechanical and Aerospace Engineering M270C.) Lecture, four hours; outside study, eight hours. Prerequisite: Electrical and Computer Engineering 240B or Mechanical and Aerospace Engineering 270B. Applications of variational methods, Pontryagin maximum principle, Hamilton/Jacobi/Bellman equation (dynamic programming) to optimal control of dynamic systems modeled by nonlinear ordinary differential equations. Letter grading.

**M282A. Nonlinear Dynamic Systems. (4)** (Same as Electrical and Computer Engineering M242A and Mechanical and Aerospace Engineering M272A.) Lecture, four hours; outside study, eight hours. Prerequisite: course M280A or Electrical and Computer Engineering M240A or Mechanical and Aerospace Engineering M270A. State-space techniques for studying solutions of time-invariant and time-varying nonlinear dynamic systems with emphasis on stability. Lyapunov theory (including converse theorems), invariance, center manifold theorem, input-to-state stability and small-gain theorem. Letter grading.

**283C. Analysis and Control of Infinite Dimensional Systems. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses M280A, M282A. Designed for graduate students. Introduction to advanced dynamical analysis and controller synthesis methods for nonlinear infinite dimensional systems. Topics include (1) linear operator and stability theory (basic results on Banach and Hilbert spaces, semigroup theory, convergence theory in function spaces), (2) nonlinear model reduction (linear and nonlinear Galerkin method, proper orthogonal decomposition), (3) nonlinear and robust control of nonlinear hyperbolic and parabolic partial differential equations (PDEs), (4) applications to transport-reaction processes. Letter grading.

**284A. Optimization in Vector Spaces. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: Electrical Engineering 236A, 236B. Review of functional analysis concepts. Convexity, convergence, continuity. Minimum distance problems for Hilbert and Banach spaces. Lagrange multiplier theorem in Banach spaces. Nonlinear duality theory. Letter grading.

**290. Special Topics. (2 to 4)** Seminar, four hours. Prerequisites for each offering announced in advance by department. Advanced and current study of one or more aspects of chemical engineering, such as chemical process dynamics and control, fuel cells and batteries, membrane transport, advanced chemical engineering analysis, polymers, optimization in chemical process design. May be repeated for credit with topic change. Letter grading.

**M297. Seminar: Systems, Dynamics, and Control Topics. (2)** (Same as Electrical and Computer Engineering M248S and Mechanical and Aerospace Engineering M299A.) Seminar, two hours; outside study, six hours. Limited to graduate engineering students. Presentations of research topics by leading academic researchers from fields of systems, dynamics, and control. Students who work in these fields present their papers and results. S/U grading.

**298A-298Z. Research Seminars. (2 to 4 each)** Seminar, to be arranged. Prerequisites for each offering announced in advance by department. Lectures, discussions, student presentations, and projects in areas of current interest. May be repeated for credit. S/U grading.

**299. Departmental Seminar. (2)** Seminar, two hours. Limited to graduate chemical engineering students. Seminars by leading academic and industrial chemical engineers on development or application of recent technological advances in discipline. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495A. Teaching Assistant Training Seminar. (2)** Seminar, two hours; outside study, four hours; one-day intensive training at beginning of Fall Quarter. Limited to graduate chemical engineering students. Required of all new teaching assistants. Special seminar on communicating chemical engineering principles, concepts, and methods; teaching assistant preparation, organization, and presentation of material, including use of grading, advising, and rapport with students. S/U grading.

**495B. Teaching with Technology for Teaching Assistants. (2)** Seminar, two hours; outside study, four hours. Limited to graduate chemical engineering students. Designed for teaching assistants interested in learning more about effective use of technology and ways to incorporate that technology into their classrooms for benefit of student learning. S/U grading.

**596. Directed Individual or Tutorial Studies. (2 to 8)** Tutorial, to be arranged. Limited to graduate chemical engineering students. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for MS Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. Limited to graduate chemical engineering students in MS semiconductor manufacturing option. Reading and preparation for MS comprehensive examination. S/U grading.

**597B. Preparation for PhD Preliminary Examinations. (2 to 16)** Seminar, to be arranged. Limited to graduate chemical engineering students. S/U grading.

**597C. Preparation for PhD Oral Qualifying Examination. (2 to 16)** Tutorial, to be arranged. Limited to graduate chemical engineering students. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 12)** Tutorial, to be arranged. Limited to graduate chemical engineering students. Supervised independent research for MS candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Limited to graduate chemical engineering students. Usually taken after students have been advanced to candidacy. S/U grading.

## CHEMISTRY AND BIOCHEMISTRY

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-----, Chair

## Faculty Roster

### Professors

Anastassia N. Alexandrova, PhD  
Anne M. Andrews, PhD, *in Residence*  
David B. Bensimon, PhD  
Guillaume F. Chanfreau, PhD  
Catherine F. Clarke, PhD  
Steven G. Clarke, PhD  
Robert T. Clubb, PhD  
Stuart J. Conway, PhD  
Timothy J. Deming, PhD  
Paula L. Diaconescu, PhD

Abigail G. Doyle, PhD (*Saul Winstein Professor of Organic Chemistry*)

Xiangfeng Duan, PhD

David S. Eisenberg, DPhil (*Paul D. Boyer Professor of Molecular Biology and Biochemistry*)

Juli F. Feigon, PhD

Miguel A. Garcia-Garibay, PhD

Neil K. Garg, PhD (*Kenneth N. Trueblood Endowed Professor of Chemistry and Biochemistry*)

William M. Gelbart, PhD

James K. Gimzewski, PhD

Patrick G. Harran, PhD (*D.J. and J.M. Cram Professor of Organic Chemistry*)

Michael E. Jung, PhD (*Walter and Shirley Wang Endowed Professor of Medicinal Drug Discovery*)

Richard B. Kaner, PhD

Carla M. Koehler, PhD

Ohyun Kwon, PhD

Joseph A. Loo, PhD

Thomas G. Mason, PhD

Heather D. Maynard, PhD

Daniel Neuhauser, PhD

Margot E. Quinlan, PhD

Yves F. Rubin, PhD

Philippe Sautet, PhD (*Levi James Knight, Jr. Term Professor of Excellence*)

Benjamin J. Schwartz, PhD

Hannah S. Shafaat, PhD

Yi Tang, PhD (*Ralph M. Parsons Foundation Professor of Chemical Engineering*)

Sarah H. Tolbert, PhD

Jorge Z. Torres, PhD

Paul S. Weiss, PhD (*Presidential Professor of Chemistry*)

Roy Wollman, PhD

Gerard C.L. Wong, PhD

### Professors Emeriti

Frank A.L. Anet, PhD

Daniel E. Atkinson, PhD

Delroy A. Baugh, PhD

Kyle D. Bayes, PhD

James U. Bowie, PhD

Robijn F. Bruinsma, PhD

Albert J. Couere, PhD

Richard E. Dickerson, PhD

Mostafa A. El-Sayed, PhD

Peter M. Felker, PhD

Robin L. Garrell, PhD

James W. Gober, PhD

Jay D. Gralla, PhD

E. Russell Hardwick, PhD

Kendall N. Houk, PhD (*Saul Winstein Professor Emeritus of Organic Chemistry*)

Wayne L. Hubbell, PhD (*Jules Stein Professor Emeritus of Ophthalmology*)

Charles M. Knobler, PhD

Christopher J. Lee, PhD

Raphael D. Levine, PhD

Harold G. Martinson, PhD

Craig A. Merlic, PhD

Emil Reisler, PhD

J. Fraser Stoddart, PhD (*Nobel laureate*)

Charles E. Strouse, PhD

Joan S. Valentine, PhD

Richard L. Weiss, PhD (*Presidential Professor Emeritus of Chemistry*)



Shimon Weiss, DSc (*Dean M. Willard Professor Emeritus of Chemistry*)

Charles A. West, PhD

Todd O. Yeates, PhD

Jeffrey I. Zink, PhD

### Associate Professors

Louis S. Bouchard, PhD

Justin R. Caram, PhD

Chong Liu, PhD

Prineha Narang, PhD (*Howard Reiss Career Development Professor*)

Jose A. Rodriguez, PhD

Ellen M. Sletten, PhD

Alexander M. Spokoyny, PhD

### Assistant Professors

Soumitra V. Athavale, PhD

Keriann M. Backus, PhD (*Alexander and Renee Kolin Endowed Professor of Molecular Biology and Biophysics*)

Victoria P. Barber, PhD

Michael R. Lawson, PhD

Matthew J. Nava, PhD

Danielle L. Schmitt, PhD

### Senior Lecturer SOE

Arlene A. Russell, PhD, *Emerita*

### Senior Lecturer

Laurence Lavelle, PhD

### Lecturers

Anne Hong-Hermesdorf, PhD

Stacie S. Nakamoto, PhD

Eric R. Scerri, PhD

### Adjunct Professors

Sriram Kosuri, PhD

Sabeeha Merchant, PhD

### Adjunct Associate Professor

Jennifer R. Casey, PhD

### Adjunct Assistant Professors

Mackenzie B. Anderson, PhD

Max Kopelevich, PhD

Hung V. Pham, PhD

Huiling Shao, PhD

## Overview

Chemistry is concerned with the composition, structure, and properties of substances, the transformations of these substances into others by reactions, and the kinds of energy changes that accompany these reactions. The Department of Chemistry and Biochemistry is organized in four interrelated and overlapping subdisciplines that deal primarily with the chemistry of inorganic substances (inorganic chemistry), the chemistry of carbon compounds (organic chemistry), the chemistry of living systems (biochemistry), and the physical behavior of substances in relation to their structures and chemical properties (physical chemistry). The Chemistry/Materials Science major is designed for students who are interested in the applications of chemistry for the design, synthesis, and study of new materials.

## Undergraduate Study

The department offers four majors: Chemistry (with concentrations in chemistry and physical chemistry), Biochemistry, General Chemistry, and Chemistry/Materials Science. The Chemistry and Biochemistry majors are designed to prepare students for graduate studies in each field, for entry into professional schools in the health sciences, and for careers in industries and businesses that depend on chemically and biochemically based technology. The General Chemistry major is intended for students who wish to acquire considerable chemical background in preparation for careers outside chemistry. The Chemistry/Materials Science major provides appropriate preparation for graduate studies in fields that emphasize research involving chemistry, engineering, and applied science.

Each course used to fulfill any of the requirements for any of the departmental majors must be taken for a letter grade. Seminar courses, individual study courses, and research courses (e.g., 194, 199) may not be applied toward the requirements for the majors.

Requirements for the majors are outlined below. For additional information, contact the [Undergraduate Office](#), 4006 Young Hall.

## Undergraduate Policies

### Advanced Placement in Chemistry

Students who have taken the Advanced Placement (AP) Chemistry Examination and obtained a score of 4 or 5 receive 8 units of chemistry credit and may petition for chemistry and biochemistry equivalency, or may take course 20A at UCLA. If students received a score of 3 on the AP Chemistry Examination, they receive 8 units of chemistry credit but no course equivalency.

### Credit Limitations

Students may not take or repeat a chemistry or biochemistry course for credit if it is a requisite for a more advanced course for which they already have credit. This applies in particular to the repetition of courses (e.g., if students wish to repeat Chemistry and Biochemistry 20A, they must do so before completing course 20B).

## Undergraduate Majors

### Chemistry BS

The Chemistry major is for students who intend to pursue a career in chemistry.

### Learning Outcomes

The Chemistry major has the following learning outcomes:

- Demonstrated broad mastery of fundamental chemical knowledge, in-depth problem solving, critical thinking, and analytical reasoning in analytical, inorganic, organic, and physical chemistry, and in research

- Use of computers in data acquisition and processing
- Use of software tools for exploration and investigation of chemistry principles and models
- Understanding of the role of chemistry in addressing contemporary societal and global issues
- Performance of basic laboratory techniques, description of working principles, and knowledge of how to operate modern chemical instrumentation
- Use of chemical information to search chemical safety databases
- Conduct experimental work and handle all chemicals in a safe manner following OSHA-approved regulations and procedures
- Work effectively in groups and teams of diverse peers to solve scientific problems
- Search and access current and prior research
- Communication of chemical knowledge and experimental results through written reports and oral presentations

## Entry to the Major

### Admission

Students entering UCLA directly from high school who declare the Chemistry major at the time of application are automatically admitted to the major.

UCLA students who wish to enter the major must have a minimum grade of C– in each of the preparation for the major courses completed and a combined grade-point average of at least 2.0 in those courses. Grades in any completed courses for the major must also average at least 2.0.

### Transfer Students

Transfer applicants to the Chemistry major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general chemistry with laboratory for majors, one and one half years of calculus, and either one year of calculus-based physics with laboratory or one year of organic chemistry for majors. Chemistry majors should have completed the equivalent of Mathematics 32B.

Entering transfer students who have successfully completed a year course (including laboratory) in general college chemistry intended for science and engineering students should enter course 30A. Transfer students should contact the [Undergraduate Office](#), 4006 Young Hall, for assistance with the articulation of transfer coursework.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Chemistry Concentration

#### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A (or 20AH), 20B (or 20BH), 20L, 30A, 30AL, 30B, 30BL, 30C, 30CL; Mathematics 31A, 31B, 32A,



32B, 33A (33B highly recommended); Physics 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), 4BL.

### The Major

*Required:* Chemistry and Biochemistry 110A, 110B, 113A, 114 (or 114H), either 136 or 144, 153A, 153L, 171, C172, and two other upper-division or graduate courses in the department, including at least one additional laboratory course from 136, 144, 154, C174, 184, 185.

### Physical Chemistry Concentration

The physical chemistry concentration is designed primarily for students who are interested in attending graduate school in physical chemistry/physics or related areas.

### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A (or 20AH), 20B (or 20BH), 20L, 30A, 30AL, 30B, 30BL; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), 4BL.

### The Major

*Required:* Chemistry and Biochemistry 110A, 110B, 113A, C113B, 114 (or 114H), 153A, 171, C172; one additional upper-division chemistry, electrical engineering, or physics laboratory course; and three elective upper-division or graduate courses approved by the physical chemistry adviser. Refer to the [Undergraduate Office](#) website for a list of approved electives.

By the junior year, students are strongly encouraged to join a research group within the physical chemistry division to obtain first-hand experience with state-of-the-art physical chemistry research.

### Honors Program

The core of the program consists of at least one approved undergraduate seminar course from Chemistry and Biochemistry 193A or 193B and three research courses (12 units minimum) from 196A, 196B, or 199, culminating in a thesis.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, and one course from 10C, 15, or 20A, and (3) completing two computational chemistry courses from Chemistry and Biochemistry C113B, C126A, C145, CM160A.

Students with the Chemistry Concentration are required to complete Chemistry and Biochemistry C113B and one computational chemistry course from Chemistry and Biochemistry 125, C126A, C145, CM160A, CM160B.

## Policies

### Honors Program

#### Admission

The honors program provides exceptional majors with the opportunity to do research culminating in an honors thesis. Junior and senior majors who have completed all university-level coursework, including all preparation courses and requirements for the major, with an overall

grade-point average of 3.0 or better and a 3.5 GPA or better in the required major courses, may apply for admission. Students must have the sponsorship of an approved faculty adviser.

For additional information and application forms, students should contact the Undergraduate Advising Office, 4006 Young Hall, early in their educational planning. Completed applications must be submitted at least two weeks prior to the term in which students plan to begin the honors program.

#### Requirements

To qualify for graduation with departmental honors, students must satisfactorily complete all requirements for the honors program and the major and obtain a cumulative grade-point average of 3.5 or better in coursework required for the major. On recommendation of the faculty sponsor, and with the approval of the thesis by the departmental honors committee, students are awarded no honors, honors, or highest honors.

Students who have a grade-point average of 3.6 or better, both overall and in the major, and demonstrated exceptional accomplishment on the research thesis are awarded highest honors at the discretion of the departmental honors committee.

### Computing Specialization

Courses need to be completed with a combined grade-point average of at least 2.0. Students must petition for admission to the program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the [Undergraduate Office](#)). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Biochemistry BS

The Biochemistry major is for students preparing for careers in biochemistry or other fields requiring extensive preparation in both chemistry and biology.

### Learning Outcomes

The Biochemistry major has the following learning outcomes:

- Understanding of chemical structures, bonding, and conformational properties of biological molecules
- Understanding of higher-level organization of cellular components, rules of subcellular organelles, and compartmentalization
- Understanding of mechanisms and energetics of biochemical reactions and the basis for enzymatic catalysis, including the roles of organic cofactors and metals in such processes
- Understanding of ways that cellular events are energetically coupled in key processes
- Understanding of regulatory and response mechanisms that operate in biological systems to achieve homeostasis and conduct signaling within and between cells
- Understanding of the basis for molecular evolution and ways that genetic information is encoded and transmitted in biology

- Understanding of the roles of DNA and protein sequence information in inferring biological function and common ancestry
- Familiarity with laboratory methods for purifying, identifying, and characterizing biomolecules, including protein and nucleic acids
- Familiarity with assays for activity and binding
- Familiarity with basic laboratory methods for DNA manipulation
- Understanding of the roles of hypotheses and models in investigating scientific ideas
- Understanding of the critical importance of controls in interpreting experimental data

## Entry to the Major

### Admission

Students entering UCLA directly from high school who declare the Biochemistry major at the time of application are automatically admitted to that major.

UCLA students who wish to enter the major must have a minimum grade of C– in each of the preparation for the major courses completed and a combined grade-point average of at least 2.0 in those courses. Grades in any completed courses for the major must also average at least 2.0.

### Transfer Students

Transfer applicants to the Biochemistry major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general chemistry with laboratory for majors, one and one half years of calculus, and either one year of calculus-based physics with laboratory or one year of organic chemistry for majors. Biochemistry majors must also complete courses equivalent to Life Sciences 7A, 7B, and 7C.

Entering transfer students who have successfully completed a year course (including laboratory) in general college chemistry intended for science and engineering students should enter course 30A. Transfer students should contact the [Undergraduate Office](#), 4006 Young Hall, for assistance with the articulation of transfer coursework.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Chemistry and Biochemistry 14A (or 14AE) and 14B (or 14BE), or 20A (or 20AH) and 20B (or 20BH), 20L, 30A, 30AL, 30B, 30BL, 30C; Life Sciences 7A, 7B, 7C, and 23L; Mathematics 31A, 31B, 32A (33A strongly recommended); Physics 1A, 1B, and 1C (or 1AH, 1BH, and 1CH) and 4BL, or 5A, 5B, and 5C.

### The Major

*Required:* Chemistry and Biochemistry 110A, 153A, 153B, 153C, 153L, 154, 156; one additional upper-division or graduate course in chemistry and biochemistry; and three elective upper-division or graduate courses (12 units) approved by the undergraduate adviser (Micro-

biology, Immunology, and Molecular Genetics 101 highly recommended).

### Honors Program

The core of the program consists of at least one approved undergraduate seminar course from Chemistry and Biochemistry 193A or 193B and three research courses (12 units minimum) from 196A, 196B, or 199, culminating in a thesis.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, and one course from 10C, 15, or 20A, and (3) completing two computational chemistry courses from Chemistry and Biochemistry C126A, C145, CM160A.

### Policies

#### The Major

Refer to the [Undergraduate Office](#) website for a list of approved electives.

#### Honors Program

##### Admission

The honors program provides exceptional majors with the opportunity to do research culminating in an honors thesis. Junior and senior majors who have completed all university-level coursework, including all preparation courses and requirements for the major, with an overall grade-point average of 3.0 or better and a 3.5 GPA or better in the required major courses, may apply for admission. Students must have the sponsorship of an approved faculty adviser.

For additional information and application forms, students should contact the Undergraduate Advising Office, 4006 Young Hall, early in their educational planning. Completed applications must be submitted at least two weeks prior to the term in which students plan to begin the honors program.

##### Requirements

To qualify for graduation with departmental honors, students must satisfactorily complete all requirements for the honors program and the major and obtain a cumulative grade-point average of 3.5 or better in coursework required for the major. On recommendation of the faculty sponsor, and with the approval of the thesis by the departmental honors committee, students are awarded no honors, honors, or highest honors.

Students who have a grade-point average of 3.6 or better, both overall and in the major, and demonstrated exceptional accomplishment on the research thesis are awarded highest honors at the discretion of the departmental honors committee.

### Computing Specialization

Courses need to be completed with a combined grade-point average of at least 2.0. Students must petition for admission to the program and are advised to do so after they complete Program in Computing 10B (petitions

should be filed in the [Undergraduate Office](#)). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## General Chemistry BS

The General Chemistry major is for students who wish to acquire considerable chemical background in preparation for careers in secondary school chemistry teaching. The major may be appropriate for some students who plan to enter other chemistry-related careers that involve teaching chemistry to nonchemists. This major cannot be taken as part of a double major or with the Science Education minor.

### Learning Outcomes

The General Chemistry major has the following learning outcomes:

- Demonstrated mastery of fundamental chemical knowledge in analytical, inorganic, organic, physical chemistry, and biochemistry through in-depth problem solving, critical thinking, and analytical reasoning
- Effective communication of chemical knowledge through written materials, oral presentations, and teaching in a variety of settings
- Use of information resources for exploration and investigation of chemistry principles and models
- Understanding of the role of chemistry in addressing contemporary societal and global issues
- Ability to perform and teach basic laboratory procedures and techniques involving the synthesis of molecules
- Ability to perform and teach the measurement of chemical properties, structures, and phenomena
- Knowledge of how to handle chemicals in a safe manner following OSHA-approved regulations and procedures
- Knowledge of how to use information resources to search and access safety databases

### Entry to the Major

#### Transfer Students

Transfer applicants to the General Chemistry major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general chemistry with laboratory for majors, one and one half years of calculus, and either one year of calculus-based physics with laboratory or one year of organic chemistry for majors.

Entering transfer students who have successfully completed a year course (including laboratory) in general college chemistry intended for science and engineering students should enter course 30A. Transfer students should contact the [Undergraduate Office](#), 4006 Young Hall, for assistance with the articulation of transfer coursework.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Policies

Students must declare the major before reaching 135 units.

### Requirements

#### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A (or 20AH), 20B (or 20BH), 20L, 30A, 30AL, 30B, 30BL, 30C, 30CL; Life Sciences 7A; Mathematics 31A, 31B, 32A, 33A; Physics 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), and 4BL (or 5A, 5B, and 5C).

#### The Major

*Required:* Chemistry and Biochemistry 110A, 153A, 153L, 171, and 192A or 192B; three additional upper-division courses in the department (at least one must be a laboratory course); one course from Atmospheric and Oceanic Sciences 101, 102, 103, 104, Earth, Planetary, and Space Sciences 101, C113; three courses from Education M102, 105B, 106A, 107A, 107B, M108, C111, 126, 127, M131A, 132; one course from Environmental Health Sciences C152D, C164, Science Education 100XP.

#### Honors Program

The core of the program consists of at least one approved undergraduate seminar course from Chemistry and Biochemistry 193A or 193B and three research courses (12 units minimum) from 196A, 196B, or 199, culminating in a thesis.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, and one course from 10C, 15, or 20A, and (3) completing two computational chemistry courses from Chemistry and Biochemistry C126A, C145, CM160A.

### Policies

#### Preparation for the Major

Students must complete the preparation courses with at least a 2.0 grade-point average.

#### The Major

A 2.0 grade-point average is required in all upper-division courses in the department.

#### Honors Program

##### Admission

The honors program provides exceptional majors with the opportunity to do research culminating in an honors thesis. Junior and senior majors who have completed all university-level coursework, including all preparation courses and requirements for the major, with an overall grade-point average of 3.0 or better and a 3.5 GPA or better in the required major courses, may apply for admission. Students must have the sponsorship of an approved faculty adviser.

For additional information and application forms, students should contact the Undergraduate Advising Office, 4006 Young Hall, early in

their educational planning. Completed applications must be submitted at least two weeks prior to the term in which students plan to begin the honors program.

### Requirements

To qualify for graduation with departmental honors, students must satisfactorily complete all requirements for the honors program and the major and obtain a cumulative grade-point average of 3.5 or better in coursework required for the major. On recommendation of the faculty sponsor, and with the approval of the thesis by the departmental honors committee, students are awarded no honors, honors, or highest honors.

Students who have a grade-point average of 3.6 or better, both overall and in the major, and demonstrated exceptional accomplishment on the research thesis are awarded highest honors at the discretion of the departmental honors committee.

### Computing Specialization

Courses need to be completed with a combined grade-point average of at least 2.0. Students must petition for admission to the program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the [Undergraduate Office](#)). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Chemistry/Materials Science BS

The Chemistry/Materials Science major is designed for students who are interested in chemistry with an emphasis on material properties and provides students the opportunity to gain expertise in both chemistry and the science and engineering in materials such as semiconductors, photonic materials, polymers, biomaterials, ceramics, and nano-scale structures. Students explore the reactivity of such materials in different environments and gain understanding of how chemical compositions affect properties. The major provides appropriate preparation for graduate studies in many fields emphasizing interdisciplinary research, including chemistry, engineering, and applied science.

### Learning Outcomes

The Chemistry/Materials Science major has the following learning outcomes:

- Understanding of the foundations of materials chemistry including nanoscience, materials synthesis, and materials processing
- Understanding of different methods for materials characterization, measurement of materials properties, and general structure/function relationships
- Familiarity with laboratory methods for materials chemistry and practical laboratory experience with such methods, including X-ray diffraction, optical absorption and fluorescence spectroscopies, electrical measurements, and electron and scanning probe microscopies
- Understanding of basic operational principles for a broad range of practical devices (e.g.,

LEDs, photovoltaics, electrochromics, etc.) from a fundamental materials perspective

- Safely and effectively work in a materials laboratory setting
- Knowledge of how to handle chemicals in a safe manner following OSHA-approved regulations and procedures
- Knowledge of how to use information resources to search and access safety databases
- Use of computers, including data acquisition and software tools for calculating and understanding materials properties
- Demonstrated broad mastery of materials chemistry including critical thinking, problem solving, working effectively in diverse groups
- Communication of knowledge through written reports and oral presentations

### Entry to the Major

#### Admission

Students entering UCLA directly from high school who declare the Chemistry/Materials Science major at the time of application are automatically admitted to that major.

UCLA students who wish to enter the major must have a minimum grade of C- in each of the preparation for the major courses completed and a combined grade-point average of at least 2.0 in those courses. Grades in any completed courses for the major must also average at least 2.0.

#### Transfer Students

Transfer applicants to the Chemistry/Materials Science major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general chemistry with laboratory for majors, one and one half years of calculus, and either one year of calculus-based physics with laboratory or one year of organic chemistry for majors. Chemistry/Materials Science majors in the organic materials concentration must complete a full year of organic chemistry with laboratory in addition to the other courses listed above.

Entering transfer students who have successfully completed a year course (including laboratory) in general college chemistry intended for science and engineering students should enter course 30A. Transfer students should contact the [Undergraduate Office](#), 4006 Young Hall, for assistance with the articulation of transfer coursework.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A (or 20AH), 20B (or 20BH), 20L, 30A, 30AL, Mathematics 31A, 31B, 32A, 32B, 33A (33B highly recommended), Physics 1A, 1B, 1C, 4BL.

#### The Major

*Required:* Chemistry and Biochemistry 110A, 113A, 171, C172 or C180 or C181, 185, 4 units from 110B, C113B, C172, C174, C175, C176,

C180, C181; Materials Science and Engineering 104, 110, 110L, 120, 121 or 150 or 160, 131, 8 units from C111, 121, 122, 132, 150, 160, 162, CM180; 7 laboratory units from Chemistry and Biochemistry 114, 184, Materials Science and Engineering 121L, 131L, 161L.

### Organic Materials Concentration

#### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A (or 20AH), 20B (or 20BH), 20L, 30A, 30AL, 30B, 30BL, 30C, 30CL, Mathematics 31A, 31B, 32A, 32B, 33B, Physics 1A, 1B, 1C, 4BL.

#### The Major

*Required:* Chemistry and Biochemistry 110A, 113A, 136, 171, 185, 4 units from 110B, C113B, C143A, 144, C172, C174, C175, C176, C180, C181; Materials Science and Engineering 104, 110, 110L, 120, 150, 4 units from C111, 121, 122, 131, 132, 160, 162, CM180; 7 laboratory units from Chemistry and Biochemistry 114, 184, Materials Science and Engineering 121L, 131L, 161L.

### Honors Program

The core of the program consists of at least one approved undergraduate seminar course from Chemistry and Biochemistry 193A or 193B and three research courses (12 units minimum) from 196A, 196B, or 199, culminating in a thesis.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, and one course from 10C, 15, or 20A, and (3) completing two computational chemistry courses from Chemistry and Biochemistry C126A, C145, CM160A.

### Policies

#### The Major

The following courses may be applied only once toward the major: Chemistry and Biochemistry C172, C180, C181, Materials Science and Engineering 121, 150, 160.

### Honors Program

#### Admission

The honors program provides exceptional majors with the opportunity to do research culminating in an honors thesis. Junior and senior majors who have completed all university-level coursework, including all preparation courses and requirements for the major, with an overall grade-point average of 3.0 or better and a 3.5 GPA or better in the required major courses, may apply for admission. Students must have the sponsorship of an approved faculty adviser.

For additional information and application forms, students should contact the Undergraduate Advising Office, 4006 Young Hall, early in their educational planning. Completed applications must be submitted at least two weeks prior to the term in which students plan to begin the honors program.



## Requirements

To qualify for graduation with departmental honors, students must satisfactorily complete all requirements for the honors program and the major and obtain a cumulative grade-point average of 3.5 or better in coursework required for the major. On recommendation of the faculty sponsor, and with the approval of the thesis by the departmental honors committee, students are awarded no honors, honors, or highest honors.

Students who have a grade-point average of 3.6 or better, both overall and in the major, and demonstrated exceptional accomplishment on the research thesis are awarded highest honors at the discretion of the departmental honors committee.

## Computing Specialization

Courses need to be completed with a combined grade-point average of at least 2.0. Students must petition for admission to the program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the [Undergraduate Office](#)). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Graduate Majors

### Biochemistry, Molecular and Structural Biology MS, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Chemistry MS, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Applied Chemical Sciences

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Applied Chemical Sciences

### Graduate Courses

**201A-201B. Modern Analytical Methods in Chemistry. (4-4)** Laboratory, six hours; discussion, two hours. Introduction to fundamental principles and applied aspects of using holistic tools to interrogate matter at various length-scales. Covers essential technologies and concepts practiced in small molecule, materials, and biomaterials-based research. Emphasis on fundamentals and advantages/limitations of techniques. Letter grading.

**202. Data Management in Science. (3)** Lecture, three hours. Offers training for different aspects of data management in science. Topics include common practices of searching and managing literature data, calculating and reporting statistical tests, and introduction of machine learning approaches in context of scientific research. With real-life examples and interactive in-class discussions, students are equipped with necessary data-management skills in both academic and industrial settings. Letter grading.

**203. Synthetic Methods. (5)** Laboratory, eight hours; discussion, two hours. Synthesis of organic, inorganic and organometallic compounds, including air-sensitive materials; advanced chromatographic and ion exchange methods; spectroscopic characterization and applications. Laboratory projects emphasize advanced characterization tools, team work, and project management. Letter grading.

**204. Workflow Management. (3)** Lecture, three hours. Offers training for workflow management in science. Topics include common practices needed for science communication, developing various forms of written documentation, and navigating major organizational and team work challenges. Letter grading.

**205A-205B. Careers in Chemistry. (2-2)** Seminar, two hours. Various non-academic speakers give presentations on career paths in areas such as industry, government, research and development, education, law, and health care, and explain skills that are helpful for respective career. S/U (205A) and letter (205B) grading.

**206. Medicinal Chemistry and Drug Discovery. (4)** Lecture, four hours. Overview of drug discovery process with focus on transition metal catalysis in synthesis of medicines. Discussion of process by which drugs are discovered, from lead optimization to process development. Introduction of transition metal catalysis, area of critical importance in modern drug development. Covers fundamental concepts of transition metal catalysis and how catalysis has played transformative role in synthesis of modern medicines. Letter grading.

**207. Chemistry of 3D Printing and Additive Manufacturing. (4)** Lecture, four hours. Examination of various styles of 3D printing in plastic and metal space. Examination of material and design constraints of each technology. Exploration of end-use applications for each technology. Culminates in design project in which students select product for re-design to take advantage of additive manufacturing. Students use basic computer-aided design skills to modify existing product, select print technology and material to generate that object, and then produce report looking at cost-benefit analysis of using 3D printing in chosen application. Letter grading.

**208A-208B-208C. Capstone Project. (8-8-8)** Tutorial, eight hours. Development of skill set that is directly translatable to various work environments across chemical industry and other chemistry-related jobs outside of academia. Students build critical thinking skills and learn to work in team on applied chemistry projects. Students are advised to collaborate with campus researchers/experts in humanities, social science, and business/policy fields to improve their communication and project management skills. Letter grading.

**596. Directed Individual Research. (2 to 12)** Tutorial, to be arranged. Directed study or research by supervising faculty member. Research group meetings, seminars, and discussions. May be repeated for credit. S/U grading.

## Chemistry and Biochemistry

### Lower-Division Courses

**3. Material World. (4)** Lecture, three hours; laboratory, two hours. Focus on most important advances made by humans in developing new molecules and materials, and how these discoveries affect our everyday life. These include development of paints, polymers, metals, fuels, drugs, energetic materials, radioactive substances, poisons, and many more. Connections are made between interplay of science, history, arts, and socio-economic factors driving technological development. Laboratory sections focus on small-scale experiments relevant to everyday life and complementary to lecture topics. P/NP or letter grading.

**4A. Chemistry and Your Health. (2)** Lecture, two hours. Recent health trends and how they are portrayed in pop culture and media. Examination of scientific explanations behind current health crazes and determination if there is validity to these claims. Discussion of chemical principles, such as basic arrow pushing mechanisms, radical oxidations, etc. Investigation of variety of topics including vitamins, health and beauty supplements, sugar alternatives, detox/cleanses, and traditional medicines. Relevant for students who have taken organic chemistry classes and those who are interested in learning basic organic chemistry concepts. No college-level chemistry is required. P/NP or letter grading.

**4B. What's Cooking Chemistry in the Kitchen. (4)** Lecture, three hours. What is difference between baking soda and baking powder? Why do some recipes call for butter, margarine, or shortening? Answers to these questions and more through dive into chemistry happening every day in your kitchen. Study of macromolecules that make up food (carbohydrates, proteins, and lipids), their chemical properties (hydrophobicity, pH, melting point, degree of saturation), and how to use these properties to control texture and taste in food. Chemical concepts are learned in fun, intuitive way, while use of scientific method in improving food preparations is also learned. Opportunities to participate in scientific process through weekly at home experiments in kitchen, and creative research project. P/NP or letter grading.

**7. Nanoscience and Nanotechnology Laboratory. (2)** Seminar, discussion, and laboratory, 32 hours. Limited to high school students. Key concepts of nanoscience and nanotechnology, including various approaches to nanofabrication (bottom-up and top-down). Fabrication of nanostructures and devices, collection of scientific data using those devices, analysis of data, and presentations of student results. Offered in summer only. P/NP grading.

**8. Applications of Nanoscience. (2 to 4)** Seminar, discussion, laboratory, and field trip, 30 to 60 hours. Limited to high school students. Introduction of advanced concepts of nanoscience and nanotechnology, with emphasis on applications of nanoscience and nanotechnology in other research fields and industries. Laboratories introduce students to research methods, experiment development, scientific writing, and presentation skills. Students devise and execute their own exploratory nanoscience experiments, and present them to technical audience. Offered only as part of Summer Institute. P/NP grading.

**14A. General Chemistry for Life Scientists I. (4)** Lecture, three hours; discussion, one hour. Preparation: high school chemistry or equivalent background and three and one half years of high school mathematics. Requisite: completion of Chemistry Diagnostic Test. Enforced corequisite: Life Sciences 30A or Mathematics 3A or 31A or score of 48 or better on Mathematics Diagnostic Test. Not open to students with credit for course 20A. Introduction to physical and

general chemistry principles; atomic structure based on quantum mechanics; atomic properties; trends in periodic table; chemical bonding (Lewis structures, VSEPR theory, hybridization, and molecular orbital theory); coordination compounds; properties of inorganic and organic acids, bases, buffers. P/NP or letter grading.

**14AE. General Chemistry for Life Scientists I—Enhanced. (4)** Lecture, three hours; discussion, two hours. Preparation: high school chemistry or equivalent background and three and one half years of high school mathematics. Requisite: completion of Chemistry Diagnostic Test. Enforced corequisite: Life Sciences 30A or Mathematics 3A or 31A or score of 48 or better on Mathematics Diagnostic Test. Not open to students with credit for course 14A or 20A. Study of foundations of chemistry. Discussion of foundations of quantum mechanics and how these principles can be used to understand atomic and molecular structure and properties; how molecules interact; and properties of inorganic, organic, and biological acids, bases, and salts. Biological, environmental, and socially-relevant examples are used to illustrate central role that chemistry plays in our world. Emphasis on developing problem-solving skills and collaborative interaction and learning. P/NP or letter grading.

**14B. General Chemistry for Life Scientists II. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: one course from 14A, 14AE, 20A, or 20AH with grade of C– or better. Enforced corequisite: Life Sciences 30B or Mathematics 3B or 31B with grade of C– or better. Not open to students with credit for course 14BE, 20B, or 20BH. Chemical equilibria in gases and liquids, acid-base equilibrium; phase changes; thermochemistry; first, second, and third laws of thermodynamics; free energy changes; electrochemistry and its role as energy source; chemical kinetics, including catalysis, and reaction mechanisms. P/NP or letter grading.

**14BE. General Chemistry for Life Scientists II—Enhanced. (4)** Lecture, three hours; discussion, two hours. Enforced requisite: one course from 14A, 14AE, 20A, or 20AH with grade of C– or better. Enforced requisite or corequisite: Life Sciences 30B or Mathematics 3B or 31B with grade of C– or better. Not open to students with credit for course 14B, 20B, or 20BH. Introduction to concepts in thermodynamics and kinetics that are critical for understanding of molecular basis of life. Chemical equilibria in gases and liquids, acid-base equilibrium; phase changes; thermochemistry; first, second, and third laws of thermodynamics; free energy changes; electrochemistry; chemical kinetics, including catalysis, and reaction mechanisms. Emphasis on developing problem-solving skills and collaborative interaction and learning. P/NP or letter grading.

**14BL. General and Organic Chemistry Laboratory I. (3)** Lecture, one hour; laboratory, three hours. Enforced requisite: course 14A or 20A or 20AH with grade of C– or better. Enforced corequisite: course 14B. Not open to students with credit for course 20L. Introduction to volumetric, spectrophotometric, and potentiometric analysis. Use and preparation of buffers and pH meters. Synthesis and kinetics techniques using compounds of interest to students in life sciences. P/NP or letter grading.

**14C. Structure of Organic Molecules. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 14B with grade of C– or better. Not open to students with credit for course 30A. Continuing studies in structure of organic molecules, with emphasis on biological applications. Resonance, stereochemistry, conjugation, and aromaticity; spectroscopy (NMR, IR, and mass spectrometry); introduction to effects of structure on physical and chemical properties; survey of biomolecular structure. P/NP or letter grading.

**14CL. General and Organic Chemistry Laboratory II. (4)** Lecture, one hour; laboratory, six hours. Enforced requisites: courses 14B and 14BL, or 20B and 20L, with grades of C– or better. Enforced corequisite: course 14C. Synthesis and analysis of compounds; purification by extraction, chromatography, recrystallization, and sublimation; characterization by mass

spectroscopy, UV, NMR, and IR spectroscopy, optical activity, electrochemistry, pH titration. P/NP or letter grading.

**14D. Organic Reactions and Pharmaceuticals. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 14C with grade of C– or better. Organic reactions, nucleophilic and electrophilic substitutions and additions; electrophilic aromatic substitutions, carbonyl reactions, catalysis, molecular basis of drug action, and organic chemistry of pharmaceuticals. P/NP or letter grading.

**17. Chemical Principles. (4)** Lecture, three hours; discussion, one hour. Introduction to chemical principles: numbers, measurements, chemical calculations, gas laws, solutions, acids, bases, and salts, molecular structure, and nomenclature. Collaborative learning and problem solving; introduction to chemistry laboratory practice. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A. Chemical Structure. (4)** Lecture, three hours; discussion, one hour. Preparation: high school chemistry or equivalent background and three and one half years of high school mathematics. Recommended preparation: high school physics. Requisite: completion of Chemistry Diagnostic Test. Enforced corequisite: Mathematics 31A. Not open to students with credit for course 14A. First term of general chemistry. Survey of chemical processes, quantum chemistry, atomic and molecular structure and bonding, molecular spectroscopy. P/NP or letter grading.

**20AH. Chemical Structure (Honors). (4)** Lecture, three hours; discussion, one hour. Preparation: high school chemistry or equivalent background, high school physics, and three and one half years of high school mathematics. Enforced corequisite: Mathematics 31A. Honors course parallel to course 20A. P/NP or letter grading.

**20B. Chemical Energetics and Change. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: course 20A or 20AH, and Mathematics 31A, with grades of C– or better. Enforced corequisite: Mathematics 31B. Second term of general chemistry. Intermolecular forces and organization, phase behavior, chemical thermodynamics, solutions, equilibria, reaction rates and laws. P/NP or letter grading.

**20BH. Chemical Energetics and Change (Honors). (4)** Lecture, three hours; discussion, one hour. Enforced requisites: course 20A and Mathematics 31A with grades of B+ or better or 20AH with grade of B or better. Enforced corequisite: Mathematics 31B. Honors course parallel to course 20B. Letter grading.

**20L. General Chemistry Laboratory. (3)** Lecture, one hour; laboratory, three hours. Enforced requisite: course 14A or 20A with grade of C– or better. Enforced corequisite: course 14B or 20B. Use of balance, volumetric techniques, volumetric and potentiometric analysis; Beer's law, applications for environmental analysis and materials science. P/NP or letter grading.

**30A. Organic Chemistry I: Structure and Reactivity. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 20B with grade of C– or better. First term of organic chemistry for Chemistry, Biochemistry, and engineering majors. Covalent bonding, shapes, stereochemistry, and acid/base properties of organic molecules. Properties, synthesis, and reactions of alkanes, cycloalkanes, alkenes, and alkynes. SN2, SN1, elimination, and radical reactions. P/NP or letter grading.

**30AL. General Chemistry Laboratory II. (4)** Lecture, one hour; laboratory, six hours. Enforced requisites: courses 20B (or 20BH), 20L, and 30A (or 30AH), with grades of C– or better. Qualitative and quantitative analysis of chemical reactions and compounds, kinetics, separations, and spectroscopy. P/NP or letter grading.

**30B. Organic Chemistry II: Reactivity, Synthesis, and Spectroscopy. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 30A or 30AH, with grade of C– or better. Second term of or-

ganic chemistry for Chemistry, Biochemistry, and engineering majors. Properties, synthesis, and reactions of alcohols, ethers, sulfur compounds, aldehydes, ketones, carboxylic acids, and carboxylic acid derivatives. Organometallic compounds. Organic spectroscopy, including mass spectrometry, infrared spectroscopy, and proton and carbon nuclear magnetic resonance spectroscopy. P/NP or letter grading.

**30BL. Organic Chemistry Laboratory I. (3)** Lecture, one hour; laboratory, four hours. Requisites: courses 30A (or 30AH), 30AL and 30B, with grades of C– or better. Basic experimental techniques in organic synthesis (performing reactions, monitoring reactions, and conducting purifications) and spectroscopy (IR, NMR, mass spectrometry). Synthesis of known organic molecules on microscale level with focus on societal applications. P/NP or letter grading.

**30C. Organic Chemistry III: Reactivity, Synthesis, and Biomolecules. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 30B with grade of C– or better. Third term of organic chemistry for Chemistry, Biochemistry, and engineering majors. Chemistry of enolates, enamines, dicarbonyl compounds, and amines. Molecular orbital theory and conjugated pi systems; UV/vis spectroscopy. Aromaticity and reactions of aromatic molecules. Heterocycles, pericyclic reactions, carbohydrates, and lipids. P/NP or letter grading.

**30CL. Organic Chemistry Laboratory II. (4)** Lecture, two hours; laboratory, six hours. Enforced requisites: courses 30B and 30BL, with grades of C– or better. Enforced corequisite: course 30C. Modern techniques in synthetic organic and analytical organic chemistry. Semi-preparative scale, multistep synthesis of organic and organometallic molecules, including asymmetric catalysts. One- and two-dimensional multinuclear NMR techniques. Written reports and proposals. P/NP or letter grading.

**50. Computational Tools for Materials Modeling and Discovery. (4)** Lecture, three hours. Enforced requisite: course 14A or 20A or 20AH, with grade of C– or better. Materials are central to many modern technologies, from industrial catalysis, to batteries, computer hard disks, and quantum computers. Computational modeling gains central stage in materials research and discovery, especially with emergence of artificial intelligence techniques and big data initiatives. Introduction to computational tools enabling materials modeling, analysis, predictions, and graphical visualization. Topics such as crystallography, solid state chemistry, and surface science are brought together to enable effective modeling of solid state. Basic concepts related to programming and scripting, and basis of computational chemistry included. P/NP or letter grading.

**88A. Serendipity in Science. (2)** Seminar, two hours. Limited to 20 freshmen. Inquiry into unexpected discoveries in science that have had significant impact on society and analysis of circumstances that brought these about, beginning with discovery of helium in sun by Janssen in 1868 (using newly developed field of spectroscopy). Discovery of X rays by Röntgen in 1895 and of radioactivity by Becquerel in 1896. Other topics include discoveries important to medicine, such as penicillin by Fleming in 1928 and *cis*-platin by Rosenberg in 1969. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.



**96. Special Courses in Chemistry. (1 to 4)** Tutorial, to be arranged. May be repeated for maximum of 8 units. P/NP or letter grading.

**98XA. PEERS Collaborative Learning Workshops for Life Sciences Majors. (1)** Laboratory, three hours. Corequisite: associated undergraduate lecture course in chemistry and biochemistry for life sciences majors. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of intuition and problem-solving skills in collaborative learning environment. May be repeated four times, but only 1 unit may be applied toward graduation. P/NP grading.

**98XB. PEERS Collaborative Learning Workshops for Physical Sciences and Engineering Majors. (1)** Laboratory, three hours. Corequisite: associated undergraduate lecture course in chemistry and biochemistry for physical sciences and engineering majors. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of intuition and problem-solving skills in collaborative learning environment. May be repeated four times, but only 1 unit may be applied toward graduation. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**C100. Genomics and Computational Biology. (5)** Lecture, four hours; discussion, one hour. Introduction for biochemistry students of technologies and experimental data of genomics, as well as computational tools for analyzing them. Biochemistry and molecular biology dissected life into its component parts, one gene at a time, but lacked integrative mechanisms for putting this information back together to predict what happens in complete organism (e.g., over 80 percent of drug candidates fail in clinical trials). High-throughput technologies such as sequencing, microarrays, mass-spec, and robotics have given biologists incredible new capabilities to analyze complete genomes, expression patterns, functions, and interactions across whole organisms, populations, and species. Use and analysis of such datasets becomes essential daily activity for biomedical scientists. Core principles and methodologies for analyzing genomics data to answer biological and medical questions, with focus on concepts that guide data analysis rather than algorithm details. Concurrently scheduled with course C200. P/NP or letter grading.

**101. Catalysis in Modern Drug Discovery. (4)** Lecture, three hours. Enforced prerequisite: course 14D or 30B with a grade of C– or better. Overview of drug discovery process with focus on transition metal catalysis in synthesis of medicines. Discussion of process by which drugs are discovered, from lead optimization to process development. Introduction to transition metal catalysis, area of critical importance in modern drug development. Study of fundamental concepts of transition metal catalysis and how catalysis has played transformative role in synthesis of modern medicines. Particular attention throughout to discussion of case studies that emphasize broad impact of medicinal chemistry and importance of catalysis in drug discovery. Highlights how organic chemistry can impact world around us, particularly in development of pharmaceuticals. P/NP or letter grading.

**103. Environmental Chemistry. (4)** Lecture, four hours; discussion, one hour. Requisites: courses 30B, 30BL, 110A, 153A (or 153AH), 153L. Chemical aspects of air and water pollution, solid waste disposal, energy resources, and pesticide effects. Chemical reactions in environment and effect of chemical processes on environment. P/NP or letter grading.

**C105. Introduction to Chemistry of Biology. (4)** Lecture, three hours; discussion, one hour. Requisite: course 153A with grade of C– or better. Introduction to chemical biology. Topics include computational chemical biology, utility of synthesis in biochemical re-

search, peptidomimetics, designed reagents for cellular imaging, natural product biosynthesis, protein engineering and directed evolution, cell biology of metal ions, imaging metal ions in cells, metal-containing drugs. Concurrently scheduled with course CM205A. Letter grading.

**C107. Organometallic Chemistry. (4)** Lecture/discussion, three hours. Enforced prerequisite or corequisite: course 172. Survey of synthesis, structure, and reactivity (emphasizing mechanistic approach) of compounds containing carbon bonded to elements selected from main group metals, metalloids, and transition metals, including olefin complexes and metal carbonyls; applications in catalysis and organic synthesis. Concurrently scheduled with course C207. P/NP or letter grading.

**C108. Mass Spectrometry for Chemists and Biochemists. (2)** Lecture, one hour; laboratory, four hours. Requisite: course 153A. Introduction to principles and practice of organic and inorganic mass spectrometry. Topics include EI, CI, ICPMS, GC/MS, LC/MS, ESI, MALDI, MS/MS protein identification, and proteomics. Concurrently scheduled with course C208. P/NP or letter grading.

**110A. Physical Chemistry: Chemical Thermodynamics. (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Requisites: course 20B, Mathematics 32A or 3C (for life sciences majors), Physics 1A, 1B, and 1C (may be taken concurrently), or 1AH, 1BH, and 1CH (may be taken concurrently), or 5A, 5B, and 5C (may be taken concurrently), or 6A, 6B, and 6C (may be taken concurrently). Fundamentals of thermodynamics, chemical and phase equilibria, thermodynamics of solutions, electrochemistry. P/NP or letter grading.

**110B. Topics in Physical Chemistry. (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Requisites: courses 110A, 113A, Mathematics 32B, all with grades of C– or better. Kinetic theory of gases, principles of statistical mechanics, statistical thermodynamics, equilibrium structure and free energy, relaxation and transport phenomena, macroscopic chemical kinetics, molecular-level reaction dynamics. P/NP or letter grading.

**113A. Physical Chemistry: Introduction to Quantum Mechanics. (4)** Lecture, three hours; discussion, one hour. Requisites: course 20B, Mathematics 32A, 32B, 33A, Physics 1A, 1B, and 1C, or 1AH, 1BH, and 1CH, or 5A, 5B, and 5C, or 6A, 6B, and 6C, with grades of C– or better. Departure from classical mechanics: Schrödinger versus Newton equations; model systems: particle-in-box, harmonic oscillator, rigid rotor, and hydrogen atom; approximation methods: perturbation and variational methods; many-electron atoms, spin, and Pauli principle, chemical bonding. P/NP or letter grading.

**C113B. Quantum Chemistry Methods. (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Requisite: course 113A. Complete introduction to electronic structure theory methods used by general computational chemistry community, focusing primarily on *ab initio* methods. Students gain understanding of electronic structure methods and tools to identify which methods are suitable for which types of systems. Methods covered include Hartree Fock, density-functional theory, perturbative methods, and modern high-correlation methods; and highlight algorithms necessary to implement these methods efficiently. Concurrently scheduled with course C213B. P/NP or letter grading.

**114. Physical Chemistry Laboratory. (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: courses 30AL, 110A, and 113A, with grades of C– or better. Enforced corequisite: course 110B. Lectures include techniques of physical measurement, error analysis and statistics, special topics. Laboratory includes spectroscopy, thermodynamic measurements, and chemical dynamics. P/NP or letter grading.

**114H. Physical Chemistry Laboratory (Honors). (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: courses 30AL, 110A, and 113A, with grades of B or better. Enforced corequisite: course 110B or C113B. Lectures include techniques of physical measurement, error analysis and statistics, special

topics. Laboratory includes topics in physical chemistry to be selected in consultation with instructor. P/NP or letter grading.

**C115A–C115B. Quantum Chemistry. (4–4)** Lecture, four hours; discussion, one hour. Requisites: course 113A, Mathematics 31A, 31B, 32A, 32B, 33A, with grades of C– or better. Recommended: knowledge of differential equations equivalent to Mathematics 134 or 135 or Physics 131 and of analytic mechanics equivalent to Physics 105A. Course C115A or Physics 115B with grade of C– or better is requisite to C115B. Students entering course C115A are normally expected to take course C115B in following term. Designed for chemistry students with serious interest in quantum chemistry. Postulates and systematic development of nonrelativistic quantum mechanics; expansion theorems; wells; oscillators; angular momentum; hydrogen atom; matrix techniques; approximation methods; time dependent problems; atoms; spectroscopy; magnetic resonance; chemical bonding. May be concurrently scheduled with courses C215A–C215B. P/NP or letter grading.

**C115C. Advanced Quantum Chemistry: Applications. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 113A, C115B. Topics in quantum chemistry selected from molecular structure, collision processes, theory of solids, symmetry and its applications, and theory of electromagnetic radiation. Concurrently scheduled with course C215C. P/NP or letter grading.

**M117. Structure, Patterns, and Polyhedra. (5)** (Same as Honors Collegium M180.) Lecture, four hours; activity, two hours. Exploration of structures and their geometric underpinnings, with examples and applications from architecture (space frames, domes), biology (enzyme complexes, viruses), chemistry (symmetry, molecular cages), design (tiling), engineering (space filling), and physics (crystal structures) to effect working knowledge of symmetry, two-dimensional patterns, and three-dimensional solids. P/NP or letter grading.

**118. Colloidal Dynamics Laboratory. (4)** Lecture, two hours; laboratory, eight hours. Requisites: courses 110A and 110B, with grades of B or better, or equivalent statistical mechanics courses from engineering, mathematics, or physics. One aspect of dispersions of microscale particles in viscous liquids is that such dispersions can be used as visual model systems for studying phases that chemistry undergraduate students typically learn about for nanoscale and molecular systems, yet they do not see. Temperature continuously excites molecules and causes rearrangements, giving dynamic views of macromolecules and particles in many fields, including cell and molecular biology, chemical engineering, chemistry, materials science, and physics. Letter grading.

**M120. Soft Matter Laboratory. (4)** (Same as Physics M180G.) Lecture, 90 minutes; laboratory, four hours. Requisites: Physics 110B, 115A. Students gain experience of conducting independent research in experimental biological physics. Construction of modern microscope. Use of microscope to image biological specimens. Students learn optics, diffraction, imaging, microscopy, computational physics, and/or fluorescent labeling. P/NP or letter grading.

**121. Special Topics in Physical Chemistry. (4)** Lecture, four hours. Requisite: course 110B. Recommended: course 113A. Topics of considerable research interest presented at level suitable for students who have completed junior-year courses in physical chemistry. P/NP or letter grading.

**C122. Mathematical Methods for Chemistry. (4)** Lecture, four hours. Enforced requisites: Mathematics 31A, 31B, 32A, 32B. Review of basic mathematics necessary to study physical chemistry at graduate level, with focus on review of vectors, linear algebra, elementary complex analysis, and solution of ordinary and partial differential equations. Development of problem-solving skills through homework based on these mathematical techniques, with examples from physical chemistry. Concurrently scheduled with course C222. P/NP or letter grading.

**C123A-C123B. Classical and Statistical Thermodynamics. (4-4)** Lecture, four hours; discussion, one hour. Requisite: course 110B or 156. Recommended: course 113A. Rigorous presentation of fundamentals of classical thermodynamics. Principles of statistical thermodynamics: probability, ensembles, partition functions, independent molecules, and perfect gas. Applications of classical and statistical thermodynamics selected from diatomic and polyatomic gases, solid and fluid states, phase equilibria, electric and magnetic effects, ortho-para hydrogen, chemical equilibria, reaction rates, imperfect gas, nonelectrolyte and electrolyte solutions, surface phenomena, high polymers, gravitation. May be concurrently scheduled with courses C223A-C223B. P/NP or letter grading.

**125. Introduction to Python Programming and Machine Learning. (4)** Lecture, three hours; computer laboratory, one hour. Requisite: course 14C or 30A, with grade of C- or better. Introduction to programming in Python and to machine learning and its many applications within chemical sciences. Topics include fundamentals of Python programming, routine numerical procedures such as optimization and linear regression, and overview of machine learning, with special emphasis on neural networks and deep learning, including implementation. Exploration of mainstream applications of machine learning to problems of chemical interest, including molecular simulation, protein structure prediction, and computer-aided drug and material design/discovery. Particular topics to be covered and projects to be completed may be decided in part based on student interest and input. P/NP or letter grading.

**C126A. Computational Methods for Chemists. (4)** Lecture, one hour; laboratory, four hours. Requisites: courses 110A, 113A, Mathematics 33A. Covers some basics of scientific coding. Introduction to advanced applications provided through commercially available computational packages. Includes quantum mechanical techniques for chemistry, reactivity, spectroscopy, solid state calculations; statistical mechanical techniques for chemistry and biochemistry; python coding, basic algorithms, machine learning, and numerical techniques. Concurrently scheduled with course C226A. P/NP or letter grading.

**CM127. Synthetic Biology for Biofuels. (4)** (Same as Chemical Engineering CM127.) Lecture, four hours; discussion, one hour. Requisite: course 153A. Engineering microorganisms for complex phenotype is common goal of metabolic engineering and synthetic biology. Production of advanced biofuels involves designing and constructing novel metabolic networks in cells. Such efforts require profound understanding of biochemistry, protein structure, and biological regulations and are aided by tools in bioinformatics, systems biology, and molecular biology. Fundamentals of metabolic biochemistry, protein structure and function, and bioinformatics. Use of systems modeling for metabolic networks to design microorganisms for energy applications. Concurrently scheduled with course CM227. Letter grading.

**C132A. Core Principles in Cell and Molecular Biology. (4)** Lecture, four hours. Requisites: Life Sciences 7A, 7B, 7C, 23L. Students gain broad foundational knowledge and skills for rigorous research in emerging areas of cell and molecular biology. Focus on foundational knowledge of cell and molecular biology research areas including cell cycle, cell signaling, cell metabolism, cell communication, cell states and fates, genomes, and proteomes. Focus on skills development for cell and molecular biology research. Students are equipped with theory of modern experimental approaches, and acquire hands-on skills training in designing experiments and analyzing data using these approaches. Students meet with directors of shared core facilities that specialize in these approaches to facilitate use of these approaches in their research. Continuation of in-depth analysis of rigorous experimental design and statistical analyses in cell and molecular biology. Concurrently scheduled with course C232A. P/NP or letter grading.

**136. Organic Structural Methods. (5)** Lecture, two hours; laboratory, eight hours. Requisites: courses 30C and 30CL, with grades of C- or better. Laboratory

course in organic structure determination by chemical and spectroscopic methods; microtechniques. P/NP or letter grading.

**C138. Natural Product Biosynthesis: Chemical Logic and Enzymatic Machinery. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 30A, 30B, 30C, 153A. Covers fundamental chemical logic and enzyme mechanisms involved in biosynthesis of natural products. Discussion of major classes of natural product including polyketides, nonribosomal peptides, terpenes, alkaloids. Emphasis on biosynthetic logic used by nature to form complex molecules. Discussion of several important enzyme families in context of biosynthesis, including assembly-line megasynthases, group transferases, oxidoreductases, etc. Historical account of natural product isolation and characterization, as well as modern account of synthetic biology and genome based efforts that are used in discovery of new natural products. Includes extensive survey of scientific literature in format of presentations and discussions. Concurrently scheduled with course C238. Letter grading.

**C140. Bionanotechnology. (4)** Lecture, three hours. Requisites: courses 30C, 110A. Basic physical, chemical, and biological principles in bionanotechnology; materials and strategies for top-down and bottom-up fabrication of ordered biologically derived molecules, characterization and detection techniques, and biomimetic materials and applications at nanoscale. Concurrently scheduled with course C240. P/NP or letter grading.

**C143A. Structure and Mechanism in Organic Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 30C and 30CL (may be taken concurrently), 110B, and 113A, with grades of C- or better. Mechanisms of organic reactions. Acidity and acid catalysis; linear free energy relationships; isotope effects. Molecular orbital theory; photochemistry; pericyclic reactions. May be concurrently scheduled with course C243A. P/NP or letter grading.

**C143B. Mechanism and Structure in Organic Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisite: course C143A with grade of C- or better. Mechanisms of organic reactions; structure and detection of reactive intermediates. May be concurrently scheduled with course C243B. P/NP or letter grading.

**144. Practical and Theoretical Introductory Organic Synthesis. (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: courses 30C and 30CL, with grades of C- or better. Lectures on modern synthetic reactions and processes, with emphasis on stereospecific methods for carbon-carbon bond formation. Laboratory methods of synthetic organic chemistry, including reaction techniques, synthesis of natural products, and molecules of theoretical interest. P/NP or letter grading.

**C145. Theoretical and Computational Organic Chemistry. (4)** Lecture, two hours; discussion, one hour; computer laboratory, one hour. Requisites: courses 30C, 113A. Applications of quantum mechanical concepts and methods to understand and predict organic structures and reactivities. Computational modeling methods, including laboratory experience with force-field and quantum mechanical computer calculations. Concurrently scheduled with course C245. P/NP or letter grading.

**147. Careers in Chemistry and Biochemistry. (2)** Seminar, two hours. Exploration of employment and career opportunities available to students. Different speakers give short presentations to describe their career paths in areas such as industry, government, research and development, education, law, and health-care, explain how their education in chemistry and biochemistry helped them become successful, and what actual chemistry was used in their particular professions. Students learn and understand real-life applications of chemical concepts found in their coursework. P/NP or letter grading.

**C150. Research Methods and Integrity in Cellular and Molecular Biology. (4)** Lecture, two hours; discussion, two hours. Data analysis and management, statistical methods, use of antibody and kit reagents, figure preparation, authorship, mentoring, human sub-

jects protection, animal subject protection, and conflict of interest. May be repeated for credit. Concurrently scheduled with course C250. Letter grading.

**151. Machine Learning for Chemistry. (4)** (Formerly numbered 51.) Lecture, three hours. Requisites: course 20B or 20BH, Mathematics 33A or 33AH. Introduction to machine learning and its many applications within chemical sciences. Topics include widely-used approaches for modeling large and complex data sets, including neural networks and deep learning, supervised and unsupervised learning, and dimensionality reduction. Exploration of mainstream applications of machine learning to problems of chemical interest, including molecular simulation and computer-aided drug and material design/discovery. Succinct introduction to linear algebra and programming in Python. Particular topics to be covered and projects to be completed may be decided in part based on student interest and input. P/NP or letter grading.

**153A. Biochemistry: Introduction to Structure, Enzymes, and Metabolism. (4)** Lecture, four hours; discussion, one hour. Requisite: course 14D or 30B, with grade of C- or better. Recommended: Life Sciences 2, 3, and 23L, or 7A. Structure of proteins, carbohydrates, and lipids; enzyme catalysis and principles of metabolism, including glycolysis, citric acid cycle, and oxidative phosphorylation. P/NP or letter grading.

**153AH. Biochemistry: Introduction to Structure, Enzymes, and Metabolism (Honors). (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Requisite: course 14D or 30B, with grade of C- or better. Recommended: Life Sciences 2, 3, 23L. Honors course parallel to course 153A. P/NP or letter grading.

**153B. Biochemistry: DNA, RNA, and Protein Synthesis. (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Requisite: course 153A or 153AH. Recommended: Life Sciences 2, 3, and 23L, or 7A and 7B. Nucleotide metabolism; DNA replication; DNA repair; transcription machinery; regulation of transcription; RNA structure and processing; protein synthesis and processing. P/NP or letter grading.

**153BH. Biochemistry: DNA, RNA, and Protein Synthesis (Honors). (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Enforced requisites: course 153A or 153AH, Life Sciences 2, 3, 23L. Honors course parallel to course 153B. P/NP or letter grading.

**153C. Biochemistry: Biosynthetic and Energy Metabolism and Its Regulation. (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Requisite: course 153A or 153AH. Metabolism of carbohydrates, fatty acids, amino acids, and lipids; photosynthetic metabolism and assimilation of inorganic nutrients; regulation of these processes. P/NP or letter grading.

**153CH. Biochemistry: Biosynthetic and Energy Metabolism and Its Regulation (Honors). (4)** Lecture, three hours; discussion, two hours. Requisite: course 153A or 153AH. Honors course parallel to course 153C. P/NP or letter grading.

**153D. Introduction to Protein Structural Biology. (4)** Lecture, three hours; discussion, one hour. Requisites: course 153A, Life Sciences 3 or 7A. Proteins are diverse set of macromolecules that perform critical functions within cells, ranging from enzymes that catalyze metabolic reactions to proteins that enable pathogens to cause disease. Introduction to field of protein structural biology, that seeks to understand molecular basis of protein function through visualizing atomic structures and by investigating how alterations in protein structure affects function. Students gain fundamental understanding of protein structure and its relationship to function and learn how experimental and computational methods are used to determine three-dimensional structures of proteins. Hands-on training in computer graphics programs and online tools used to visualize and analyze protein structures. Letter grading.

**153L. Biochemical Methods I. (4)** Lecture, two hours; laboratory, four hours. Requisites: courses 14BL or 20L and 30AL, and 153A or 153AH (may be taken concurrently), with grades of C- or better. Integrated term-long project involving biofuel production in bacteria. Purification of key enzyme for alcohol production from bacteria via affinity chromatography. Assessment

of protein amount, purity, and activity of enzyme. Techniques include protein determination by Bradford assay, polyacrylamide gel electrophoresis, immunoblotting, and enzyme activity assays to determine enzyme activity (Km, Vmax, inhibitor studies). P/NP or letter grading.

**154. Biochemical Methods II. (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: courses 153A or 153AH, 153B or 153BH, and 153L, with grades of C- or better. Recommended: course 156. Two to three major laboratory projects using biochemical laboratory techniques to investigate contemporary problems in biochemistry. Topics include transcription activation, molecular basis of DNA-protein interactions, biochemical basis of platelet activation, and initiation of blood clotting cascade. Experiments entail characterizing function of proteins, nucleic acids, and lipids involved in these processes. P/NP or letter grading.

**C155. Mitochondria in Medicine, Biology, and Chemistry. (1)** Seminar, two hours every other week. Open to undergraduate and graduate science majors considering or currently conducting research in areas related to mitochondria. Large number of physiological and pathophysiological processes involve mitochondrial function and dysfunction. Focus on understanding how mitochondria metabolism, form, and function impact health and disease. Physiology and cell biology of healthy and dysfunctional mitochondria critically assessed at subcellular, cellular, tissue, and organismal levels. Topics include in-depth analyses of literature and critical evaluation of experimental design and methods of current research. May be repeated for credit. Concurrently scheduled with course CM255. P/NP grading.

**156. Physical Biochemistry. (4)** Lecture, four hours; discussion, one hour. Requisites: courses 110A, 153A. Biochemical kinetics; solution thermodynamics of biochemical systems; multiple equilibria; hydrodynamics; energy levels, spectroscopy, and bonding; topics from structural, statistical, and electrochemical methods of biochemistry. P/NP or letter grading.

**M157. Food: Molecules, Microbes, Environment. (4)** (Same as Food Studies M157.) Lecture, three hours; discussion, one hour. Requisite: course 153A. Recommended requisites: Life Sciences 7A, 7B. Study of science of food. Study of food units physical, biological, environmental, social, and behavioral sciences. Use of scientific concepts to explain properties of food. Covers range of topics that focus on science of cooking, critical role of microbes in transformation of foods, genetic and environmental concerns related to acquisition of food, and impact of different dietary systems on metabolism and physiology. Comprises four major interrelated topics: molecules of food and their sources, science of cooking, acquisition of food, eating. P/NP or letter grading.

**C159. Mechanisms of Gene Regulation. (4)** Lecture, four hours. Requisite: course 153B. RNA polymerase structures and mechanisms; promoter recognition and transcription cycle; mechanisms of activation; transcriptional poising and elongation control; Mediator of transcription; chromatin remodeling and modification; epigenetic regulation; cotranscriptional and transcription-coupled RNA processing; impact of transcription on mRNA processing and stability; nuclear export of mRNA. Concurrently scheduled with course CM259. P/NP or letter grading.

**CM160A. Introduction to Bioinformatics. (4)** (Same as Computer Science CM121.) Lecture, four hours; discussion, two hours. Requisites: Computer Science 32 or Program in Computing 10C with grade of C- or better, and one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Introduction to bioinformatics and methodologies, with emphasis on concepts and inventing new computational and statistical techniques to analyze biological data. Focus on sequence analysis and alignment algorithms. Concurrently scheduled with course CM260A. P/NP or letter grading.

**C164. Free Radicals in Biology and Medicine. (2 to 4)** Lecture, three hours. Enforced requisites: courses 153A and either 153B or 153C, with grades of C- or better. Biochemical reactivity of dioxygen, its role in mitochondrial metabolism, neurodegenerative diseases, apoptosis, and aging. Discussion of radical reactions, how they are harnessed to achieve enzyme catalysis, and how free radicals contribute to or regulate essential biological processes. These same reactions run amok under certain types of stress and can contribute to wide variety of diseases, including neurodegenerative diseases (e.g., Huntington's, Parkinson's, and Alzheimer's diseases), mitochondrial diseases, atherosclerosis, and aging. Concurrently scheduled with course C264. P/NP or letter grading.

**C165. Metabolic Control by Protein Modification. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 153A, 153B, 153C. Biochemical basis of controlling metabolic pathways by posttranslational modification of proteins, including phosphorylation and methylation reactions. Concurrently scheduled with course C265. Letter grading.

**166. RNA Structure, Recognition, and Function. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 153A, 153B, Life Sciences 3 and 23L, or 7A. Recent years have seen explosion in biochemical characterization of diverse structures and functions of RNA molecules in metabolism of living systems. RNA has been shown to act both as catalyst in living systems and as potent modulator of gene expression control at every level of gene expression pathways (transcription, RNA processing, translation, degradation). RNA molecules now being used as therapeutic agents in gene therapy approaches. Coverage of these various aspects and in-depth analysis of RNA structure and function, using primary research literature and analysis of molecular structures of RNA and RNA-protein complexes. Letter grading.

**CM170. Biochemistry and Molecular Biology of Photosynthetic Apparatus. (2 to 4)** (Same as Molecular, Cell, and Developmental Biology M170.) Lecture, two to three hours; discussion, zero to two hours. Requisites: courses 153A and 153B, or Life Sciences 3 and 23L, and course 153L. Recommended: courses 153C, 154, Life Sciences 4. Light harvesting, photochemistry, electron transfer, carbon fixation, carbohydrate metabolism, pigment synthesis in chloroplasts and bacteria. Assembly of photosynthetic membranes and regulation of genes encoding those components. Emphasis on understanding of experimental approaches. Concurrently scheduled with course C270. P/NP or letter grading.

**171. Intermediate Inorganic Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisite: course 30B with grade of C- or better. Chemical bonding; structure and bonding in solid state; main group, transition metal, lanthanide and actinide compounds and reactions; catalysis, spectroscopy, special topics. P/NP or letter grading.

**C172. Advanced Inorganic Chemistry. (4)** (Formerly numbered 172.) Lecture, three hours; discussion, one hour. Requisite: course 171 with grade of C- or better. Systematic approach to modern inorganic chemistry, structure and bonding of inorganic molecules and solids, structure/reactivity relationships, vibrational spectra of complexes, electronic structure and ligand-field theory, mechanisms of inorganic reactions, bonding and spectroscopy of organometallic compounds, transition metals in catalysis and biology. Concurrently scheduled with course C272. P/NP or letter grading.

**C173. Electrochemical Systems. (4)** Lecture, three hours; discussion, two hours. Requisites: course 110A, Mathematics 33B. Introduction to principles of electrochemical systems commonly applied in research of inorganic chemistry, materials sciences, and nanotechnology. With examples in recent literature and discussions of experimental practice, focus on qualitative and quantitative evaluation of information obtained from electrochemical characterization methods. Understanding of course contents helps appreciate research and technologies in catalysis, energy storage and conversion, and advanced environmental technologies. Concurrently scheduled with course C273. P/NP or letter grading.

**C174. Inorganic and Metalorganic Laboratory Methods. (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: courses 30CL and 171, with grades of C- or better. Synthesis of inorganic compounds, including air-sensitive materials; Schlenck techniques; chromatographic and ion exchange methods; spectroscopic characterization and literature applications. Concurrently scheduled with course C274. P/NP or letter grading.

**C175. Inorganic Reaction Mechanisms. (4)** Lecture, three hours. Requisites: courses 110A, 110B, 113A, and 172, with grades of C- or better. Survey of inorganic reactions; mechanistic principles; electronic structure of metal ions; transition-metal coordination chemistry; inner- and outer-sphere and chelate complexes; substitution, isomerization, and racemization reactions; stereochemistry; oxidation/reduction, free radical, polymerization, and photochemical reactions of inorganic species. May be concurrently scheduled with course C275. P/NP or letter grading.

**C176. Group Theory and Applications to Inorganic Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 113A and 172, with grades of C- or better. Group theoretical methods; molecular orbital theory; ligand-field theory; electronic spectroscopy; vibrational spectroscopy. May be concurrently scheduled with course C276A. P/NP or letter grading.

**C180. Solid-State Chemistry. (4)** Lecture, three hours. Requisite: course 172 with grade of C- or better. Survey of new materials and methods for their preparation and characterization, with emphasis on band theory and its relationship to chemical, optical, transport, and magnetic properties, leading to deeper understanding of these materials. Concurrently scheduled with course C280. P/NP or letter grading.

**C181. Polymer Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 30B, 110A. Synthesis of organic and inorganic macromolecules, thermodynamic and statistical mechanical descriptions of unique properties of polymers, polymer characterization methods, and special topics such as conductive and biomedical polymers and polymeric reagents in synthesis. Concurrently scheduled with course C281. P/NP or letter grading.

**184. Chemical Instrumentation. (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: courses 30CL and 110A, with grades of C- or better. Theory and practice of instrumental techniques of chemical and structural analysis, including atomic absorption spectroscopy, gas chromatography, mass spectrometry, nuclear magnetic resonance, polarography, X-ray fluorescence, and other modern methods. P/NP or letter grading.

**185. Materials Chemistry Laboratory. (5)** Lecture, two hours; laboratory, eight hours. Requisites: courses 30AL, 110A, 113A, 171. Materials synthesis and physical properties of complex materials. Combines synthetic skills with fundamental physical understanding and characterization in approximately equal proportions to relate materials synthesis to materials function. Letter grading.

**M186. Stochastic Processes in Biochemical Systems. (4)** (Same as Computational and Systems Biology M175.) Lecture, three hours. Requisites: Life Sciences 1, 2, 3, and 4, or 7A, 7B, and 7C, Mathematics 33B, Electrical and Computer Engineering 131A or Mathematics 170A or Statistics 100A. Covers random and stochastic processes in play in biochemical systems, including ion channels, cytoskeleton, cell migration and mitosis, gene expression networks, and signal transduction. Covers mathematical tools such as continuous and discrete Markov processes, first passage, time escape problems, statistical mechanics, and information theory. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**192A-192B. Undergraduate Practicum in Chemistry and Biochemistry. (4-4)** Lecture, one hour; laboratory, four hours; workshop, two hours. Enforced prerequisites: courses 14BL and 14CL, or 20L and 30AL, or Science Education 100SL. Intended for students who are planning careers in secondary science chemistry teaching. Complements service learning California Teach science courses that involve teaching field experiences in middle school and high school classrooms. Examination of chemistry issues such as chemical storage and use, waste management, laboratory organization, safety, and techniques. P/NP or letter grading.

**192C-192D. Undergraduate Assistant Education Practicum in Chemistry and Biochemistry. (4-2)** Seminar, one hour; assigned setting, six hours (course 192C) or five hours (course 192D). Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students to assist in chemistry and biochemistry lectures. Students assist in preparation of materials and development of innovative programs under guidance of faculty members and teaching assistants. May not be applied toward course requirements for any departmental major. May be repeated for credit with consent of instructor. Individual contract required. Information and contracts may be obtained from department. P/NP grading.

**M192E. Introduction to Collaborative Learning Theory and Practice. (1)** (Same as Atmospheric and Oceanic Sciences M192A, Computer Science M192A, Life Sciences M192A, Mathematics M192A, and Physics M192S.) Seminar, one hour. Training seminar for undergraduate students who are selected for learning assistant (LA) program. Exploration of current topics in pedagogy and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. Letter grading.

**192F. Methods and Application of Collaborative Learning Theory and Practice: Introduction, Methods, and Applications. (2 to 4)** Seminar, one hour; clinic, one to eight hours. Requisite: course 192E or Life Sciences 192A or Physics 192S with grade of C- or better. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated for four times for credit. Letter grading.

**193A. Journal Club Seminars: UC LEADS and MARC. (2)** Seminar, three hours. Designed for juniors/seniors in undergraduate research training programs such as UC LEADS and MARC or those who have strong com-

mitment to pursue graduate studies in natural sciences, engineering, or mathematics. Weekly reading and oral presentations of research or research papers selected from current literature. May be repeated for credit. Letter grading.

**193B. Journal Club Seminars: Chemistry and Biochemistry. (2)** Seminar, three hours. Limited to undergraduate students. Discussion of readings selected from current literature in particular field. May be repeated for credit. P/NP grading.

**194. Research Group Seminars: Chemistry and Biochemistry. (1)** Seminar, three hours. Designed for undergraduate students who are part of research group. Advanced study and analysis of current topics in physical, organic, or inorganic chemistry or biochemistry. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. P/NP grading.

**196A. Research Apprenticeship in Chemistry and Biochemistry. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. Consult department for additional information regarding requirements, enrollment petitions, and written proposal deadlines. May be repeated for maximum of 8 units. Individual contract required. P/NP grading.

**196B. Research Apprenticeship in Chemistry and Biochemistry. (2 to 4)** Tutorial, three hours per week per unit. Enforced prerequisite: course 196A (8 units). Limited to juniors/seniors. Research apprenticeship for upper-division students under guidance of faculty mentor. Consult department for additional information regarding requirements, enrollment petitions, and written proposal deadlines. May be taken for maximum of 4 units. Individual contract required. P/NP or letter grading.

**199. Directed Research in Chemistry and Biochemistry. (2 to 4)** Tutorial, three hours per week per unit. Enforced prerequisite: course 196A (8 units). Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating report required. May be repeated for maximum of 12 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

**C200. Genomics and Computational Biology. (5)** Lecture, four hours; discussion, one hour. Introduction for biochemistry students of technologies and experimental data of genomics, as well as computational tools for analyzing them. Biochemistry and molecular biology dissected life into its component parts, one gene at a time, but lacked integrative mechanisms for putting this information back together to predict what happens in complete organism (e.g., over 80 percent of drug candidates fail in clinical trials). High-throughput technologies such as sequencing, microarrays, mass-spec, and robotics have given biologists incredible new capabilities to analyze complete genomes, expression patterns, functions, and interactions across whole organisms, populations, and species. Use and analysis of such datasets becomes essential daily activity for biomedical scientists. Core principles and methodologies for analyzing genomics data to answer biological and medical questions, with focus on concepts that guide data analysis rather than algorithm details. Concurrently scheduled with course C100. S/U or letter grading.

**201. Scientific Proposal Writing. (2)** Lecture, three hours. Designed for graduate biochemistry and molecular biology students. How to write scientific proposals to be submitted to funding agencies. How to develop curricula vitae, put together grant proposals, and critique proposals. Letter grading.

**203B. Ethics in Chemical Research. (2)** Seminar, one hour. Discussion of ethics in graduate education, teaching, and chemical research, including issues such as conflicts of interest, plagiarism, intellectual property, sexual harassment, and other topics related to ethical conduct of research. S/U grading.

**203C. Research Integrity and Ethics in Genetics Research. (2)** Lecture, 90 minutes. Data analysis and management, statistical methods, use of commercial reagents, microscopy data analysis, figure prepara-

tion, authorship, mentoring, human subjects protection, animal subject protection, and conflict of interest. May be repeated for credit. S/U grading.

**203D. Advanced Topics in Responsible Conduct in Cellular and Molecular Biology Research. (2)** Seminar, two hours. Enforced prerequisite: course 203A or 203B or 203C. Cellular and molecular biology PhD students continue to learn how to conduct research in field to reliably advance knowledge while maintaining ethical principles. Designed to be taken in fourth or fifth year of PhD work where students would have already been exposed to many challenges of performing and reporting experiments and who are in stage of their careers where they are beginning to think of applying for postdoctoral fellowships and research and teaching positions. Course helps fulfill training requirement in research integrity for NIH training grants and individual NRSA awards. S/U grading.

**204. Student Research Seminar. (2)** Seminar, one hour. Limited to students supported by UCLA program in Cellular and Molecular Biology Predoctoral Training. Research seminar presented by second- and third-year students. S/U grading.

**CM205A. Introduction to Chemistry of Biology. (4)** (Same as Pharmacology M205A.) Lecture, three hours; discussion, one hour. Introduction to chemical biology. Topics include computational chemical biology, utility of synthesis in biochemical research, peptidomimetics, designed reagents for cellular imaging, natural product biosynthesis, protein engineering and directed evolution, cell biology of metal ions, imaging metal ions in cells, metal-containing drugs. Concurrently scheduled with course C105. Letter grading.

**M205B. Issues on Chemistry/Biology Interface. (2)** (Same as Pharmacology M205B.) Seminar, one hour. Requisite: course CM205A. Selected talks and papers presented by training faculty on solving problems and utilizing tools in chemistry and molecular biology on chemistry/biology interface (CBI). S/U grading.

**206. Chemistry of Biology Seminar. (2)** Seminar, three hours. Limited to students supported by UCLA program in Chemistry/Biology Interface Predoctoral Training. Current research topics at interface of chemistry and biology. May be repeated for credit. S/U grading.

**C207. Organometallic Chemistry. (4)** Lecture/discussion, three hours. Requisite or corequisite: course 172. Survey of synthesis, structure, and reactivity (emphasizing mechanistic approach) of compounds containing carbon bonded to elements selected from main group metals, metalloids, and transition metals, including olefin complexes and metal carbonyls; applications in catalysis and organic synthesis. Concurrently scheduled with course C107. S/U or letter grading.

**C208. Mass Spectrometry for Chemists and Biochemists. (2)** Lecture, one hour; laboratory, four hours. Requisite: course 153A. Introduction to principles and practice of organic and inorganic mass spectrometry. Topics include EI, CI, ICPMS, GC/MS, LC/MS, ESI, MALDI, MS/MS protein identification, and proteomics. Concurrently scheduled with course C108. S/U or letter grading.

**209. Introduction to Chemistry Research. (2)** Seminar, two hours. Half-hour presentations each session by three different chemistry professors to introduce their research programs. S/U grading.

**210. Advanced Topics in Chemical Research. (2)** Seminar, one hour. Designed for second-year graduate students to help them engage contemporary challenges in chemical research and their own research projects. Building of critical thinking skills and proposal writing skills. S/U grading.

**C213B. Quantum Chemistry Methods. (4)** Lecture, three hours; discussion, one hour; tutorial, one hour. Requisite: course 113A. Complete introduction to electronic structure theory methods used by general computational chemistry community, focusing primarily on *ab initio* methods. Students gain understanding of electronic structure methods and tools to identify which methods are suitable for which types of systems. Methods covered include Hartree Fock, density-functional theory, perturbative methods, and modern high-correlation methods; and highlight algo-

rithms necessary to implement these methods efficiently. Concurrently scheduled with course C113B. Independent study project required of graduate students. S/U or letter grading.

**C215A-C215B. Quantum Chemistry: Methods. (4-4)** Lecture, four hours; discussion, one hour. Requisites: course 113A, Mathematics 31A, 31B, 32A, 32B, 33A, with grades of C- or better. Recommended: knowledge of differential equations equivalent to Mathematics 134 or 135 or Physics 131 and of analytic mechanics equivalent to Physics 105A. Course C215A or Physics 115B with grade of C- or better is requisite to C215B. Students entering course C215A are normally expected to take course C215B in following term. Designed for chemistry students with serious interest in quantum chemistry. Postulates and systematic development of nonrelativistic quantum mechanics; expansion theorems; wells; oscillators; angular momentum; hydrogen atom; matrix techniques; approximation methods; time dependent problems; atoms; spectroscopy; magnetic resonance; chemical bonding. May be concurrently scheduled with courses C115A-C115B. S/U or letter grading.

**C215C. Advanced Quantum Chemistry: Applications. (4)** Lecture, three hours; discussion, one hour. Requisite: course C215B. Topics in quantum chemistry selected from molecular structure, collision processes, theory of solids, symmetry and its applications, and theory of electromagnetic radiation. Concurrently scheduled with course C115C. S/U or letter grading.

**218. Chemistry Student Exit Seminar. (2)** Seminar, two hours. Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U grading.

**219A. Seminars: Research in Physical Chemistry—Photon Resolved Spectroscopy of Materials (Physical Chemistry). (2)** Seminar, three hours. Limited to chemistry graduate students. Discussion of recent progress in area of photon resolved spectroscopies, with focus on materials and biophysics applications. Literature discussion, discussion of recent results, safety procedures, and guest lectures. S/U grading.

**219E-219Z. Seminars: Research in Physical Chemistry. (2 each)** Seminar, three hours. Advanced study and analysis of current topics in physical chemistry. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading. **219E.** Dynamics of Molecule-Molecule and Molecule-Surface Reactions. **219I.** Spectroscopy of Isolated Molecules, Complexes, and Clusters. **219J.** Chemistry and Biophysics of Interfaces. **219K.** Statistical Mechanics of Disordered Systems. **219L.** Modern Methods for Molecular Reactions and Structure. **219Q.** Ultrafast Studies of Chemical Reaction Dynamics in Condensed Phase. **219R.** Kinetic, Thermodynamic, and Interfacial Effects in Materials. **219S.** Nanoscience. **219T.** Single-Molecule Spectroscopy in Biology. **219U.** Theory and Applications of Magnetic Resonance Spectroscopy and Imaging. **219V.** Complex Fluids: Composition, Structure, and Rheology. **219W.** Biophysics and Statistical Mechanics of Soft Matter. **219X.** Dynamic Processes in Chemically Reacting Flow Systems. **219Y.** Theory and Computation for Materials. **219Z.** Single-Cell Physiology.

**221A-221Z. Advanced Topics in Physical Chemistry. (2 to 4 each)** Lecture, two to four hours. Each course encompasses one recognized specialty in physical chemistry, generally taught by faculty members whose research interests embrace that specialty. S/U or letter grading.

**C222. Mathematical Methods for Chemistry. (4)** Lecture, four hours. Enforced requisites: Mathematics 31A, 31B, 32A, 32B. Review of basic mathematics necessary to study physical chemistry at graduate level, with focus on review of vectors, linear algebra, elementary complex analysis, and solution of ordinary and partial differential equations. Development of problem-solving skills through homework based on these mathematical techniques, with examples from physical chemistry. Concurrently scheduled with course C122. S/U or letter grading.

**C223A-C223B. Classical and Statistical Thermodynamics. (4-4)** Lecture, four hours; discussion, one hour. Requisite: course 110B or 156. Recommended: course 113A. Presentation of fundamentals of classical thermodynamics. Principles of statistical thermodynamics: probability, ensembles, partition functions, independent molecules, and perfect gas. Applications of classical and statistical thermodynamics selected from diatomic and polyatomic gases, solid and fluid states, phase equilibria, electric and magnetic effects, ortho-para hydrogen, chemical equilibria, reaction rates, imperfect gas, nonelectrolyte and electrolyte solutions, surface phenomena, high polymers, gravitation. May be concurrently scheduled with courses C123A-C123B. S/U or letter grading.

**M223C. Nonequilibrium Statistical Mechanics and Molecular Biophysics. (4)** (Same as Physics M215D.) Lecture, three hours. Requisites: courses C215B and C223B, or Physics 215A. Fundamentals of nonequilibrium thermodynamics and statistical mechanics applied to molecular biophysics. S/U or letter grading.

**C226A. Computational Methods for Chemists. (4)** Lecture, one hour; laboratory, four hours. Requisites: courses 110A, 113A, Mathematics 33A. Covers some basics of scientific coding. Introduction to advanced applications provided through commercially available computational packages. Includes quantum mechanical techniques for chemistry, reactivity, spectroscopy, solid state calculations; statistical mechanical techniques for chemistry and biochemistry; python coding, basic algorithms, machine learning, and numerical techniques. Concurrently scheduled with course C126A. S/U or letter grading.

**CM227. Synthetic Biology for Biofuels. (4)** (Same as Chemical Engineering CM227.) Lecture, four hours; discussion, one hour. Requisite: course 153A. Engineering microorganisms for complex phenotype is common goal of metabolic engineering and synthetic biology. Production of advanced biofuels involves designing and constructing novel metabolic networks in cells. Such efforts require profound understanding of biochemistry, protein structure, and biological regulations and are aided by tools in bioinformatics, systems biology, and molecular biology. Fundamentals of metabolic biochemistry, protein structure and function, and bioinformatics. Use of systems modeling for metabolic networks to design microorganisms for energy applications. Concurrently scheduled with course CM127. S/U or letter grading.

**228. Chemical Physics Seminar. (2)** Seminar, two hours. Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U or letter grading.

**229. Introduction to Physical Chemistry Research. (2)** Lecture, 90 minutes. Designed primarily for entering graduate physical chemistry students. S/U grading.

**230A. Methods of Structural Molecular Biology: X-Ray Crystallography and Electron Microscopy. (4)** Lecture, four hours; discussion, one hour. Requisites: course 156, Mathematics 3C or 33A, Physics 1C or 5B. Methods for structure determination of biomacromolecules—proteins and nucleic acids—focusing on X-ray crystallography, cryo-EM imaging, and electron diffraction. Covers mathematical and computational methods used to obtain atomic structural models of biomolecules. Key physical principles include scattering phenomena, interference and diffraction, symmetry, Fourier transforms, and atomic interpretation of molecular structures in three-dimensions. Letter grading.

**M230B. Structural Molecular Biology. (4)** (Same as Molecular, Cell, and Developmental Biology M230B.) Lecture, three hours; discussion, one hour. Requisites: Mathematics 3C, Physics 6C. Selected topics from principles of biological structure; structures of globular proteins and RNAs; structures of fibrous proteins, nucleic acids, and polysaccharides; harmonic analysis and Fourier transforms; principles of electron, neutron, and X-ray diffraction; optical and computer filtering; three-dimensional reconstruction. S/U or letter grading.

**M230D. Structural Molecular Biology Laboratory. (2)** (Same as Molecular, Cell, and Developmental Biology M230D.) Laboratory, 10 hours. Corequisite: course M230B. Methods in structural molecular biology, including experiments utilizing single crystal X-ray diffraction, low angle X-ray diffraction, electron diffraction, optical diffraction, optical filtering, three-dimensional reconstruction from electron micrographs, and model building. S/U or letter grading.

**C232A. Core Principles in Cell and Molecular Biology. (4)** Lecture, four hours. Requisites: Life Sciences 7A, 7B, 7C, 23L. Students gain broad foundational knowledge and skills for rigorous research in emerging areas of cell and molecular biology. Focus on foundational knowledge of cell and molecular biology research areas including cell cycle, cell signaling, cell metabolism, cell communication, cell states and fates, genomes, and proteomes. Focus on skills development for cell and molecular biology research. Students are equipped with theory of modern experimental approaches, and acquire hands-on skills training in designing experiments and analyzing data using these approaches. Students meet with directors of shared core facilities that specialize in these approaches to facilitate use of these approaches in their research. Continuation of in-depth analysis of rigorous experimental design and statistical analyses in cell and molecular biology. Concurrently scheduled with course C132A. Letter grading.

**232B. Skills Development for Cell and Molecular Biologists. (2)** Seminar, two hours. Students are trained to develop skills necessary to persist and thrive as researchers and scholars in cellular and molecular biology. Topics include resilience in science, balancing work/life, organizing research and career goals, writing impactful abstracts, and presenting great talks. S/U grading.

**232C. Advanced Topics and Approaches in Cell and Molecular Biology Research. (2)** Seminar, two hours. Students are trained in current research problems in cellular and molecular biology, and how modern approaches are being used to address these problems. Topics vary based on topical questions and emerging methods/technologies in cellular and molecular biology research. S/U grading.

**232D. Career Development for Cell and Molecular Biologists. (2)** Seminar, two hours. Provides career training to prepare cellular and molecular biologist trainees for biomedical careers. Topics include exploring careers in academia, industry, non-traditional paths, and building start-ups; creating professional resumes, cover letters, and job opportunity networks; and connecting to internships on and off campus. S/U grading.

**235A-235R. Seminars: Research in Organic Chemistry. (2 each)** Seminar/research group meeting, three hours. Advanced study and analysis of current topics in organic chemistry. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading. **235E.** Theoretical and Physical Organic Chemistry. **235F.** Synthetic Methods and Synthesis of Natural Products. **235G.** Organometallic Chemistry and Organic Synthesis. **235I.** Fullerene Chemistry and Materials Science. **235K.** Organic Chemistry in Organized and Restricted Media. **235N.** Target- and Diversity-Oriented Synthesis of Natural Products and Product-Like Molecules. **235O.** Polymer Chemistry and Biomaterials. **235P.** Reaction Discovery and Total Synthesis of Complex Molecules. **235Q.** Synthetic Organic Chemistry Research. **235R.** Fluorous Materials, Synthetic Chemistry, and Supramolecular Assembly. **235S.** Synthetic Methods Development and Mechanistic Study.

**236. Spectroscopic Methods of Organic Chemistry. (4)** Lecture, three hours. Requisite or corequisite: course C243A. Problem solving using proton and carbon 13 nuclear magnetic resonance, infrared spectroscopy, and mass spectrometry; new techniques in NMR, IR, and MS, with emphasis on Fourier transform NMR. S/U or letter grading.

**C238. Natural Product Biosynthesis: Chemical Logic and Enzymatic Machinery. (4)** Lecture, three hours; discussion, one hour. Covers fundamental chemical logic and enzyme mechanisms involved in biosynthesis of natural products. Discussion of major classes



of natural product including polyketides, nonribosomal peptides, terpenes, alkaloids. Emphasis on biosynthetic logic used by nature to form complex molecules. Discussion of several important enzyme families in context of biosynthesis, including assembly-line megasynthases, group transferases, oxidoreductases, etc. Historical account of natural product isolation and characterization, as well as modern account of synthetic biology and genome based efforts that are used in discovery of new natural products. Includes extensive survey of scientific literature in format of presentations and discussions. Concurrently scheduled with course C138. Letter grading.

**C240. Bionanotechnology.** (4) Lecture, three hours. Requisites: courses 30C, 110A. Basic physical, chemical, and biological principles in bionanotechnology; materials and strategies for top-down and bottom-up fabrication of ordered biologically derived molecules, characterization and detection techniques, and biomimetic materials and applications at nanoscale. Concurrently scheduled with course C140. S/U or letter grading.

**241A-241Z. Special Topics in Organic Chemistry. (2 to 4 each)** Lecture, two to four hours. Requisite or corequisite: course C243A. Each course encompasses one recognized specialty in organic chemistry, generally taught by faculty members whose research interests embrace that specialty. S/U or letter grading.

**C243A. Structure and Mechanism in Organic Chemistry.** (4) Lecture, three hours; discussion, one hour. Requisites: courses 30C and 30CL (may be taken concurrently), 110B, and 113A, with grades of C- or better. Mechanisms of organic reactions. Acidity and acid catalysis; linear free energy relationships; isotope effects. Molecular orbital theory; photochemistry; pericyclic reactions. May be concurrently scheduled with course C143A. S/U or letter grading.

**C243B. Organic Chemistry: Mechanism and Structure.** (4) Lecture, three hours; discussion, one hour. Requisite: course C243A. Mechanisms of organic reactions; structure and detection of reactive intermediates. May be concurrently scheduled with course C143B. S/U or letter grading.

**244A. Organic Synthesis: Methodology and Stereochemistry.** (4) Lecture, three hours; discussion, one hour. Modern synthetic reactions and transformations involving organic substrates. Special emphasis on reagents useful in asymmetric induction and stereoselective synthesis of structurally complex target molecules. S/U or letter grading.

**244B. Strategy and Design in Organic Synthesis.** (4) Lecture, three hours. Requisite or corequisite: course C243A. Theory behind planning of syntheses of complex molecules from simpler ones. Organic reactions and their use in synthetic process. Reasoning and art involved in organic synthesis. S/U or letter grading.

**C245. Theoretical and Computational Organic Chemistry.** (4) Lecture, two hours; discussion, one hour; computer laboratory, one hour. Requisites: courses 30C, 113A. Applications of quantum mechanical concepts and methods to understand and predict organic structures and reactivities. Computational modeling methods, including laboratory experience with force-field and quantum mechanical computer calculations. Concurrently scheduled with course C145. S/U or letter grading.

**247. Organic Colloquium.** (2) Seminar, two hours. Seminars in organic chemistry and related areas presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U or letter grading.

**248. Organic Chemistry Student Seminar.** (2) Seminar, two hours. Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. Strongly recommended for first- and second-year organic chemistry graduate students. Presentation required if taken for letter grade. S/U or letter grading.

**249A. Methods of Materials Chemistry: Synthesis, Characterization, Physical Properties, Applications, and Devices.** (2) Seminar, two hours. Designed for first-year graduate students to teach advanced problem-solving skills and critical thinking, with focus on problems and recent literature pertaining to mate-

rials chemistry. How materials are synthesized and characterized. Discussion of important physical properties, as well as broad range of applications and behavior in devices. S/U grading.

**249B. Methods of Chemical Synthesis: Organic/Inorganic/Organometallic.** (2) Seminar, two hours. Designed for first-year graduate students to teach advanced problem-solving skills and critical thinking, with focus on problems and recent literature pertaining to chemical synthesis of organic, inorganic, and organometallic compounds. S/U grading.

**249C. Methods of Physical/Theoretical/Biophysical Chemistry.** (2) Seminar, two hours. Designed for first-year graduate students to teach advanced problem-solving skills and critical thinking, with focus on problems and recent literature pertaining to physical, theoretical, and biophysical chemistry. S/U grading.

**C250. Research Methods and Integrity in Cellular and Molecular Biology.** (4) Lecture, two hours; discussion, two hours. Data analysis and management, statistical methods, use of antibody and kit reagents, figure preparation, authorship, mentoring, human subjects protection, animal subject protection, and conflict of interest. May be repeated for credit. Concurrently scheduled with course C150. Letter grading.

**CM255. Mitochondria in Medicine, Biology, and Chemistry.** (1) (Same as Biological Chemistry M255.) Seminar, two hours every other week. Open to undergraduate and graduate science majors considering or currently conducting research in areas related to mitochondria. Large number of physiological and pathophysiological processes involve mitochondrial function and dysfunction. Focus on understanding how mitochondria metabolism, form, and function impact health and disease. Physiology and cell biology of healthy and dysfunctional mitochondria critically assessed at subcellular, cellular, tissue, and organismal levels. Topics include in-depth analyses of literature and critical evaluation of experimental design and methods of current research. May be repeated for credit. Concurrently scheduled with course C155. S/U grading.

**256A-256Z. Seminars: Research in Biochemistry.** (2 each) Seminar, three hours. Advanced study and analysis of current topics in biochemistry. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading. **256B.** Biochemistry of Protein Function. **256D.** Transcriptional Control Mechanisms in *Drosophila* Embryogenesis. **256F.** Current Topics in Prokaryotic Development. **256G.** Nucleic Acid Structure Determination by NMR. **256J.** Contractile Proteins in Muscle Contraction and Cell Motility. **256K.** Biochemistry and Molecular Biology of *Chlamydomonas*. **256L.** Literature of Structural Biology. **256N.** Advanced Topics in Structural Biology. **256O.** Membrane Biophysics. **256P.** Analysis of Protein Structure. **256Q.** Biochemistry and Function of Ubiquitin in Yeast and Higher Eukaryotes. **256R.** Biomolecular Nuclear Magnetic Resonance Spectroscopy and Protein Structure. **256S.** Proteome Bioinformatics. **256T.** RNA Processing and RNA Genomics. **256U.** Mitochondrial Biogenesis and Link to Disease. **256V.** Proteomics and Mass Spectrometry. **256W.** Cytoskeletal Dynamics during *Drosophila* Oogenesis. **256X.** Microtubule-Based Structures and Human Disease. **256Y.** Research in Genomics: Biochemistry, Synthetic Biology, and Genomics. **256Z.** Information Processing and Intercellular Signaling Networks.

**257. Physical Chemistry of Biological Macromolecules.** (4) Lecture, one hour; discussion, one hour; laboratory, four hours. Requisite: course 153A. Theory of hydrodynamic, thermodynamic, and optical techniques used to study structure and function of biological macromolecules. S/U or letter grading.

**258. Advanced Topics in Biochemistry and Molecular Biology.** (2) Lecture, two hours. Critical analysis of experimental design and methods in biochemistry and molecular biology. In-depth analysis of literature in one or more areas of current research. May be repeated for credit. S/U or letter grading.

**CM259. Mechanisms of Gene Regulation.** (4) (Same as Biological Chemistry M259.) Lecture, four hours. Requisite: course 153B. RNA polymerase structures and mechanisms; promoter recognition and transcrip-

tion cycle; mechanisms of activation; transcriptional poising and elongation control; Mediator of transcription; chromatin remodeling and modification; epigenetic regulation; cotranscriptional and transcription-coupled RNA processing; impact of transcription on mRNA processing and stability; nuclear export of mRNA. Concurrently scheduled with course C159. S/U or letter grading.

**CM260A. Introduction to Bioinformatics.** (4) (Same as Bioinformatics M221, Computer Science CM221, and Human Genetics M260A.) Lecture, four hours; discussion, two hours. Requisites: Computer Science 32 or Program in Computing 10C with grade of C- or better, and one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Introduction to bioinformatics and methodologies, with emphasis on concepts and inventing new computational and statistical techniques to analyze biological data. Focus on sequence analysis and alignment algorithms. Concurrently scheduled with course CM160A. S/U or letter grading.

**260BL. Advanced Bioinformatics Computational Laboratory.** (2) Laboratory, four hours. Enforced requisite: course CM260A. Corequisite: course CM260B. Development and application of computational approaches to ask and answer biological questions by implementing variety of bioinformatics and systems biology algorithms. Advantages and disadvantages of different algorithmic methods for studying biological questions and preliminary understanding of how to compute statistical significance of results. Development of conceptual understanding of implementation of bioinformatics algorithms and foundation for how to do innovative work in these fields. Experience in observing impact of computational complexity of algorithms in computing solutions. S/U or letter grading.

**262. Biochemistry and Molecular Biology of Protein Translocation Systems.** (3) Lecture, two hours; discussion, two hours. Requisites: courses 269A through 269D. Protein translocation into nucleus, mitochondrion, peroxisome, chloroplast, endoplasmic reticulum, and protein export in bacteria. Letter grading.

**263. Seminars in Chemical Biology.** (2) Seminar, two hours. Seminars in chemical biology (broadly defined) presented by outside speakers, graduate students, postdoctoral fellows, and faculty/staff from diverse scientists. May be repeated for credit. S/U or letter grading.

**C264. Free Radicals in Biology and Medicine.** (2 to 4) Lecture, three hours. Enforced requisites: courses 153A and either 153B or 153C, with grades of C- or better. Biochemical reactivity of dioxygen, its role in mitochondrial metabolism, neurodegenerative diseases, apoptosis, and aging. Discussion of radical reactions, how they are harnessed to achieve enzyme catalysis, and how free radicals contribute to or regulate essential biological processes. These same reactions run amok under certain types of stress and can contribute to wide variety of diseases, including neurodegenerative diseases (e.g., Huntington's, Parkinson's, and Alzheimer's diseases), mitochondrial diseases, atherosclerosis, and aging. Concurrently scheduled with course C164. S/U or letter grading.

**C265. Metabolic Control by Protein Modification.** (4) Lecture, three hours; discussion, one hour. Requisites: courses 153A, 153B, 153C. Biochemical basis of controlling metabolic pathways by posttranslational modification of proteins, including phosphorylation and methylation reactions. Concurrently scheduled with course C165. Letter grading.

**266. Proteomics and Protein Mass Spectrometry.** (4) Lecture, four hours. Essential technologies and concepts practiced in proteomics-based research, including methods for protein separation and display, protein quantitation, and protein identification. Emphasis on fundamentals of protein mass spectrometry. S/U or letter grading.

**267. Nanoscience and Chemistry.** (4) Lecture, four hours. Enforced requisites: courses 110A, 113A, 171, 172. Designed for advanced undergraduate and graduate students. Why nanoscience is important and in-

teresting and critical role of chemistry in nanoscience. Chemistry and physics of variety of synthetic inorganic nanostructures, including metallic nanostructures (nanocrystals, nanorods, nanowires), semiconductor nanostructures (quantum dots/rods, nanowires, plates), and carbon nanostructures (fullerene, nanotubes, graphene). Discussion of synthetic approaches, structures, and physical properties, as well as potential technological opportunities of each. Letter grading.

**268. Biochemistry Research Seminar. (2)** Seminar, two hours. Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students on topics of current biochemical research interest. May be repeated for credit. S/U or letter grading.

**269A. Protein Structure. (2)** Lecture, five hours; discussion, two hours. Requisites: courses 153A, 153B, 153C, 156. Three-dimensional structure of proteins. Forces that stabilize structure of soluble and membrane proteins. Kinetics of protein folding and role of chaperones. Prediction of protein structure from sequence. Letter grading.

**269B. Biocatalysis and Bioenergetics. (2)** Lecture, five hours; discussion, two hours. Requisites: courses 153A, 153B, 153C, 156. Mechanisms and regulation of protein-mediated catalysis. Proteomics and metabolomics. Concepts in electron, proton, and energy transfer. Energy transducing membranes in chloroplasts and mitochondria. Letter grading.

**269C. Nucleic Acid Structure and Catalysis. (2)** Lecture, five hours; discussion, two hours. Requisites: courses 153A, 153B, 153C, 156. Three-dimensional structure of DNA and RNA. Sequence-specific recognition of DNA and RNA. RNA-catalyzed processes, including self-splicing and peptide bond formation. Letter grading.

**269D. Mechanism and Regulation of Gene Expression. (2)** Lecture, five hours; discussion, two hours. Requisites: courses 153A, 153B, 153C, 156. Mechanism and regulation of transcription in prokaryotes and eukaryotes. Mechanism and regulation of mRNA processing; mRNA export and degradation. Letter grading.

**269E. Biomolecular Structure, Catalysis, and Regulation. (2)** Lecture, five hours; discussion, two hours. Requisites: courses 153A, 153B, 153C, 156. Protein-protein interactions, proteomics, protein networks, regulatory circuits, cellular dynamics, imaging of cellular processes. Letter grading.

**C270. Biochemistry and Molecular Biology of Photosynthetic Apparatus. (2 to 4)** Lecture, two to three hours; discussion, zero to two hours. Requisites: courses 153A and 153B, or Life Sciences 3 and 23L, and course 153L. Recommended: courses 153C, 154, Life Sciences 4. Light harvesting, photochemistry, electron transfer, carbon fixation, carbohydrate metabolism, pigment synthesis in chloroplasts and bacteria. Assembly of photosynthetic membranes and regulation of genes encoding those components. Emphasis on understanding of experimental approaches. Concurrently scheduled with course CM170. S/U or letter grading.

**271. Advanced Topics in Inorganic Chemistry. (2 to 4)** Lecture, two to four hours. Each offering encompasses one recognized specialty in inorganic chemistry, generally taught by faculty members whose research interests embrace that specialty. S/U or letter grading.

**C272. Advanced Inorganic Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisite: course 171 with grade of C- or better. Systematic approach to modern inorganic chemistry, structure and bonding of inorganic molecules and solids, structure/reactivity relationships, vibrational spectra of complexes, electronic structure and ligand-field theory, mechanisms of inorganic reactions, bonding and spectroscopy of organometallic compounds, transition metals in catalysis and biology. Concurrently scheduled with course C172. S/U or letter grading.

**272A-272N. Seminars: Research in Inorganic Chemistry. (2 each)** Seminar, three hours. Advanced study and analysis of current topics in inorganic chemistry. Discussion of current research and literature in research specialty of faculty member teaching course.

S/U grading. **272A.** Chemistry of Materials. **272C.** Inorganic Spectroscopy. **272G.** Issues in Chemical Education. **272I.** Organometallic Chemistry. **272K.** Inorganic Nanostructures: Synthesis, Properties, and Functions. **272L.** Molecular Materials. **272M.** Methodology for Chemical Synthesis of Complex Molecules. **272N.** Electrochemical Materials and Interfaces.

**C273. Electrochemical Systems. (4)** Lecture, three hours; discussion, two hours. Introduction to principles of electrochemical systems commonly applied in research of inorganic chemistry, materials sciences, and nanotechnology. With examples in recent literature and discussions of experimental practice, focus on qualitative and quantitative evaluation of information obtained from electrochemical characterization methods. Understanding of course contents helps appreciate research and technologies in catalysis, energy storage and conversion, and advanced environmental technologies. Concurrently scheduled with course C173. S/U or letter grading.

**C274. Inorganic and Metalorganic Laboratory Methods. (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: courses 30CL and 171, with grades of C- or better. Synthesis of inorganic compounds, including air-sensitive materials; Schlenk techniques; chromatographic and ion exchange methods; spectroscopic characterization and literature applications. Concurrently scheduled with course C174. S/U or letter grading.

**C275. Inorganic Reaction Mechanisms. (4)** Lecture, three hours. Requisites: courses 110A, 110B, 113A, and 172, with grades of C- or better. Survey of inorganic reactions; mechanistic principles; electronic structure of metal ions; transition-metal coordination chemistry; inner- and outer-sphere and chelate complexes; substitution, isomerization, and racemization reactions; stereochemistry; oxidation/reduction, free-radical, polymerization, and photochemical reactions of inorganic species. May be concurrently scheduled with course C175. S/U or letter grading.

**C276A. Group Theory and Applications to Inorganic Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 113A and 172, with grades of C- or better. Group theoretical methods; molecular orbital theory; ligand-field theory; electronic spectroscopy; vibrational spectroscopy. May be concurrently scheduled with course C176. S/U or letter grading.

**276B. Physical Methods in Inorganic Chemistry. (4)** Lecture, three hours. Requisite: course C276A. Theory and applications of spectroscopic techniques, including magnetic resonance and vibrational and surface science methods, to inorganic compounds and materials. S/U or letter grading.

**277. Crystal Structure Analysis. (4)** Lecture, three hours. Theory and practice of modern crystallography, with emphasis on practical experience in structure determination. Topics include crystallographic symmetry, scattering theory, data collection, Fourier analysis, heavy atom techniques, direct methods, isomorphous replacement, crystallographic refinement, error analysis, and common pitfalls. S/U or letter grading.

**278. Inorganic Chemistry Student Seminar. (2)** Seminar, two hours. Seminars presented by staff, outside speakers, postdoctoral fellows, and graduate students. May be repeated for credit. S/U or letter grading.

**C280. Solid-State Chemistry. (4)** Lecture, three hours. Requisite: course 172 with grade of C- or better. Survey of new materials and methods for their preparation and characterization, with emphasis on band theory and its relationship to chemical, optical, transport, and magnetic properties, leading to deeper understanding of these materials. Concurrently scheduled with course C180. S/U or letter grading.

**C281. Polymer Chemistry. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 30B, 110A. Synthesis of organic and inorganic macromolecules, thermodynamic and statistical mechanical descriptions of unique properties of polymers, polymer characterization methods, and special topics such as conductive and biomedical polymers and polymeric reagents in synthesis. Concurrently scheduled with course C181. S/U or letter grading.

**282. Introduction to Inorganic Chemistry Research. (2)** Lecture, 90 minutes. Discussion of current research in inorganic chemistry, designed primarily for entering graduate inorganic chemistry students. S/U grading.

**283. Evolution of Devices from Concept to Product. (2)** Seminar, 90 minutes. Required of students in Materials Creation Training Program. Training in fundamental science and engineering to fabricate electrical, photonic, and microelectromechanical devices. Discussion of intellectual property issues and development of business plan. May be repeated for credit. S/U or letter grading.

**285. Materials Chemistry Laboratory. (5)** Lecture, two hours; laboratory, eight hours. Requisites: courses 30AL, 110A, 113A, 171. Materials synthesis and physical properties of complex materials. Combines synthetic skills with fundamental physical understanding and characterization in approximately equal proportions to relate materials synthesis to materials function. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Safety in Chemical and Biochemical Research. (2)** Lecture, two hours. Survey of safe laboratory practices for experimental research in organic, inorganic, and physical chemistry and biochemistry. Topics include laser safety, cryogenic hazards, high- and low-pressure experimentation, gas and carcinogen handling, chemical spills, fire extinguishing, and chemical disposal. S/U grading.

**495. Teaching College Chemistry. (2)** Seminar, two hours; discussion, two hours; 20 hours training during week prior to Fall Quarter. Course for teaching assistants designed to deal with problems and techniques of teaching college chemistry. S/U grading.

**596. Directed Individual Study or Research. (2 to 16)** Tutorial, to be arranged with faculty member who directs study or research. May be repeated for credit. S/U or letter grading.

**597. Preparation for MS Comprehensive Examination or PhD Qualifying Examinations. (2 to 4)** Tutorial, to be arranged. May be taken for maximum of 8 units. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 16)** Tutorial, to be arranged. Each faculty member supervises research of MS students and holds research group meetings, seminars, and discussions with students. May be repeated for credit. S/U or letter grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Each faculty member supervises research of PhD students and holds research group meetings, seminars, and discussions with students. May be repeated for credit. S/U or letter grading.

# CÉSAR E. CHÁVEZ

## DEPARTMENT OF CHICANA/O AND CENTRAL AMERICAN STUDIES

*College of Letters and Science*

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**Chicana/o and Central American  
Studies**

310-206-7695

**Undergraduate Student Adviser e-mail**

**Graduate Student Adviser e-mail**

Leisy J. Abrego, PhD, *Chair*

## Faculty Roster

### Professors

Leisy J. Abrego, PhD  
Eric R. Avila, PhD (*Waldo W. Neikirk Term  
Professor*)

Matthew A. Barreto, PhD  
Charlene Villaseñor Black, PhD  
Maylei S. Blackwell, PhD  
Héctor V. Calderón, PhD  
Jason P. De León, PhD  
Alicia Gaspar de Alba, PhD  
Laura E. Gómez, PhD  
Gary M. Segura, PhD  
Daniel G. Solórzano, Jr., PhD  
Veronica Terríquez, PhD  
Abel Valenzuela, Jr., PhD

### Professors Emeriti

Judith F. Baca, MA  
Reynaldo F. Macías, PhD  
Susan J. Plann, PhD  
María Cristina Pons, PhD  
Otto Santa Ana, PhD

### Associate Professors

Genevieve G. Carpio, PhD  
Raúl A. Hinojosa-Ojeda, PhD  
Gaye T. Johnson, PhD  
Robert Chao Romero, JD, PhD  
J. Christopher Zepeda-Millán, PhD

### Assistant Professors

Karina Alma, PhD  
Floralma E. Boj López, PhD  
Laura C. Chávez-Moreno, PhD

### Lecturer

Alma López Gaspar de Alba, MFA

## Overview

Addressing local, national, and transnational contexts, the Chicana/Chicano and Central American studies curriculum at UCLA explores race, class, gender, and sexuality paradigms as they have shaped the history of the field; as well as new directions in the study of Chicanas/

Chicanos and Latinas/Latinos, including border and transnational studies; expressive arts; history, literature, and language of Americas; and labor, law, and policy studies.

Departmental faculty members, situated in one of the most diverse cities in the world, utilize Los Angeles as a laboratory for studying the social transformations taking place in California, the Southwest, and the U.S. The department provides students with the interdisciplinary research tools necessary to advance knowledge in the field, provide academic leadership, and serve community needs with academic resources.

## Mission

The mission of the César E. Chávez Department of Chicana/o and Central American Studies is to train a new generation of scholars to research and analyze the life, history, and culture of Mexican-origin people within the U.S., as well as of other Latina/Latino and indigenous populations in the Americas.

## Undergraduate Major

### Chicana and Chicano Studies BA

The BA program in Chicana and Chicano Studies is committed to the practice of different forms of scholarship and pedagogy and to the promotion of critical thinking about such issues as gender, sexuality, social action, language, race, ethnicity, class, assimilation/acculturation paradigms, and indigenous traditions. The literary and visual arts often function as vehicles for social change and creative empowerment, and so they constitute one focus of the curriculum, that aims to strike a balance among the social sciences, humanities, arts, and the professions. The major prepares students for graduate education in academic and professional fields and for a variety of positions that involve community and social service in the U.S. and abroad.

### Capstone Program

The Chicana and Chicano Studies major is a designated capstone program. Students have options for completing a senior honors thesis, individual research, or senior project under the direction of a faculty member. Alternatively, students may elect to complete an upper-division course that includes additional coursework culminating in completion of a capstone paper or creative project. Through their capstone work, students are expected to demonstrate working knowledge of the major findings and methods of the disciplines from which they have drawn their Chicana and Chicano studies coursework, show their capacities for conceiving and executing a research or creative project on a self-selected topic as well as identifying and evaluating relevant documentation pertaining to that project, demonstrate appropriate levels of scholarly discourse on their selected topic, and develop greater capacity to be of lifelong service to the Chicana/Chicano and Latina/

Latino community and to global society in the tradition of César Chávez and scholar activist exemplars.

## Learning Outcomes

The Chicana and Chicano Studies major has the following learning outcomes:

- Demonstrated skills and expertise, including research, analysis, and writing
- Demonstrated familiarity and competence in a range of interdisciplinary methodologies and approaches
- Demonstrated ability to identify and analyze appropriate primary and secondary sources, material evidence, and other primary documents
- Demonstrated mastery and integration of knowledge and learned abilities
- Demonstrated ability to use knowledge gained in classroom to conceive and execute projects
- Demonstrated broad knowledge of fundamentals acquired through coursework, as informed by race, class, gender, and sexuality paradigms
- Conception and execution of an original research project that identifies and engages with a topic relevant to the student's area of concentration
- Presentation of work to peers for discussion and critique

## Entry to the Major

### Transfer Students

Transfer applicants to the Chicana and Chicano Studies major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one interdisciplinary Chicana/Chicano history and culture course, one interdisciplinary Chicana/Chicano social structure and contemporary conditions course, and five quarter terms of Spanish.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Chicana/o and Central American Studies 10A, 10B, Spanish 5 or equivalent.

### The Major

*Required:* A total of 11 upper-division courses, including Chicana/o and Central American Studies 101; one service learning course from 100XP or M170XP or from the approved list available in the department office each term; two related study courses from the approved list of courses outside the department (related study includes courses that provide a comparative perspective to Chicana and Chicano studies and/or a contextualization of Chicana and Chicano communities in the world); one advanced seminar course from 191 or another course by petition to the department chair; and a concentration of four courses in one area listed below and two courses in a second area:

*Border and Transnational Studies:* Chicana/o and Central American Studies CM110, 120, M124, M125, M126, M132, 143, M144, CM147, 151, 152, 153A, M154, M155A, M156A, 163, 176, 184, 191

*Expressive Arts:* Chicana/o and Central American Studies M103C, M103D, M103G, 104, M108A, M115, M116, 117, CM135, M175, M185, M186A, M186AL, M186B, M186BL, M186C, M186CL, M187, 191

*History, Culture, and Language of Americas:* Chicana/o and Central American Studies M105A, M105C, 109, CM110, 111, M114, M116, 131, M132, M133, M139, C141, 142, 143, 145B, 146, 157, M158, M159A, M159B, 160, 168A, 168B, 169, 171, M173, 181, CM182, M183, 184, M187, 191

*Labor, Law, and Policy Studies:* Chicana/o and Central American Studies M102, CM106, M119, 120, M121, M122, 123, M127, M128, M130, M148, 149, 150, 151, 152, M156A, M156B, 165, 166, 174AX, 174BX, CM177, 178, C179, 191

### Honors Program

The proposal, research, data collection, analysis, and writing of the thesis (or the creative equivalent to this process) take place in Chicana/o and Central American Studies 198A, 198B, and 198C, which may not be applied toward the major requirements. An honors thesis of at least 30 pages or a significant creative project is required.

### Optional Multidisciplinary Senior Thesis

Chicana and Chicano Studies majors have the option during their senior year to enroll in two 199 courses with the intention of producing an undergraduate thesis. The first term includes thesis conceptualization and formulation, along with preliminary data collection for the thesis. The second term entails completion of the data collection, analysis of the data, and writing of the thesis. Enrollment in the two 199 courses is with the advice and consent of a faculty member.

### Policies

#### The Major

No more than 8 units of 188, 191, and 199 courses may be applied toward the major; enrollment in the courses must be approved in writing by the department chair.

Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

#### Honors Program

The Chicana and Chicano Studies honors program provides the opportunity for motivated and dedicated students to undertake a year-long research or creative project with the guidance and supervision of a faculty member. The program is open to all juniors and seniors who have a 3.5 grade-point average in the major, a cumulative GPA of 3.0 or better, and completed 90 or more total units, including Chicana/o and Central American Studies 10A, 10B, 101, and one course from 89, 89HC, 189, or 189HC.

The application for admission must be submitted in spring quarter of the year prior to admission to the program, with the advice and consent of a faculty sponsor.

Students who are currently undertaking the optional multidisciplinary senior thesis and who are eligible for the honors program may opt to switch to the honors program (provided it does not delay their progress toward the degree) with the approval of the department.

## Undergraduate Minors

### Central American Studies Minor

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Course (5 units):* Chicana/o and Central American Studies 20 with a grade of C or better.

*Required Upper-Division Courses (24 units minimum):* Two upper-division core courses selected from Chicana/o and Central American Studies 153A, 153B, 153C, or 153D; four upper-division elective courses selected from African American Studies M154C, M154D, Anthropology 161, Art History CM139A, CM141, C142B, Chicana/o and Central American Studies 100XP, M105C, M105D, C107, M108A, M121, M122, M124, M125, M144, CM147, 151, 152, 153A, 153B, 153C, 153D (if not applied above), 164XP, 169, 188, 191, 199, Community Health Sciences 132, English 135, 176, Spanish 155, or 170.

#### Policies

A maximum of 4 units of special studies courses (197, 199) approved by the adviser may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Chicana and Chicano Studies Minor

The Chicana and Chicano Studies minor complements study in another traditional field. Students participating in the minor are required to complete both a departmental major in another discipline and the Chicana and Chicano Studies minor.

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better,

have completed 45 units, and file a petition with the student adviser in 7351 Bunche Hall.

### The Minor

*Required Lower-Division Courses (10 units):* Chicana/o and Central American Studies 10A, 10B.

*Required Upper-Division Courses (20 units minimum):* Chicana/o and Central American Studies 101 and four elective courses (20 units minimum) selected from the approved list (available in the department office each term).

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Chicana and Chicano Studies MA, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Chicana/o and Central American Studies

### Lower-Division Courses

**10A. Introduction to Chicana/Chicano Studies: History and Culture. (5)** (Formerly numbered Chicana and Chicano Studies 10A.) Lecture, three hours; discussion, one hour. Interdisciplinary survey of diverse historical experiences, cultural factors, and ethnic/racial paradigms, including indigenouslyness, gender, sexuality, language, and borders, that help shape Chicana/Chicano identities. Emphasis on critical reading and writing skills. Letter grading.

**10B. Introduction to Chicana/Chicano Studies: Social Structure and Contemporary Conditions. (5)** (Formerly numbered Chicana and Chicano Studies 10B.) Lecture, three hours; discussion, one hour. Multidisciplinary examination of representation, ideologies, and material conditions of Chicanas/Chicanos, including colonialism, race, labor, immigration, poverty, assimilation, and patriarchy. Emphasis on critical reading and writing skills. Letter grading.

**M18. Leadership and Student-Initiated Retention. (2)** (Formerly numbered Chicana and Chicano Studies M18.) (Same as African American Studies M18, American Indian Studies M18, and Asian American Studies M18.) Seminar, two hours. Limited to freshmen/sophomores/first-year transfer students. Not open for credit to students with credit for course M118. Exploration of issues in retention at UCLA through lens of student-initiated and student-run programs, efforts, activities, and services. Focus on populations with his-



torically low graduation rates targeted by Campus Retention Committee. May not be applied toward departmental major or minor elective requirements. May be repeated once for credit. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Central American Studies: Histories and Cultures. (5)** (Formerly numbered Chicana and Chicano Studies 20.) Lecture, one hour; discussion, one hour. Survey of histories of Central Americans from time of independence movements of early 18th century to present. Major topics include local indigenities, independence movements, 19th- and 20th-century dependency, state-nation and identity formation, politics of *mestizaje*, Indigenous resistance, imperialism and economic growth, relations with U.S., politics of development, and contemporary social movements. Letter grading.

**88. Sophomore Seminars: Chicana/o and Central American Studies. (2)** (Formerly numbered Chicana and Chicano Studies 88.) Seminar, two hours. Limited to lower-division students. Readings and discussions designed to introduce students to current research in Chicana/Chicano studies. Culminating project may be required. May not be applied toward departmental major or minor requirements. May be repeated for credit with topic change. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics in Chicana/o and Central American Studies. (2)** (Formerly numbered Chicana and Chicano Studies 97.) Seminar, two hours. Requisite: course 10A or 10B. Current topics and particular research methods in Chicana and Chicano studies through readings and other assignments. May be repeated for credit. P/NP or letter grading.

**98. Professional Schools Seminars. (2)** (Formerly numbered Chicana and Chicano Studies 98.) Seminar, two hours. Limited to 20 students. Introduction to issues of professional (nonacademic) settings and careers through readings and other assignments. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100XP. Barrio Organization and Service Learning. (5)** (Formerly numbered 100SL.) Seminar, two hours; discussion, two hours; field placement, six hours. Limited to juniors/seniors. Service learning placement in community-based organization, labor union, or service-oriented nonprofit organization. Study of role that these organizations play in improvement and change of Chicana/Chicano communities. Students meet on regular basis with instructors and provide periodic reports of their experience. Letter grading.

**101. Theoretical Concepts in Chicana/Chicano Studies. (5)** (Formerly numbered Chicana and Chicano Studies 101.) Lecture, four hours; discussion, one hour. Requisite: course 10A or 10B. Survey of different theoretical approaches to field of Chicana and Chicano studies. Letter grading.

**M102. Mexican Americans and Schools. (4)** (Formerly numbered Chicana and Chicano Studies M102.) (Same as Education M102.) Seminar, two hours; discussion, two hours. Theoretical and empirical overview of Chicana/Chicano educational issues in U.S., with special emphasis on disentangling effects of race, gender, class, and immigrant status on Chicana/Chicano educational attainment and achievement. Examination of how historical, social, political, and economic forces impact Chicana/Chicano educational experience. P/NP or letter grading.

**M103C. Origins and Evolution of Chicano Theater. (5)** (Formerly numbered Chicana and Chicano Studies M103C.) (Same as Theater M103C.) Lecture, three hours. Designed for juniors/seniors. Exploration of development of Chicano theater from its beginning in legends and rituals of ancient Mexico to work of Luis Valdez (late 1960s). P/NP or letter grading.

**M103D. Contemporary Chicano Theater: Beginning of Chicano Theater Movement. (5)** (Formerly numbered Chicana and Chicano Studies M103D.) (Same as Theater M103D.) Lecture, three hours. Analysis and discussion of historical and political events from 1965 to 1980, as well as theatrical traditions that led to emergence of Chicano theater. Letter grading.

**M103G. Contemporary Chicano Theater: Chicano Theater since 1980. (5)** (Formerly numbered Chicana and Chicano Studies M103G.) (Same as Theater M103G.) Lecture, three hours. Analysis and discussion of Chicano theater since 1980, including discussion of Chicana playwrights, magic realism, Chicano comedy, and Chicano performance art. Letter grading.

**104. Comedy and Culture: Your Humorous Life. (4)** (Formerly numbered Chicana and Chicano Studies 104.) Lecture, four hours. How to mine unique humorous life adventures from students' cultural identities and turn those distinct experiences into humorous literature. Students acquire skills to read their stories out loud, with emphasis on comedy in their pieces through art of storytelling and performance. P/NP or letter grading.

**104A. Art of Performance. (4)** (Formerly numbered Chicana and Chicano Studies 104A.) Seminar, four hours. Examination of seminal works of Latina/o/x theater artists with particular focus on creating and embodying personal histories in performance. Features dramatic plays, autobiographical texts, and ensemble devised works that reflect changing nature of Latina/o/x cultural landscape. Introduction to basic elements of acting, including collaborative group performance, physical storytelling, and voice/speech exercises designed to free creative voice. Examination of performance of cultural expression, political tool, and personal identity. P/NP or letter grading.

**M105A. Early Chicana/Chicano Literature, 1400 to 1920. (5)** (Formerly numbered Chicana and Chicano Studies M105A.) (Same as English M105A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Survey of Chicana/Chicano literature from poetry of Triple Alliance and Aztec Empire through end of Mexican Revolution (1920), including oral and written forms (poetry, corridos, testimonios, folklore, novels, short stories, and drama) by writers such as Nezahualcōyotl (Hungry Coyote), Cabaza de Vaca, Lorenzo de Zavala, María Amparo Ruiz de Burton, Eusebio Chacón, Daniel Venegas, and Lorena Villegas de Magón. P/NP or letter grading.

**M105B. Chicana/Chicano Literature from Mexican Revolution to el Movimiento, 1920 to 1970s. (5)** (Formerly numbered Chicana and Chicano Studies M105B.) (Same as English M105B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Chicana/Chicano literature from 1920s through Great Depression and World War II, ending with Chicana/Chicano civil rights movement. Oral and written narratives by writers including Conrado Espinoza, Jovita González,

Cleofas Jaramillo, Angelico Chávez, Mario Suárez, Oscar Acosta, and Evangelina Vigil. P/NP or letter grading.

**M105C. Chicana/Chicano Literature since el Movimiento, 1970s to Present. (5)** (Formerly numbered Chicana and Chicano Studies M105C.) (Same as English M105C.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of Chicana/Chicano literature since 1970s, with particular emphasis on how queer and feminist activism as well as Central and South American migration have shaped 21st-century chicanidad. Oral, written, and graphic fiction, poetry, and drama by writers including John Rechy, Gloria Anzaldúa, Los Bros Hernández, Ana Castillo, and Dagoberto Gilb guide exploration of queer and feminist studies, Reagan generation, immigration debates, and emerging Latina/Latino majority. P/NP or letter grading.

**M105D. Introduction to Latina/Latino Literature. (5)** (Formerly numbered Chicana and Chicano Studies M105D.) (Same as English M105D.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of U.S. Latina/Latino literature and introduction to its major critical trends, with emphasis on groups of Caribbean, Mexican, South American, and Central American origin. Representative works read in relation to such topics as relationship between Latina/Latino populations and U.S. cultural sphere, struggle for self-determination, experiences of exile and migration, border zones, enclaves and language, and *mestizaje* and its impact on cultural production. P/NP or letter grading.

**M105E. Studies in Chicana/Chicano and/or Latina/Latino Literature. (5)** (Formerly numbered Chicana and Chicano Studies M105E.) (Same as English M105E.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Variable topics course to give students broad introduction to issues and themes in Chicana/Chicano and/or Latina/Latino literature. Topics include border, immigration, revolution, language, gender, sexuality, and diaspora, among others. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**105F. Gender, Fiction, and Social Change. (4)** (Formerly numbered Chicana and Chicano Studies 105F.) Lecture, four hours. Requisite: English Composition 3. Study of essays, novels, short narratives, and plays written by Chicanas/Latinas. Required readings represent writers with focus on themes of identity, ethnicity, gender, and cross-border experiences leading to social change. Critical reading and analysis of works, searching for strengths and flaws, to point out unique contribution of each work to greater body of U.S. literature. P/NP or letter grading.

**M105XP. Seminar: Chicana/Chicano and/or Latina/Latino Literature—Community-Engaged Learning. (5)** (Formerly numbered M105SL.) (Same as English M105XP.) Seminar, three or four hours; field placement, three or four hours. Enforced requisite: English Composition 3. Specialized studies in Chicana/Chicano and/or Latina/Latino literature. In-depth study of various topics related to Chicano/Latino communities in Southern California, including Chicana/Chicano visions of Los Angeles; immigration, migration, and exile; autobiography and historical change; Chicana/Chicano journalism; and labor and literature. Service learning component includes minimum of 20 hours of meaningful work with agency involved with Chicana/Chicano and/or Latina/Latino community and selected by instructor. P/NP or letter grading.

**CM106. Health in Chicano/Latino Population. (4)** (Formerly numbered Chicana and Chicano Studies CM106.) (Same as Public Health M106.) Lecture, four hours; discussion, one hour. Designed for juniors/seniors. Examination of Chicano/Latino health status through life expectancy, causes of death, reportable diseases, services utilization, provider supply, and risk behaviors within demographic/immigration changes. Binational review of health effects in U.S. and Mexico. Concurrently scheduled with course C276. Letter grading.



**M106B. Diversity in Aging: Roles of Gender and Ethnicity. (4)** (Formerly numbered Chicana and Chicano Studies M106B.) (Same as Gender Studies M104C, Gerontology M104C, Public Affairs M131, and Social Welfare M104C.) Lecture, four hours. Exploration of complexity of variables related to diversity of aging population and variability in aging process. Examination of gender and ethnicity within context of both physical and social aging, in multidisciplinary perspective utilizing faculty from variety of fields to address issues of diversity. Letter grading.

**C107. Latina/Latino Families in U.S. (4)** (Formerly numbered Chicana and Chicano Studies C107.) Lecture, four hours; discussion, one hour (when scheduled). Study of how intersections of race, class, and gender help shape experiences of Latina/Latino families in U.S. society and how these intersections also help shape individual experiences within families. Examination of family, race, class, and gender as sociological concepts. Readings about family experiences of Mexican and Central American groups in U.S., with special emphasis on immigrants, and analysis of how race, class, and gender together play important roles in shaping these experiences. Discussion of roles of structure and space for agency in each context. Concurrently scheduled with course C212. P/NP or letter grading.

**M108A. Music of Latin America: Mexico, Central America, and Caribbean Isles. (5)** (Formerly numbered Chicana and Chicano Studies M108A.) (Same as Ethnomusicology M108A.) Lecture, four hours; discussion, one hour. Survey of traditional and contemporary musical culture. P/NP or letter grading.

**109. Chicana/Chicano Folklore. (4)** (Formerly numbered Chicana and Chicano Studies 109.) Lecture, four hours. Examination of roots of Chicana/Chicano folklore in Mexican oral tradition in mid-19th century and development of Chicana/Chicano folklore to present day. P/NP or letter grading.

**CM110. Chicana Feminism. (4)** (Formerly numbered Chicana and Chicano Studies CM110.) (Same as Gender Studies CM132A.) Lecture, four hours. Enforced prerequisite: course 10A or Gender Studies 10. Examination of theories and practices of women who identify as Chicana feminist. Analysis of writings of Chicanas who do not identify as feminist but whose practices attend to gender inequities faced by Chicanas both within Chicana/Chicano community and dominant society. Attention to Anglo-European and Third World women. Concurrently scheduled with course CM214. P/NP or letter grading.

**111. Chicana/Chicano and Latina/Latino Intellectual Traditions. (5)** (Formerly numbered Chicana and Chicano Studies 111.) Lecture, five hours. General view of philosophical, cultural, and social thought as well as intellectual traditions in Americas. Roles of writers as intellectuals and cultural/political strategists, and as definers of (national) identity, social reality, and struggles of liberation. Letter grading.

**113. Day of Dead Ritual. (4)** (Formerly numbered Chicana and Chicano Studies 113.) Lecture, four hours; discussion, one hour (when scheduled). Introduction to philosophical roots and evolution of traditional celebration of Day of Dead ritual. Contemplation of indigenous, Spanish, Mexican, Chicano, and other influences and manifestations of this ritual. Special attention to Nahuatl language and worldview related to this ancient ritual, such as ancient calendar systems. Designed to motivate critical thinking about what is observed in altars today and impact globalization has on tradition. P/NP or letter grading.

**113B. Origin and Evolution of Ritual Traditions in Mexico and Central America. (4)** (Formerly numbered Chicana and Chicano Studies 113B.) Lecture, four hours; discussion, one hour (when scheduled). Analytical overview of origin and evolution of cultural traditions of Christmas, Easter, and Day of Dead, from pre-Hispanic to contemporary manifestations in Mexico and Central America. Exploration of how Aztec and Mayan astronomical rituals became foundation for Spanish domination and later globalization. Winter solstice became Christmas, spring equinox became celebration of Easter, and end of harvest became Todos los Santos. Examination of original purpose of

sugar skull, piñata, pastorela shepherds' drama, and traditional dances as effective tools of colonization. Letter grading.

**M114. Chicanos in Film/Video. (5)** (Formerly numbered Chicana and Chicano Studies M114.) (Same as Film and Television M117.) Lectures/screenings, five hours; discussion, one hour. Goal is to gain nuanced understanding of Chicano cinema as political, socio-economic, cultural, and aesthetic practice. Examination of representation of Mexican Americans and Chicanos in four Hollywood genres—silent greaser films, social problem films, Westerns, and gang films—that are major genres that account for films about or with Mexican Americans produced between 1908 and 1980. Examination of recent Chicano-produced films that subvert or signify on these Hollywood genres, including *Zoot Suit*, *Ballad of Gregorio Cortez*, and *Born in East L.A.* Consideration of shorter, more experimental work that critiques Hollywood image of Chicanos. Guest speakers include both pioneer and up-and-coming filmmakers. P/NP or letter grading.

**M115. Musical Aesthetics in Los Angeles. (4)** (Formerly numbered Chicana and Chicano Studies M115.) (Same as Ethnomusicology M115.) Lecture, three hours. Confronting aesthetics from classical perspective of art as intuition, examination on cross-cultural basis of diverse musical contexts within vast multicultural metropolis of Los Angeles, with focus on various musical networks and specific experiences of Chicano/Latino, African American, American Indian, Asian, rock culture, Western art music tradition, and commercial music industry. P/NP or letter grading.

**M116. Chicano/Latino Music in U.S. (5)** (Formerly numbered Chicana and Chicano Studies M116.) (Same as Ethnomusicology M116.) Lecture, four hours; discussion, one hour. Historical and analytical examination of musical expression of Latino peoples who have inhabited present geographical boundaries of U.S. P/NP or letter grading.

**117. Chicana/Chicano Images in Mexican Film and Literature. (4)** (Formerly numbered Chicana and Chicano Studies 117.) Lecture, four hours. Preparation: adequate understanding of Spanish-language films without English subtitles. Throughout its rich history, spanning more than 100 years, Mexican cinema has produced great variety of films that deal with Chicana/Chicano experience. Like its U.S. counterpart, Mexican cinematic discourse portrayal of Chicanas/Chicanos has been plagued by use of stereotypes that limit visual representation of Chicanas/Chicanos. Exploration of causes and effects for such obtuse cinematic representation. P/NP or letter grading.

**M118. Student-Initiated Retention and Outreach Issues in Higher Education. (4)** (Formerly numbered Chicana and Chicano Studies M118.) (Same as African American Studies M118, American Indian Studies M118, and Asian American Studies M168.) Lecture, four hours. Exploration of issues in outreach and retention of students in higher education, especially through student-initiated programs, efforts, activities, and services, with focus on UCLA as case. May be repeated twice for credit. Letter grading.

**M119. Chicano/Latino Community Formation: Critical Perspectives and Oral Histories. (4)** (Formerly numbered Chicana and Chicano Studies M119.) (Same as Labor Studies M123.) Lecture, four hours. Analysis of historical formation and development of Chicano/Latino communities in 20th century, with focus on labor, immigration, economic structures, electoral politics, and international dimensions. Letter grading.

**120. Immigration and Chicano Community. (4)** (Formerly numbered Chicana and Chicano Studies 120.) Lecture, three hours. Discussion on relationship between international immigration and development of Chicana/Chicano community. Examination of U.S. immigration policy and relationship between Mexican-origin population and other Latin American immigrants. P/NP or letter grading.

**M121. Issues in Latina/Latino Poverty: Mexican and Central American Voices from Los Angeles. (4)** (Formerly numbered Chicana and Chicano Studies M121.) (Same as Labor Studies M121 and Urban Planning M140.) Lecture, four hours. Examination of key issues (work, housing, and neighborhoods) in urban poverty,

with particular focus on Mexican and Central American immigrant populations in Los Angeles. Exploration of major theoretical models that explain urban poverty and application of them in comparative context while exploring differences between Mexican and Central American immigrants. Social conditions and forces that help us understand lives of poor people in comparative context while looking at differences between two major Latino-origin populations in Los Angeles. Critical analysis of new forms of urban poverty in contemporary American society. Letter grading.

**M122. Planning Issues in Latina/Latino Communities: Preserving and Strengthening Community Assets in Mexican and Salvadoran Los Angeles. (4)** (Formerly numbered Chicana and Chicano Studies M122.) (Same as Labor Studies M122 and Urban Planning M171.) Lecture, four hours. How community and economic development interact, role of assets in community development, and unique synergies and pitfalls that enable or disable communities from developing to their potential. How to strengthen and how to preserve community resources in Pico-Union neighborhood in Los Angeles. Research entails historical analysis, reviews, interviews, electronic asset mapping, web-based data processing and analysis, oral and written reports, and cyber-based research. Letter grading.

**123. Applied Research Methods in Latino Communities. (4)** (Formerly numbered Chicana and Chicano Studies 123.) Lecture, three hours. Through combination of lectures, key readings, and several experiments, introduction to several applied research methods that are highly effective in producing sound and methodologically rigorous studies on poor and/or Latino communities, including important data that can be used for critical analysis and policy recommendations. Letter grading.

**M124. Latinx Immigration History and Politics. (4)** (Formerly numbered Chicana and Chicano Studies M124.) (Same as Honors Collegium M143.) Lecture, four hours. Critical introduction to U.S. immigration policies and politics, and their disproportionate impacts on Latinx community. Topics include some of root causes of Latin American migration; federal, state, and local immigration lawmaking; and how race, gender, and sexuality impact and are impacted by immigration policies (e.g., legalization, border militarization, deportation) and politics (from voting to activism). P/NP or letter grading.

**M125. U.S./Mexico Relations. (4)** (Formerly numbered Chicana and Chicano Studies M125.) (Same as Labor Studies M125.) Lecture, four hours. Examination of complex dynamics in relationship between Mexico and U.S., using political economy approach to study of asymmetrical integration between advanced industrial economies and developing countries. P/NP or letter grading.

**M126. Politics of Crisis: Migration, Identity, and Religion. (4)** (Formerly numbered Chicana and Chicano Studies M126.) (Same as Honors Collegium M145.) Lecture, three hours. Examination of individual and collective religious response of Latin Americans and Latinas/Latinos in U.S. to dislocations, displacements, and fragmentation produced by conquest, colonization, underdevelopment, globalization, and migration. Letter grading.

**M127. Farmworker Movements, Social Justice, and United Farm Workers Legacy. (4)** (Formerly numbered Chicana and Chicano Studies M127.) (Same as Labor Studies M127.) Lecture, four hours. Designed for juniors/seniors. Historical and social context of farmworker organizing, including its multiracial origins and its influence on fight for equality of working women. Specific focus on organizing of United Farm Workers and Farm Laborers Organizing Committee, and their relationship to AFL-CIO, other unions, and their influence on Chicano Movement. Letter grading.

**M128. Race, Gender, and U.S. Labor. (4)** (Formerly numbered Chicana and Chicano Studies M128.) (Same as Labor Studies M128.) Lecture, four hours. Designed for juniors/seniors. Introduction to history and organization of labor movement in U.S. and North America. Discussion of race, class, and gender issues

raised within movement, and various strategies for social change and economic equity pursued through organized labor and other means. Letter grading.

**M128B. Class and Gender in Care Work. (4)** (Same as Asian American Studies M162, Gender Studies M140C, and Labor Studies M143.) Lecture, three hours; discussion, one hour. Examination of how gender, race, class, and citizenship status shape domestic labor in U.S. Examination of domestic worker experiences through film, fiction, and traditional scholarship. Investigation of why domestic work is in high demand, who employs domestic workers, and why immigrants and women of color make up large percentage of this workforce. Exploration of how domestic workers navigate pay and working conditions, and how they build community and family networks in shadows of their privileged employers. P/NP or letter grading.

**M128C. Common Thread: Garment Workers Past, Present, Future. (4)** (Same as Gender Studies M169 and Labor Studies M108.) Lecture, three hours. Study blends frameworks from economics, labor history, and ethnic studies to offer in-depth exploration of lives and experiences of garment industry workers from early 19th century to present. In contrast to traditional narratives, study locates garment workers—majority of whom are immigrant women—at vanguard of U.S. labor movement, showing how they pioneered new forms of worker education and other social welfare programs, and became leaders in fight for women's, civil, and immigrant rights. Exploration of garment work relationship to American culture, tracing how sweatshop became symbol of worker exploitation, how popular culture and fashion trends impacted lived realities of workers in those shops, and how racial and gendered expectations shaped public perceptions of garment workers. By doing so, study reveals garment work to be central thread that ties together histories of global trade, industrialization, gender and sexuality, immigration, radicalism, unionization, and American imperialism. P/NP or letter grading.

**M129. Community-Engaged Research Methods. (4)** (Formerly numbered M129.) (Same as Labor Studies M129 and Public Affairs M117C.) Lecture, four hours. Students are trained in designing, drafting, piloting, and administering new survey focused on transitions to adulthood. Written in collaboration with labor and community partners serving Latinx, Asian Americans and Pacific Islanders, Black, and Indigenous youth and low-wage workers, this survey gathers data on workforce development, labor rights, education, health, mental health, and civic engagement of young people residing in Black, Indigenous, and people of color communities. Students are exposed to historical development of racial statistics, role of racial statistics in contemporary life, and critical quantitative science. Includes testing questions on racial identity and attitudes, gender identity, workforce development, labor rights, healing and wellness, and other topics determined by labor and community partners. P/NP or letter grading.

**M129B. Participatory Action Research on Youth Organizing for Racial Justice. (4)** (Same as African American Studies M129B, American Indian Studies M129, Asian American Studies M128, and Public Affairs M122.) Lecture, four hours. Students are trained to conduct participatory action research on grassroots youth organizing across California. Students gain historical and theoretical background on multi-racial and inclusive organizing. Students learn how to collect and analyze data pertaining to pressing organizing issues. Study and critical analysis of youth organizing strategies. Weekly training modules on data collection and grassroots organizing strategies that prepare students for internships in grassroots youth organizing groups serving Asian American, Black, Latinx, and Native American communities. P/NP or letter grading.

**M130. Worker Center Movement: Next Wave Organizing for Justice for Immigrant Workers. (4)** (Formerly numbered Chicana and Chicano Studies M130.) (Same as African American Studies M167, Asian American Studies M163, and Labor Studies M167.) Seminar, three hours. Development of theoretical and practical understanding of worker center movement, with focus on historical factors that have led to emer-

gence and growth of worker centers. Role of worker centers in promoting multiethnic and multiracial campaigns for workplace and economic justice. Transnational cross-border solidarity issues and rights of undocumented workers. P/NP or letter grading.

**131. Barrio Popular Culture. (4)** (Formerly numbered Chicana and Chicano Studies 131.) Lecture, three hours. Construction of model by which to organize study of Chicana/Chicano popular culture by focusing on barrio as metaphor for community. Examination of beliefs, myths, and values of Chicana/Chicano culture and representations in icons, heroes, legends, stereotypes, and popular art forms through literature, film, video, music, mass media, and oral history. Letter grading.

**M132. Border Consciousness. (4)** (Formerly numbered Chicana and Chicano Studies M132.) (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M132.) Lecture, three hours; discussion, one hour (when scheduled). Investigation through history, popular culture, and mass media of bilingual and bicultural identities produced by geographical and cultural space between Mexico and U.S. Special attention to border consciousness as site of conflict and resistance. Letter grading.

**M133. Chicana Lesbian Literature. (4)** (Formerly numbered Chicana and Chicano Studies M133.) (Same as Gender Studies M133 and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M133.) Lecture, four hours. Exploration of intersection of radical First and Third World feminist politics, lesbian sexuality and its relationship to Chicana identity, representation of lesbianism in Chicana literature, meaning of *familia* in Chicana lesbian lives, and impact of Chicana lesbian theory on Chicana/Chicano studies. Letter grading.

**M134XP. Engaging Immigrants and Their Families. (5)** (Formerly numbered Chicana and Chicano Studies M134SL.) (Same as Community Engagement and Social Change M134XP and Labor Studies M134XP.) Lecture, two hours; discussion, two hours; field placement, two hours. Survey and exploration of immigrant landscape in Los Angeles—truly global city acting in part to buffer, settle, and incorporate immigrants in daily life. Focus on civil society to explore multiple forms of interventions and impacts that take place in multiple communities across Los Angeles basin. Service learning partnerships focus on organizations addressing immigration concerns. Letter grading.

**CM135. Bilingual Writing Workshop. (4)** (Formerly numbered Chicana and Chicano Studies CM135.) (Same as Gender Studies M135C and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M135.) Seminar, four hours. Limited to juniors/seniors. Writing sample required; access to course web page mandatory; need not be bilingual to enroll. Technical instruction, analysis, and theoretical discussion of bilingual creative expression through genre of short fiction. Bilingualism as both politics and aesthetics to be central theme. Discussion and analysis of Chicana/Chicano and Latina/Latino short story collections. Peer critique of weekly writing assignments. Emphasis on narrative techniques such as characterization, plot, conflict, setting, point of view, and dialogue, and magical realism as prevailing Chicanesque/Latinesque style. Some attention to process of manuscript preparation, public reading, and publication. Concurrently scheduled with course C235. Letter grading.

**M136. Censored! Art on Trial. (4)** (Formerly numbered Chicana and Chicano Studies M136.) (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M136.) Lecture, four hours. Examination of censorship in visual arts, particularly art of queer Chicana/Chicano and Latina/Latino artists such as Alma Lopez, Ester Hernández, and Alex Donis. Other censored artists include feminist artist Yolanda López, queer artists Robert Mapplethorpe and David Wojnarowicz, painter Christ Offili, photographers Sally Mann and Andres Serrano, printmaker Enrique Chagoya, muralist Noni Olabisi, writer Salman Rushdie, and four performance artists—Karen Finley, Tim Miller, John Fleck, and Holly Hughes—whose work was vetoed by chair of National Endowment for Arts (NEA) in 1990 after they had suc-

cessfully passed through NEA's peer review process and who came to be known as NEA Four. P/NP or letter grading.

**M137. Maya Art and Architecture. (4)** (Formerly numbered Chicana and Chicano Studies M137.) (Same as Art History CM139A.) Lecture, three hours. Requisite: course 27. Study of art of selected Maya-speaking cultures of southern Mesoamerica from circa 2000 BC to Conquest, with particular emphasis on history and iconography. P/NP or letter grading.

**138A. Space, Place, and Race. (4)** (Formerly numbered Chicana and Chicano Studies 138A.) Seminar, four hours. Investigation of theories of spatial formation and their import for study of race and ethnicity in the U.S. Theories of space and place from interdisciplinary list of readings to investigate ways racial formation is embedded in property, maps, streets, and borders. Themes include introduction to spatial theory, settler colonialism, critical cartography, boundaries, and transgression. How space has shaped racial formation in multiracial places. Investigation of ways space, place, and race operate in maps, built environment, and multimedia world. P/NP or letter grading.

**138B. Barrio Suburbanism. (4)** (Formerly numbered Chicana and Chicano Studies 138B.) Seminar, four hours. Examination of barrio suburbanism, in which Chicanas/Chicanos and Latinas/Latinos impact working- and middle-class suburbs to reshape geography of metropolitan centers. Building upon urban studies of roles of public policy and planning in formation of el barrio, how suburban forms operate in multiracial and regional context. Points of intersection and conflict that illuminate how Chicana/Chicano and Latina/Latino populations have impacted economic, social, and political contours of suburbs in Los Angeles metropolitan region. Major themes include urban policy, planning history, mapping, immigration, relational racial formation, and pursuit of regional democracy. P/NP or letter grading.

**M139. Topics in Chicana/Chicano and/or Latina/Latino Literature. (5)** (Formerly numbered Chicana and Chicano Studies M139.) (Same as English M191B.) Seminar, three or four hours. Enforced requisite: English Composition 3. Variable specialized studies course in Chicana/Chicano and/or Latina/Latino literature. Topics may include labor and literature; Chicana/Chicano visions of Los Angeles; immigration, migration, and exile; autobiography and historical change; Chicana/Chicano journalism; literary New Mexico; specific literary genres. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M140A. Diasporic Nonfiction: Media Engagements with Memory and Displacement I. (4)** (Formerly numbered Chicana and Chicano Studies M140A.) (Same as African American Studies M170A.) Seminar, three hours. Video production course, with emphasis on autobiographical, critical, and performance-based modes of nonfiction media making, drawing on practices of diasporic filmmakers who have grappled with suppressed collective memories of displacement, trauma, exile, and migration. What does it mean to make videos about memory in places where direct cues to remembering cannot be seen? Introduction to concepts from films and readings. Production assignments and screenings, with focus on questions of how to represent history, memory, family dynamics, and lived experience according to perspectives and interests of diasporic subjects. In Progress grading (credit to be given only on completion of course M140B).

**M140B. Diasporic Nonfiction: Media Engagements with Memory and Displacement II. (4)** (Formerly numbered Chicana and Chicano Studies M140B.) (Same as African American Studies M170B.) Seminar, three hours. Enforced requisite: course M140A. Students complete 20- to 30-minute video projects about issues or experiences central to everyday lives of collectives of diasporic peoples. They learn to propose, record, edit, and distribute one socially engaged non-fiction video and draw on their experiences from course M140A in writing voiceover, choreographing dances, designing public performances, interviewing, and recording everyday life. P/NP or letter grading.

**C141. Chicana and Latin American Women's Narrative.** (4) (Formerly numbered Chicana and Chicano Studies C141.) Lecture, four hours. Preparation: reading knowledge of Spanish (level 4). Analyses, comparisons, and discussion of narrative literary production of U.S. Chicana writers and their Latin American counterparts in English and Spanish, with particular focus on how each group deals with gender, ethnic, and class issues. Concurrently scheduled with course C251. Letter grading.

**142. Mesoamerican Literatures.** (4) (Formerly numbered Chicana and Chicano Studies 142.) Lecture, four hours. Preparation: reading knowledge of Spanish (level 4). Survey of premises of Mesoamerican literatures, including myths, lyrics, poetry, religious celebrations, rituals, and drama, specifically of Aztec and Mayan peoples prior to European contact. Letter grading.

**143. Mestizaje: History of Diverse Racial/Cultural Roots of Mexico.** (4) (Formerly numbered Chicana and Chicano Studies 143.) Lecture, four hours; discussion, one hour (when scheduled). Historical examination of diverse racial and cultural roots of Chicanas and Chicanos. Utilizing theoretical frameworks of *mestizaje*, *Aztlán*, *indigenismo*, *La Raza Cósmica*, and *la tercera raiz*, examination of some important groups who have contributed to formation of Mexican national culture. Development of race relations in Mexico during colonial period, with focus on analysis of Nahuas (Aztecs), Mixtecs, Spaniards, and African slave population. Analysis of Asian immigration to Mexico and California during national period, specifically examination of migration and adaptation experiences of Chinese, Japanese, and Punjabi-Indian immigrants. P/NP or letter grading.

**M143B. Afro-Latina/o Experience(s) in U.S.** (4) (Formerly numbered 143B.) (Same as African American Studies M155.) Lecture, four hours; discussion, one hour (when scheduled). Focus on Afro-Latina/o experience in U.S. through exploration of its historical roots and contemporary forms. How colorism in Latin America and U.S. influence Afro-Latina/o identity. Regional differences and different types of Afro-Latina/os that include Blaxicans, Nuyoricans, Afro-Cubans, and others are taken into account. Discussion of themes that include feminism, politics, culture, music, and identities in order to obtain comprehensive picture of Afro-Latina/os in U.S. yesterday and today. P/NP or letter grading.

**M144. Women's Movement in Latin America.** (4) (Formerly numbered Chicana and Chicano Studies M144.) (Same as Gender Studies M144 and Labor Studies M144.) Lecture, four hours. Course on women's movements and feminism in Latin America and Caribbean to examine diverse social movements and locations from which women have launched political and gender struggles. Discussion of forms of feminism and women's consciousness that have emerged out of indigenous rights movements, environmental struggles, labor movements, Christian-based communities, peasant and rural organizing, and new social movements that are concerned with race, sexuality, feminism, and human rights. Through comparative study of women's movements in diversity of political systems as well as national and transnational arenas, students gain understanding of historical contexts and political conditions that give rise to women's resistance, as well as major debates in field of study. P/NP or letter grading.

**145B. Literature of Chicana/Chicano Movement.** (4) (Formerly numbered M145B.) Lecture, three hours. Examination of literature of Chicana/Chicano movement covering period from first manifestations of Chicano artistic production in 1965 with *el Teatro Campesino* through rise of women's writing, including work by Cherrie Moraga (1983), Helena María Viramontes (1985), and Sandra Cisneros (1991). P/NP or letter grading.

**146. Chicano Narrative.** (4) (Formerly numbered M146.) Lecture, three hours. Introduction to major Chicano narrative genres—novel, romance, satire, autobiography, *crónica/semblanza*, Chicana detective novel, and Chicana solidarity fiction. Texts examined within

their own geographic, cultural, and historical contexts, as well as within history of narrative forms. P/NP or letter grading.

**CM147. Transnational Women's Organizing in Americas.** (4) (Formerly numbered Chicana and Chicano Studies CM147.) (Same as Gender Studies M147C.) Lecture, four hours. Feminist theories of transnational organizing. Examination of gender and race as central to processes of globalization and essential to economic and political struggles encompassed in transnational power relations. Exploration of how questions of race and gender influence global economic policies and impact local actors and their communities. In time when people, capital, cultures, and technologies cross national borders with growing frequency, discussion of process of accelerated globalization has been linked to feminization of labor and migration, environmental degradation, questions of diaspora, sexuality, and cultural displacement, as well as growing global militarization. Problems and issues created by globalization and cultural, social, and political responses envisioned by transnational organizing. Concurrently scheduled with course C215. P/NP or letter grading.

**M148. Politics of Struggle: Race, Solidarity, and Resistance.** (4) (Formerly numbered Chicana and Chicano Studies M148.) (Same as African American Studies M148.) Lecture, four hours. Examination of Chicana/Chicano intergroup relations and political coalitions with other Latinos, African Americans, Asian and Pacific Islanders, and Euro-Americans, especially in communities undergoing rapid changes in demographic composition. Letter grading.

**149. Gendered Politics and Chicana/Latina Political Participation.** (4) (Formerly numbered Chicana and Chicano Studies 149.) Lecture, four hours. Examination of Chicanas and Latinas as participants, organizers, and leaders in communities, workplaces, labor unions, and government. Survey of Chicanas/Latinas in politics and as policymakers in appointed and elected offices. Analysis of gendering of politics and political behavior. Letter grading.

**150. Affirmative Action: History and Politics.** (4) (Formerly numbered Chicana and Chicano Studies 150.) Lecture, four hours; discussion, one hour (when scheduled). Historical examination of political economic context in which affirmative action policies and programs were conceived and implemented. Review of impact on Chicanas/Chicanos, Latinas/Latinos, and other communities. Specific analysis of university admissions, hiring and contracting practices, and state initiatives. Letter grading.

**151. Human Rights in Americas.** (4) (Formerly numbered Chicana and Chicano Studies 151.) Lecture, four hours. International human rights laws in North, Central, and South America and U.S. foreign policy in context of historical, political, social, and legal issues and court decisions involving U.S. and its role and relations with governments and institutions. Historical and contemporary development of regional and international law, institutions, law, and norms related to promotion and protection of human rights. P/NP or letter grading.

**152. Disposable People: U.S. Deportation and Repatriation Campaigns.** (4) (Formerly numbered Chicana and Chicano Studies 152.) Seminar, four hours. Examination of U.S. deportation campaigns targeted at Mexican, Central American, and other Latin American workers, residents, and U.S.-born citizens. Addresses various periods of large-scale, highly-organized deportation and repatriation efforts including Great Depression in 1930s, Operation Wetback in 1950s, Central American Minors (CAM) program, Deferred Action for Childhood Arrivals (DACA), and Temporary Protected Status (TPS). P/NP or letter grading.

**153A. Central Americans in U.S.** (4) (Formerly numbered Chicana and Chicano Studies 153A.) Lecture, four hours. Interdisciplinary survey of social, historical, political, economic, educational, and cultural experiences of Central American immigrants and their children in U.S. Introduction to several contemporary experiences and issues in U.S. Central American communities. With focus mostly on Guatemalan, Honduran, and Salvadoran immigrants, exploration of social structures that constrain individuals, as well as

strategies and behaviors immigrants and their communities have taken to establish their presence and incorporate into U.S. society. How Central American identity has been constructed and how this identity intersects with race, gender, and legal status. P/NP or letter grading.

**153B. Central American Racial Constructions.** (4) (Formerly numbered Chicana and Chicano Studies 153B.) Lecture, four hours. Interdisciplinary, transhistorical, and transnational exploration of indigenism, indigeneity, afro-indigeneity, blackness, *mulataje*, *ladinización*, and other racial-gendered constructions among peoples of and in Central America, and how these groups redefine their racial identification and disidentifications in and/or in relation to U.S. P/NP or letter grading.

**153C. Migrating U.S./Central American Cultural Production.** (4) (Formerly numbered Chicana and Chicano Studies 153C.) Lecture, four hours. Exploration of culture making through memory, legends, counter-narratives, signs, symbols, foodways, and sounds as migratory processes that are transnational, transgenerational, translocal, and as part of U.S. Central American, Latina/Latino, and migrant experience within, across, and among cultural groups. P/NP or letter grading.

**153D. U.S. Central American Narratives.** (4) (Formerly numbered Chicana and Chicano Studies 153D.) Lecture, four hours. Examination of textual narratives and genres that emerged or were actively deployed from Central America beginning with civil wars of late 1960s into late 1990s. Texts are read beyond confines of nation-state as narratives and subjectivities in exile. As part of stories of immigrants, these narratives contribute to making of U.S. Central American diasporas, and these communities making home in some other place than original or (re-)imagined homeland. P/NP or letter grading.

**M154. Contemporary Issues among Chicanas.** (4) (Formerly numbered Chicana and Chicano Studies M154.) (Same as Gender Studies M132B.) Lecture, two and one half hours. Prerequisite: Gender Studies 10. Overview of conditions facing Chicanas in U.S., including issues on family, immigration, reproduction, employment conditions. Comparative analysis with other Latinas. P/NP or letter grading.

**M155A. Latinos in U.S.** (4) (Formerly numbered Chicana and Chicano Studies M155A.) (Same as Sociology M155.) Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Exploration of history and social conditions of Latinos in Los Angeles as well as nationally, with particular emphasis on their location in larger social structure and on comparisons with other minority groups. Topics include migration, family, education, and work issues. P/NP or letter grading.

**M155B. U.S. Latino Politics.** (5) (Formerly numbered Chicana and Chicano Studies M155B.) (Same as Political Science M181B) Lecture, four hours; discussion, one hour (when scheduled). Examination of history and contemporary role of Latinos in U.S. political system. Topics include historical analysis of Latino immigration and migration; civil rights movement; increases in citizenship, registration, and voting in 1980s and 1990s; new wave of anti-immigrant attitudes; Development, Relief, and Education for Alien Minors (DREAM) Act and subsequent DREAMer movement; and response by Latinos today, with discussion of role of Latino vote in recent presidential elections. P/NP or letter grading.

**M156A. Immigrant Rights, Labor, and Higher Education.** (4) (Formerly numbered Chicana and Chicano Studies M156A.) (Same as Asian American Studies M166A and Labor Studies M166A.) Lecture, three hours; discussion, one hour. New immigrant rights movement, with particular attention to labor and higher education. Overview of history of immigrant rights movement and examination of development of coalition efforts between labor movement and immigrant rights movement nationally and locally. Special focus on issue of immigrant students in higher education, challenges facing undocumented immigrant students, and legislative and policy issues that have emerged. Students conduct oral histories, family histories, research on immigration and immigrant rights,

write poetry and spoken word about immigrant experience, and work to collectively develop student publication on immigrant students in higher education. P/NP or letter grading.

**M156B. Research on Immigration Rights, Labor, and Higher Education. (4)** (Formerly numbered Chicana and Chicano Studies M156B.) (Same as Asian American Studies M166B and Labor Studies M166B.) Seminar, two hours. Prerequisite: course M156A. Expansion of research conducted by students in course M156A involving oral histories, research on immigration/labor/higher education, and evaluation of legislation and legal issues impacting undocumented students. Letter grading.

**M156C. Research on Immigrant Students and Higher Education. (4)** (Formerly numbered Chicana and Chicano Studies M156C.) (Same as Asian American Studies M166C and Labor Studies M166C.) Seminar, three hours. Enforced prerequisites: courses M156A, M156B. Expansion of research conducted by students in courses M156A and M156B involving oral histories, research on immigration/labor/higher education, and evaluation of legislation and legal issues impacting undocumented students. Designed around class project, where students work on showcasing all material collected throughout year. Letter grading.

**157. Chicano Movement and Its Political Legacies. (4)** (Formerly numbered Chicana and Chicano Studies 157.) Lecture, four hours. Collective examination of Chicano Movement of 1960s and 1970s and analysis of its political legacies. Grounded in historiographic inquiry and social movement theory, investigation of mobilization of diverse sectors of *el movimiento*, including students, workers, artists, youth, community activists, and women. Exploration of myriad issues and struggles that compelled Chicanas/Chicanos to resist such as land and labor rights, education, anti-war movements, community autonomy, police brutality, political inclusion, cultural recovery, racism, sexism, and class exploitation. Investigation of diverse ideologies, debates, and legacies of Chicano Movement through analysis of Chicana/Chicano motivations for organizing, modes, strategies, innovations, challenges, and articulation of new political subjectivities. P/NP or letter grading.

**M158. Chicana Historiography. (4)** (Formerly numbered Chicana and Chicano Studies M158.) (Same as Gender Studies M157 and History M151D.) Lecture, four hours. Examination of Chicana historiography, looking closely at how practice of writing of history has placed Chicanas into particular narratives. Using Chicana feminist approaches to study of history, revisiting of specific historical periods and moments such as Spanish Conquest, Mexican Period, American Conquest, Mexican Revolution, and Chicano Movement to excavate untold stories about women's participation in and contribution to making of Chicana and Chicano history. P/NP or letter grading.

**M159A. History of Chicano Peoples. (4)** (Formerly numbered Chicana and Chicano Studies M159A.) (Same as History M151A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey lecture course on historical development of Mexican (Chicano) community and people of Mexican descent (Indio-Mestizo-Mulato) north of Rio through 17th, 18th, and 19th centuries, with special focus on labor and politics. Provides integrated understanding of change over time in Mexican community by inquiry into major formative historical forces affecting community. Social structure, economy, labor, culture, political organization, conflict, and international relations. Emphasis on social forces, class analysis, social, economic, and labor conflict, ideas, domination, and resistance. Developments related to historical events of significance occurring both in U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and field research, and submission of paper. P/NP or letter grading.

**M159B. History of Chicano Peoples. (4)** (Formerly numbered Chicana and Chicano Studies M159B.) (Same as History M151B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey lecture course on historical development of Mexican (Chicano) community and

people of Mexican descent in U.S. through 20th century, with special focus on labor and politics. Provides integrated understanding of change over time in Mexican community by inquiry into major formative historical and policy issues affecting community. Within framework of domination and resistance, discussion deals with social structure, economy, labor, culture, political organization, conflict, and ideology. Developments related to historical events of significance occurring both in U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and/or field research, and submission of paper. P/NP or letter grading.

**160. Introduction to Chicana/Chicano Speech in American Society. (4)** (Formerly numbered Chicana and Chicano Studies 160.) Lecture, three hours. Survey course presenting (1) basic elements of Chicano language use, including history of Chicano languages, types and social functions of Chicano speech (*pachuco*, *caló*, Spanglish), sexist language, and multilingualism and monolingualism and (2) major social issues associated with language use by Chicanos and other urban ethnic populations. Letter grading.

**161. Chicana and Chicano Rhetoric. (4)** (Formerly numbered Chicana and Chicano Studies 161.) Lecture, four hours. Examination of speeches and other public discourse of Chicana/Chicano communities associated with political and social movements, using field of rhetoric (study of public speech and persuasion). Development of public speaking skills and abilities. P/NP or letter grading.

**163. Bilingual Advantage: Spanish Language Topics on Chicana/Chicano and Latin American Cultures. (5)** (Formerly numbered Chicana and Chicano Studies 163.) Lecture, four hours; discussion, one hour. Prerequisite: Spanish 4. Review of Spanish language literature, newsprint, radio, and television in U.S., providing for student development of academic skills in Spanish. Comparison with Spanish language mass media in other parts of world. Letter grading.

**164XP. Oral History: Latino New Immigrant Youth. (5)** (Formerly numbered 164SL.) Seminar, three hours; tutoring, three hours. Theory, methodology, and practice of oral history, together with background information on Mexican, Central American, and Latino immigration. Emphasis on oral history and *testimonio* methods. P/NP or letter grading.

**165. Latinas and Latinos in Public Education. (4)** (Formerly numbered Chicana and Chicano Studies 165.) Lecture, four hours. Examination of language issues pertinent to educational systems, including language inequity, literacy, testing, and socialization, as well as institutional ideologies. Letter grading.

**166. Paulo Freire for Chicana/Chicano Classroom. (4)** (Formerly numbered Chicana and Chicano Studies 166.) Seminar, four hours. Introduction to pedagogy of Paulo Freire and examination of historical and contemporary problems circumscribing Chicana/Chicano education. Central focus to offer Freirian alternative to answer theoretical, methodological, practical, and policy questions about schooling of Chicanas/Chicanos in U.S. P/NP or letter grading.

**M167XP. Taking It to Street: Spanish in Community. (5)** (Formerly numbered Chicana and Chicano Studies M167SL.) (Same as Spanish M165XP.) Seminar, three hours; fieldwork, 10 hours. Enforced prerequisite: Spanish 25 or 27. Service learning course to give students opportunity to use cultural and linguistic knowledge acquired in Spanish classes in real-world settings. Students required to spend minimum of eight to 10 hours per week at agreed on site in Latino community. P/NP or letter grading.

**168A. Latinos: Print Media. (4)** (Formerly numbered Chicana and Chicano Studies 168A.) Lecture, four hours. Examination of systemic (mis)representations of Latinos by print media source (*Los Angeles Times*) by means of critical discourse analysis and metaphor theory. Investigation of empirical basis for theories of racism in language in this context. Student projects range from immigration to education and crime to culture. Letter grading.

**168B. Latinos: Television News. (4)** (Formerly numbered Chicana and Chicano Studies 168B.) Lecture, four hours. Prerequisite: course 168A. Study of multi-

modal (visual, graphic, spoken, audio, and text) images disseminated by television news programs to learn how nation comes to their understanding of Latinos. Development of critical visual interpretive acuity through semiotics training and analysis of actual television news stories. Letter grading.

**169. Representations of Indigenous Peoples in Americas. (4)** (Formerly numbered Chicana and Chicano Studies 169.) Lecture, four hours. Strongly recommended prerequisite: course 101. Introduction to different forms of representation of indigenous peoples and their presence in Americas, with emphasis on Mesoamerica and Andes. How indigenous images are expressed, perceived, and constructed at point of contact with Europeans during development of indigenismo and in current period. Discussion of how these relate to Chicana/Chicano identity construction. Letter grading.

**169B. Xican@ Indigeneity. (4)** (Formerly numbered Chicana and Chicano Studies 169B.) Seminar, four hours. Limited to juniors/seniors. Research seminar organized around readings and engaged discussion of critical topic of interest in field. Exploration of issue, its theoretical implication for field, and practical implications for communities. Addresses Xican@ indigeneity. Exploration of historical and contemporary indigenous character of Xican@ peoples; what it means to be indigenous, Indian *mestiza/o*; relationship to and between cultural and linguistics memories, continuities, losses, changes, revitalization, and reclamation; and indigenous epistemologies, decolonization, and *la perspectiva Xican@*. Final research project required. P/NP or letter grading.

**M170XP. Topics in Community Engagement. (5)** (Formerly numbered Chicana and Chicano Studies M170SL.) (Same as Spanish M172XP.) Seminar, four hours; field project, four to six hours. Prerequisite: Spanish 25. Introduction to community engagement in various forms. Exploration of methods of community involvement and change making processes within variety of professional contexts in community. Students engage in experiential research, service, and/or learning to broaden their understanding of Spanish-speaking and Latinx communities. Students have opportunity to use cultural and linguistic knowledge acquired in Spanish classes in real-world settings. Topics may include oral tradition, immigrant narratives, visual culture and community, language and identity in community, urban spaces, etc. May be repeated for credit with topic change. P/NP or letter grading.

**171. Humor as Social Control. (4)** (Formerly numbered Chicana and Chicano Studies 171.) Lecture, four hours. Hegemonic humor directs laughter of more powerful people against those with less power. In this case laughter becomes weapon used against Latinos and immigrants. With rise of Latinos in last decade, there has been increase of various guises of anti-Latino hegemonic humor in commercial mass-mediated popular culture. Exploration of theorizing, as well as today's myriad examples, of such humor to develop critical literacy of social work it accomplishes. Letter grading.

**172. Chicana and Chicano Ethnography. (4)** (Formerly numbered Chicana and Chicano Studies 172.) Lecture, four hours. Culture change theory encompasses such issues as innovation, syncretism, colonialism, modernization, urbanization, migration, and acculturation. Examination of methods anthropologists/ethnographers use in studying and analyzing culture change within ethnohistorical background of Mexican and Mexican American people to clarify social and cultural origins of modern habits and customs and, more importantly, unravel various culture change threads of that experience. Topics include technology and evolution, Indian nation-states, miscegenation, peasantry, expansionism, industrialization, immigration, ethnicity, and adaptation. Field project on some aspect of culture change required. P/NP or letter grading.

**M173. Nonviolence and Social Movements. (4)** (Formerly numbered Chicana and Chicano Studies M173.) (Same as African American Studies M173 and Labor Studies M173.) Lecture, three hours; discussion, one hour. Overview of nonviolence and its impact on social

movements both historically and in its present context in contemporary society, featuring lectures, conversations, films, readings, and guest speakers. Exploration of some historic contributions of civil rights struggles and role of nonviolent action throughout recent U.S. history. Examination of particular lessons of nonviolent movements as they impact social change organizing in Los Angeles. P/NP or letter grading.

**174AX-174BX. Restoring Civility: Understanding, Using, and Resolving Conflict. (5-5)** (Formerly numbered Chicana and Chicano Studies 174AX-174BX.) Lecture, four hours; discussion, three hours. Course 174AX is enforced requisite to 174BX. Designed for students who want to learn principles of dialogue and mediation, as alternatives to violence, and practice how to apply them in educational settings. In Progress grading (174AX) and P/NP or letter (174BX) grading.

**M175. Chicana Art and Artists. (4)** (Formerly numbered Chicana and Chicano Studies M175.) (Same as Art M184 and World Arts and Cultures M128.) Lecture, four hours. Introduction to Chicana art and artists. Examination of Chicana aesthetic. Chicana artists have developed unique experience and identity as artists and Chicanas. Letter grading.

**176. Globalization and Transnationalism: Local Historical Dynamics and Praxis. (4)** (Formerly numbered Chicana and Chicano Studies 176.) Lecture, four hours. Analysis of dynamics of Chicana/Chicano transnational community formation in comparative global perspective, explored both as historical result of and key future actor in localized dynamics of transnationalization in California's relation to world. Analysis of Chicana/Chicano experience in California as both highly linked node and localized microcosm of dynamics of globalization that is both affected by as well as influences course of alternative scenarios of globalization. Designed to help students develop critical political economy analysis of interplay between globalization and localized transnational dynamics that together are giving meaning to and constructing new social identities and strategies for struggle throughout world. P/NP or letter grading.

**CM177. Latino Social Policy. (4)** (Formerly numbered Chicana and Chicano Studies CM177.) (Same as Public Affairs M142.) Lecture, three hours; discussion, one hour (when scheduled). Examination of social welfare of Latinos (Chicanos, Puerto Ricans, and Cubans) in U.S. through assessment and critical analysis of social policy issues affecting them. Survey of social, economic, cultural, and political circumstances affecting ability of Latinos to access public benefits and human services. Concurrently scheduled with course C277. Letter grading.

**178. Latinas/Latinos and Law: Comparative and Historical Perspectives. (4)** (Formerly numbered Chicana and Chicano Studies 178.) Lecture, four hours. Survey of experiences of Latinas/Latinos with U.S. legal system. Examination of landmark appellate decisions and litigation efforts in jury service, voting rights, language, public accommodations, education, and other areas. Critical assessment of role of legal principles and litigation in improving Latina/Latino position within U.S. society. Letter grading.

**C179. Language Politics and Policies in U.S.: Comparative History. (4)** (Formerly numbered Chicana and Chicano Studies C179.) Lecture, four hours. Historical overview of national and institutional language policies, especially schooling, in U.S. as context to understanding social, legal, and political constraints on bilingualism. Definitions and development of language policy and planning, history of general and educational language policies in U.S., demographic profile of language diversity, and current language and educational policy issues in U.S. Comparisons with selected international cases. Concurrently scheduled with course C274. P/NP or letter grading.

**180. Chicana/Chicano Schooling and Community Activism. (4)** (Formerly numbered Chicana and Chicano Studies 180.) Seminar, four hours. Overview of Chicana/Chicano schooling issues in U.S., with special emphasis on several important historical events that exemplify struggle for educational justice and equity that affected Chicana/Chicano education—Mendez versus Westminster (1947) desegregation case and 1968 high school Chicana/Chicano student

walkouts. Through oral history projects, documentation of legacy of Sylvia Mendez, who experienced segregation in one Mexican school in 1940s, Sal Castro, Chicano teacher and central figure in 1968 walkouts, and Chicano Youth Leadership Conference (CYLC). Examination of how historical, social, and political forces have impacted Chicana/Chicano educational experiences. P/NP or letter grading.

**181. History of Chicana/Chicano Los Angeles, 20th Century. (4)** (Formerly numbered Chicana and Chicano Studies 181.) Lecture, four hours. History of Mexican American people in 20th-century Los Angeles. Readings and lectures emphasize formation of regional identity among Mexican Americans in Los Angeles and their significance to emergence of multicultural metropolis. Letter grading.

**CM182. Understanding Whiteness in American History and Culture. (4)** (Formerly numbered Chicana and Chicano Studies CM182.) (Same as History M151C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History, construction, and representation of whiteness in American society. Readings and discussions trace evolution of white identity and explore its significance to historical construction of race class in American history. Concurrently scheduled with course C256. Letter grading.

**M183. History of Los Angeles. (4)** (Formerly numbered Chicana and Chicano Studies M183.) (Same as History M155.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Social, economic, cultural, and political development of Los Angeles and its environs from time of its founding to present. Emphasis on diverse peoples of area, changing physical environment, various interpretations of city, and Los Angeles' place among American urban centers. P/NP or letter grading.

**184. History of U.S./Mexican Borderlands. (4)** (Formerly numbered Chicana and Chicano Studies 184.) Lecture, four hours. Survey of historic and geographic diversity of Chicana/Chicano identity and culture, with emphasis on regional communities of California, New Mexico, and Texas in Spanish/Mexican borderlands as situated within U.S. national context. Letter grading.

**M185. Whose Monument Where: Course on Public Art. (4)** (Formerly numbered Chicana and Chicano Studies M185.) (Same as Art M185 and World Arts and Cultures M126.) Lecture, four hours. Recommended corequisite: course M186A, M186B, or M186C. Examination of public monuments in U.S. as basis for cultural insight and critique of American values from perspective of artist. Use of urban Los Angeles as textbook in urban space issues such as who is public, what is public space at end of 20th century, what defines neighborhoods, and do different ethnic populations use public space differently. P/NP or letter grading.

**M186A. Beyond Mexican Mural: Beginning Muralism and Community Development. (4)** (Formerly numbered Chicana and Chicano Studies M186A.) (Same as Art M186A and World Arts and Cultures M125A.) Studio/lecture, four hours. Corequisite: course M186AL. Investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. P/NP or letter grading.

**M186AL-M186BL-M186CL. Beyond Mexican Mural: Muralism and Community Laboratory. (4-4-2)** (Formerly numbered Chicana and Chicano Studies M186AL-M186BL-M186CL.) (Same as Art M186AL-M186BL-M186CL and World Arts and Cultures M125AL-M125BL-M125CL.) Course M186AL is requisite to M186BL, which is requisite to M186CL. Mural and Digital Laboratory is art studio housed at Social and Public Art Resource Center in Venice, CA, where students work in community-based setting. Open to students during scheduled hours with laboratory tech support, it offers instruction as students independently and in collaborative teams research, design, and produce large-scale painted and digitally generated murals to be placed in community setting. P/NP or letter grading. **M186AL.** Beginning. Laboratory, four

hours. Corequisite: course M186A; **M186BL.** Intermediate. Laboratory, four hours. Requisites: courses M186A, M186AL. Corequisite: course M186B; **M186CL.** Advanced. Laboratory, two hours. Corequisite: course M186C.

**M186B. Beyond Mexican Mural: Intermediate Muralism and Community Development. (4)** (Formerly numbered Chicana and Chicano Studies M186B.) (Same as Art M186B and World Arts and Cultures M125B.) Studio/lecture, four hours. Requisites: courses M186A, M186AL. Corequisite: course M186BL. Continuation of investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. Continuation of project through states of production to full scale and community approval. P/NP or letter grading.

**M186C. Beyond Mexican Mural: Advanced Muralism and Community Development. (4)** (Formerly numbered Chicana and Chicano Studies M186C.) (Same as Art M186C and World Arts and Cultures M125C.) Studio/lecture, six hours. Requisites: courses M186B, M186BL. Corequisite: course M186CL. Continuation of investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. Continuation of project through installation, documentation, and dedication, with work on more advanced independent projects. P/NP or letter grading.

**M187. Latino Metropolis: Architecture and Urbanism in Americas. (4)** (Formerly numbered Chicana and Chicano Studies M187.) (Same as History M151E and Urban Planning M187.) Lecture, four hours. Introduction to history of architecture and urbanism in Americas, from fabled cities of Aztec empire to barrios of 21st-century Los Angeles and Miami. Emphasis on role of cities in Latina/Latino experience and uses of architecture and city planning to forge new social identities rooted in historical experiences of conquest, immigration, nationalization, and revolution. P/NP or letter grading.

**M187B. Colonial Latin American Art. (4)** (Formerly numbered Chicana and Chicano Studies M187B.) (Same as Art History CM141.) Lecture, three hours; discussion, one hour (when scheduled). Art and architecture of colonial Americas from 16th to 18th century. P/NP or letter grading.

**187C. Aztec Art. (4)** (Formerly numbered Chicana and Chicano Studies 187C.) Lecture, four hours. Introduction to Aztecs through analysis of art in different media including sculpture, featherworks, polychrome pottery, manuscripts, and architecture. Readings from ethno-historic sources compiled in early colonial period by indigenous scribes and Spanish officials (friars, soldiers, chroniclers, and administrators). Study of Aztecs, their art, their civilization, and major topics discussed in existing scholarship, including calendar, foundational and creation myths, stories of migration, human sacrifice, rulership, warfare, gender, religion, philosophy, and art and architecture. Assessment of validity of scholarly assumptions about Aztecs, their art, and society in light of available sources. P/NP or letter grading.

**188. Special Courses in Chicana/o and Central American Studies. (4)** (Formerly numbered Chicana and Chicano Studies 188.) Seminar, three hours. Some sections may require prior coursework. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar



topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Chicana/o and Central American Studies. (2)** (Formerly numbered Chicana and Chicano Studies 190.) Seminar, two hours. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to present reports, discuss research methodologies, share findings, and provide feedback on each other's work. Culminates in public summit of Chicana/Chicano student research at which students expected to present polished position papers on their research. May be repeated for credit. P/NP grading.

**191. Variable Topics Research Seminars: Chicana/o and Central American Studies. (4)** (Formerly numbered Chicana and Chicano Studies 191.) Seminar, three hours. Limited to juniors/seniors. Research seminar organized around readings and engaged discussion of critical topic of interest in field. Exploration of issue, its theoretical implication for field, and practical implications for communities. Final research project required. May be repeated for credit. P/NP or letter grading.

**192A. Undergraduate Practicum in Chicana/o and Central American Studies. (4)** (Formerly numbered Chicana and Chicano Studies 192A.) Seminar, four hours. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students who assist in preparation of materials and/or development of innovative programs or courses of study under guidance of faculty members in small group settings or one-on-one setting. May not be applied toward departmental major or minor elective requirements. May be repeated for credit. P/NP or letter grading.

**193. Readings/Speaker Series Seminars: Chicana/o and Central American Studies. (1)** (Formerly numbered Chicana and Chicano Studies 193.) Seminar, one hour. Limited to undergraduate Colloquia Series students. Reading of journal articles associated with speaker topics to enliven postcolloquia discussions. May not be applied toward departmental major or minor elective requirements. May be repeated for credit. P/NP grading.

**194. Research Group Seminars: Chicana/o and Central American Studies. (2)** (Formerly numbered Chicana and Chicano Studies 194.) Seminar, one hour. Designed for undergraduate students who are part of research group. Discussion of current literature in field

or of research of faculty members or students. Use of specific research method on selected topic. May be repeated for credit with topic change. P/NP grading.

**195. Community Internships in Chicana/o and Central American Studies. (4)** (Formerly numbered Chicana and Chicano Studies 195.) Tutorial, two hours; field placement, eight hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195CE. Comparative Approaches to Community and Corporate Internships. (4)** (Formerly numbered Chicana and Chicano Studies M195CE.) (Same as African American Studies M195CE, American Indian Studies M195CE, Asian American Studies M195CE, and Gender Studies M195CE.) Tutorial, one hour; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Comparative study of race, gender, and indigeneity in relation to contemporary workplace dynamics. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. Individual contract with supervising faculty member required. P/NP or letter grading.

**196. Research Apprenticeship in Chicana/o and Central American Studies. (2 to 4)** (Formerly numbered Chicana and Chicano Studies 196.) Tutorial, three hours per week per unit. Requisite: course 10A or 10B. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. Participation in all aspects of research project, including library research, reading materials, and compilation of data, with scheduled meetings throughout term with faculty mentor for discussion of project. May not be applied toward departmental major or minor requirements. May be repeated under different contract; consult department. Individual contract required. P/NP grading.

**197. Individual Studies in Chicana/o and Central American Studies. (2 to 4)** (Formerly numbered Chicana and Chicano Studies 197.) Tutorial, four hours. Requisites: courses 10A, 10B. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**197C. Individual Capstone Studies. (2)** (Formerly numbered Chicana and Chicano Studies 197C.) Tutorial, one hour. Requisites: courses 10A and 10B, or 101. Limited to departmental junior/senior majors. Guided study led by faculty supervisor. Instructor meets with student to help design culminating capstone project so it conforms to departmental capstone project guidelines. Must be taken in conjunction with one upper-division departmental course. May not be repeated for credit. Individual contract required. Letter grading.

**198A-198B-198C. Honors Research in Chicana/o and Central American Studies. (2 each)** (Formerly numbered Chicana and Chicano Studies 198A-198B-198C.) Tutorial, one hour. Limited to junior/senior honors program students. May be repeated for credit. Individual contract required. Letter grading. **198A.** Thesis Conceptualization. Requisites: courses 10A, 10B, 101, and 89 or 189. Conceptualization and formulation of project in Fall Quarter under direct supervision of faculty member. Preliminary data collection on topic and production of proposal for thesis required. **198B.** Annotated Bibliography/Literature Review. Requisite: course 198A. Development of research skills in Winter Quarter to produce extensive annotated bibliography or literature review on thesis topic. Weekly meetings with faculty member to discuss research and develop outline, argument, and structure of thesis. **198C.** Writing and Revision. Requi-

site: course 198B. Writing, revision, and completion of departmental honors thesis in Spring Quarter to specification and satisfaction of thesis committee. Public presentation and defense of thesis required.

**199. Directed Research or Senior Project in Chicana/o and Central American Studies. (2 to 4)** (Formerly numbered Chicana and Chicano Studies 199.) Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Theoretical Paradigms in Chicana/o and Central American Studies. (4)** (Formerly numbered Chicana and Chicano Studies 200.) Seminar, three hours. Limited to graduate students. Examination of several approaches and important theoretical frameworks in field of Chicana and Chicano studies. Exploration of changes that have taken place around four key theoretical areas—coloniality, nationhood, inequality studies, and genders and sexualities. S/U or letter grading.

**201. Activist Scholarship and Intersectional Methodologies Seminar. (4)** (Formerly numbered Chicana and Chicano Studies 201.) Seminar, three hours. Limited to graduate students. Exploration of four critical epistemologies, or schools of thought, that employ intersectional methodologies as basis for social action research—Chicana/Chicano cultural studies, Chicana feminism, queer studies, and critical legal studies. S/U or letter grading.

**202. Qualitative Methods in Study of Chicanas/Chicanos and Latinas/Latinos. (4)** (Formerly numbered Chicana and Chicano Studies 202.) Seminar, three hours. Limited to graduate students. Methods course that takes students through entire empirical research cycle. Students required to collectively develop interesting research questions, conduct qualitative research, analyze original data, and write final papers that contextualize findings within existing social scientific literature. To answer research questions, students select from theoretical frameworks discussed in readings. S/U or letter grading.

**M206. Politics of Hood. (4)** (Formerly numbered Chicana and Chicano Studies M206.) (Same as Public Policy M231.) Seminar, three hours. Limited to graduate students. Investigation of root causes and consequences of critical problems impacting people who live in hood including poverty, incarceration, gentrification, welfare, public education, health disparities, and segregation, among other political issues. S/U or letter grading.

**207. Racial Geographies. (4)** (Formerly numbered Chicana and Chicano Studies 207.) Seminar, three hours. Interdisciplinary examination of spatial turn in social sciences and humanities. Drawing upon readings from geography, history, ethnic, and American studies, use of analytic of space to investigate questions of race in U.S. Focus on production of space, geographic approaches to racial formation, and anti-racist, place-based struggles. Study foregrounds intersections with Chicana and Chicano studies and models of relational racialization. S/U or letter grading.

**208. Research Design and Methods in Chicana/Chicano Studies. (4)** (Formerly numbered Chicana and Chicano Studies 208.) Seminar, four hours. Research design and methodologies in Xican@ studies grounded in perspectiva Chicana/Chican@ perspective. Study of knowledge production and scholarship in Chican@ studies, how it can be done, and how it can be evaluated. Includes critical comparison with Chicanology and identity studies, and associated biases, flaws, and fatal flaws. S/U or letter grading.

**209. Service Learning: Theory and Praxis. (4)** (Formerly numbered Chicana and Chicano Studies 209.) Seminar, three hours. Limited to graduate students. Examination of approaches and theories that underpin service learning and exploration of ways in which service learning can be utilized in variety of academic disciplines (second and foreign language instruction, education, ethnic studies, labor studies, women's studies, public health, literature, public art, political

science, etc.). Creation of research proposal for use of service learning in one course (real or hypothetical) in academic discipline of student's choice. S/U or letter grading.

**210. Queer of Color Genealogies. (4)** (Formerly numbered Chicana and Chicano Studies 210.) Seminar, three hours. Art of community-making by those multiply marginalized by categories of race, gender, class, citizenship, and gender nonconformity and disposed of normative forms of belonging. Tracking of genealogies of queer of color communities through alternative archives of desire, love, affect, memory, performance, and politics. Reading about queer of color theories and practices, with special focus on oral history, digital storytelling, and forms of social documentation methodologies. S/U or letter grading.

**211. Immobilizing Immigrants: Detention and Deportation in U.S. (4)** (Formerly numbered Chicana and Chicano Studies 211.) Seminar, three hours. History of detention and deportation policy in U.S. as it affects Mexicans and other Latinas/Latinos. Consolidation of this legal authority and its deployment across 20th century. S/U or letter grading.

**C212. Latina/Latino Families in U.S. (4)** (Formerly numbered Chicana and Chicano Studies C212.) Lecture, four hours; discussion, one hour (when scheduled). Study of how intersections of race, class, and gender help shape experiences of Latina/Latino families in U.S. society and how these intersections also help shape individual experiences within families. Examination of family, race, class, and gender as sociological concepts. Readings about family experiences of Mexican and Central American groups in U.S., with special emphasis on immigrants, and analysis of how race, class, and gender together play important roles in shaping these experiences. Discussion of roles of structure and space for agency in each context. Concurrently scheduled with course C107. Letter grading.

**M213. Asian-Latinos. (4)** (Formerly numbered Chicana and Chicano Studies M213.) (Same as Asian American Studies M213.) Seminar, three hours. Limited to graduate students. Examination of historical and contemporary populations of Asian-Latinos in Latin America and U.S. Review and critique of nascent literature on Asian-Latinos and analysis of experience of Asian-Latinos utilizing theoretical frameworks of *mestizaje*, critical mixed-race theory, and transnationalism. Coverage of often-overlooked Asian contributions to Latin American and Chicano/Latino culture and identity and exploration of unique experience of mixed-race Asian-Latinos. S/U or letter grading.

**CM214. Chicana Feminism. (4)** (Formerly numbered Chicana and Chicano Studies CM214.) (Same as Gender Studies CM232A.) Lecture, four hours. Enforced prerequisite: course 10A or Gender Studies 10. Examination of theories and practices of women who identify as Chicana feminist. Analysis of writings of Chicanas who do not identify as feminist but whose practices attend to gender inequities faced by Chicanas both within Chicana/Chicano community and dominant society. Attention to Anglo-European and Third World women. Concurrently scheduled with course CM110. S/U or letter grading.

**C215. Transnational Women's Organizing in Americas. (4)** (Formerly numbered Chicana and Chicano Studies C215.) Lecture, four hours. Feminist theories of transnational organizing. Examination of gender and race as central to processes of globalization and essential to economic and political struggles encompassed in transnational power relations. Exploration of how questions of race and gender influence global economic policies and impact local actors and their communities. In time when people, capital, cultures, and technologies cross national borders with growing frequency, discussion of process of accelerated globalization has been linked to feminization of labor and migration, environmental degradation, questions of diaspora, sexuality, and cultural displacement, as well as growing global militarization. Problems and issues created by globalization and cultural, social, and political responses envisioned by transnational organizing. Concurrently scheduled with course CM147. Letter grading.

**216. Product of Immigrant Illegality. (4)** (Formerly numbered Chicana and Chicano Studies 216.) Seminar, three hours. Limited to graduate students. Based mostly on U.S., exploration of dynamic field of illegality studies. Study of history of immigration policies and enforcement practices along with key empirical and theoretical contributions to understand how immigrant illegality is produced. S/U or letter grading.

**217. U.S. Central American Racial Constructs and Cultural Diversity. (4)** (Formerly numbered Chicana and Chicano Studies 217.) Seminar, three hours. Limited to graduate students. Exploration of indigenism, indigeneity, afro-indigeneity, Blackness, *mestizaje*, *mulattaje*, *ladinization* and other racial-gendered constructs in Central America by critically engaging scholarship, census data, and oral histories to understand Central American communities in U.S. Analysis on their origins and how these racial-gendered stratifications were naturalized through cultural practices. Engages cultural practices as strategies of survival for populations working against historical erasure especially enacted by nation-state. For example, why is Blackness erased in national narrative of El Salvador, why problematize Costa Rica's claim of racial equality, why and how do Garifuna communities assert their indigeneity while also engaging multiple practices and discourses of Blackness? Examination also of how these communities face genocide, ethnocide, femicide, and strategies of racial passing and resistance. S/U or letter grading.

**M218. Latinx Photoethnography. (4)** (Same as Anthropology M239R.) Seminar, three hours. Hands-on introduction to using photography as ethnographic field method. Introduction to basics of photography with review of key and relevant literature from fields of sociocultural anthropology, visual anthropology, and photographic theory. Exploration of technical, ethical, and aesthetic aspects of picture making and their relationship to anthropological field methods, participant observation, and issues of representation—especially among Latinx communities. Student-lead discussions of assigned readings and in-class hands-on learning. Quarter-long photoethnography project focused on Latinx issues in greater Los Angeles. S/U or letter grading.

**232. Aesthetics of Place in Chicana/Chicano Expressive Culture. (4)** (Formerly numbered Chicana and Chicano Studies 232.) Seminar, three hours. Examination of several place-based aesthetic traditions, including indigenous, *Santería*, diasporic, and *Aztlán* aesthetics, in Chicana/Chicano visual art, film, performance, and literature. Special focus on place as site of identity, history/memory, and creative production. S/U or letter grading.

**233. Community Cultural Development in Public Art: From Neighborhood to Global. (4)** (Formerly numbered Chicana and Chicano Studies 233.) Seminar, three hours; laboratory, one hour. Designed for graduate students. Artist approaches to transformations of local and global communities through aesthetic practices in visual arts, spoken word, visual performance, music, and dance that include participatory audience inclusion and foster civic dialogue and community advocacy and activism. Issues of cultural democracy based in cultural retention and affirmation. Case studies of artist projects in community cultural development provide contemporary examples of evolving field of work and basis for critical analysis. S/U or letter grading.

**234. New Social Media and Activist Art. (4)** (Formerly numbered Chicana and Chicano Studies 234.) Studio, four hours. Limited to graduate students. Hands-on learning and production experience as essential to full understanding of modern media. Promotion of pragmatic style of humanistic and social scientific scholarship that prepares students to think critically and productively about media form, content, and context while learning to effectively use social media. S/U or letter grading.

**C235. Bilingual Writing Workshop. (4)** (Formerly numbered Chicana and Chicano Studies C235.) Seminar, four hours. Limited to graduate students. Writing sample required; access to course web page mandatory; need not be bilingual to enroll. Technical instruction, analysis, and theoretical discussion of bilingual

creative expression through genre of short fiction. Bilingualism as both politics and aesthetics to be central theme. Discussion and analysis of Chicana/Chicano and Latina/Latino short story collections. Peer critique of weekly writing assignments. Emphasis on narrative techniques such as characterization, plot, conflict, setting, point of view, and dialogue, and magical realism as prevailing Chicanesque/Latinesque style. Some attention to process of manuscript preparation, public reading, and publication. Concurrently scheduled with course CM135. Letter grading.

**236. Latinx Noir and City at Night. (4)** (Formerly numbered Chicana and Chicano Studies 236.) Seminar, three hours. Noir literary and cinematic genre is characterized by gritty realism, social disorder, violence, and nocturnal meanderings in darkest, meanest streets of urban metropolis. Examination of Latinx representations of Los Angeles in mainstream and Chicana/Latinx literature and film. S/U or letter grading.

**M237. Hemispheric and Transnational Approaches to Contemporary Art in Americas. (4)** (Formerly numbered Chicana and Chicano Studies M237.) (Same as Art History M243.) Seminar, three hours. Maps current state and future of research, teaching, and museum practice in contemporary art of Americas, with focus on hemispheric and transnational approaches. Study of influential theoretical texts from literary studies and critical examination of recent publications in arts, including museum exhibition catalog, as hemispheric and transnational approach to contemporary Latinx and Latin American arts is posited. Focus intersects with other related topics, including art post-1968; comparative indigenities in Americas; art, globalism, and biennials; decolonial turn; transnational feminisms; and New American counter narratives. S/U or letter grading.

**238. New Directions in Chicana and Latinx Art. (4)** (Formerly numbered Chicana and Chicano Studies 238.) Seminar, three hours. Focus on current state and future of research, teaching, and museum practice in Chicana and Latinx art history. Examination of various topics, including decolonial methodologies; national versus global perspectives on Latinx art; indigeneity and Chicana art; politics and publics of prints and graphics; public murals and monuments; race and place in Los Angeles; queer and feminist approaches to Chicana and Latinx art; and collecting and display of Chicana art by museums, galleries, and private collectors. Particular emphasis on decolonial, feminist, critical race, and poststructuralist approaches. Students prepare weekly readings for discussion, and complete final presentation and research project. Parameters of project to be determined in consultation with professor. Examples include original research paper, teaching portfolio, comprehensive historiographic review, or creative project. S/U or letter grading.

**239. Digital Methods for Research and Presentations. (4)** (Formerly numbered Chicana and Chicano Studies 239.) Laboratory, four hours. Students learn how to think about one's own research in visual way, and how to develop digital skills to produce images and videos for more professional and compelling research presentations and job talks that do not infringe upon copyrighted materials. Students learn how to locate high-resolution images, and how to use Photoshop to manipulate files and create original illustrations. Students learn how to use Prezi as oral presentation software and archiving method for gathering and organizing visual materials on their research. Each student receives personalized guidance based on specificity of their research, for example, mapping software, or video editing for oral history projects, or subtitling/translating for documentary videos. Students learn how to use available applications such as iMovie or QuickTime to produce short videos that can be incorporated into their presentations. For their final project, students are required to present mock conference talk using their original manipulated images and short videos. S/U or letter grading.

**240. U.S. Central Americans Making Art and Memory. (4)** (Formerly numbered Chicana and Chicano Studies 240.) Seminar, three hours. Limited to graduate students. Memory is trope through which U.S. Central American writers, performance, visual, media,

and public artists and activists communicate across social, national, and phenomenological borders. Through contemporary theories on memory and narrativizing, introduction to U.S. Central American writers, artists, cultural activists, and historical figures. Exploration of issues including civil war, postwar, race, class, sex, gender, globalization, immigration, and identity formations. Students have option to create art, media projects, and essays that interpret readings as these relate to their lives vis-à-vis U.S. Central American cultural production. S/U or letter grading.

**M247. Chicano Literature. (4)** (Formerly numbered Chicana and Chicano Studies M247.) (Same as Spanish M247.) Lecture, three hours. Study of major movements and authors of Mexican American literature. S/U or letter grading.

**C251. Chicana and Latin American Women's Narrative. (4)** (Formerly numbered Chicana and Chicano Studies C251.) Lecture, four hours. Preparation: reading knowledge of Spanish (level 4). Analyses, comparisons, and discussion of narrative literary production of U.S. Chicana writers and their Latin American counterparts in English and Spanish, with particular focus on how each group deals with gender, ethnic, and class issues. Concurrently scheduled with course C141. Letter grading.

**252. Cultural Representations in Americas. (4)** (Formerly numbered Chicana and Chicano Studies 252.) Seminar, three hours. Analysis of Latina/Latino and Latin American fictional and nonfictional narratives and films, with emphasis on gender issues, diasporas, and global transformation. Use of aesthetic and formal analytical perspectives and several conceptual frameworks—cultural studies, postcolonial studies, neoliberalism, intersectionality, and feminist theories. Study of these cultural productions as expression of intersectionalities and differences among Latina/Latino and Latin American cultural workers, as well as among diverse populations and changing experiences their works refer to. S/U or letter grading.

**253. Tenth Muses of Chicana Theory. (4)** (Formerly numbered Chicana and Chicano Studies 253.) Seminar, three hours. Chicana lesbian feminist theory in its multiple and historical manifestations, beginning in 17th century with early proto-feminist work of Sor Juana Inés de la Cruz, Mexican nun/scholar/poet known world over as first feminist of Americas. Exploration of Sor Juana's feminist legacy in 20th-century Chicana lesbian and Chicana feminist theorists and scholars, such as Gloria Anzaldúa, Cherrie Moraga, Emma Pérez, Chela Sandoval, Norma Alarcón, and Alicia Arrizón. Discussion of foundational theoretical concepts such as Anzaldúa's foundational concepts of *mundo zurdo*, *nepantla*, *mestiza* consciousness, and *conocimiento*; Pérez's *sitio y lengua* and decolonial imaginary; Sandoval's methodology of oppressed, differential consciousness, and hermeneutics of love; and Arrizón's postcolonial queer *mestizaje*. How to apply several of these theories in decolonization of one revered cultural icon, *la Virgen de Guadalupe*. S/U or letter grading.

**254. Los Angeles: History, Space, and Culture. (4)** (Formerly numbered Chicana and Chicano Studies 254.) Seminar, three hours. Exploration of significance of Los Angeles as birthplace of Chicana/Chicano identity and historical development of Mexican American culture and community in Southern California. Historiography of Latino Los Angeles from Spanish conquest to present, with emphasis on labor, immigration, art culture, and politics. Survey of current literature on socioeconomic condition of Mexican Americans in Los Angeles and burgeoning culture and politics of Latino Los Angeles at outset of 21st century. S/U or letter grading.

**255. Mass Media Research Methods. (4)** (Formerly numbered Chicana and Chicano Studies 255.) Seminar, three hours. Limited to graduate students. Survey of range of qualitative and quantitative communication methods and findings regarding Chicana/Chicano and Latina/Latino topics for all media types in both English and Spanish. Critical evaluation of research findings across this expansive field and design of complex research problems. S/U or letter grading.

**C256. Understanding Whiteness in American History and Culture. (4)** (Formerly numbered Chicana and Chicano Studies C256.) Lecture, three hours; discussion, one hour (when scheduled). Designed for graduate students. History, construction, and representation of whiteness in American society. Readings and discussions trace evolution of white identity and explore its significance to historical construction of race class in American history. Concurrently scheduled with course CM182. Letter grading.

**M257. Chicana/o and Intersectional Marxisms. (4)** (Formerly numbered Chicana and Chicano Studies M257.) (Same as Public Policy M232.) Seminar, three hours. Examination of relationship between Marxism, intersectionality, and early-Chicana/o Marxist influenced intellectual thought. Focus on key debates and texts on connections between race, gender, sexuality, and capitalism. Review of key articles and books examining Chicana/o identity, labor, family, sexuality, and activism through Marxist theoretical framework. S/U or letter grading.

**258. Laughter, Political Humor, and Social Control. (4)** (Formerly numbered Chicana and Chicano Studies 258.) Seminar, three hours. Limited to graduate students. Investigation of power of political humor, one social practice that constructs discriminatory hierarchies in interpersonal settings and mass media. With goal of developing set of principled methods to investigate its manifestations, reading of outstanding humanistic contributions across history of its social function and power, development of classification of types and settings of political humor, and critical evaluation of recent social scientific models of its nature. S/U or letter grading.

**259. Critical Discourse Analytic Methods. (4)** (Formerly numbered Chicana and Chicano Studies 259.) Seminar, three hours. Limited to departmental graduate students. Two critical discourse analytic (CDA) methods taught to document language of public figures. Student teams employ one method (conceptual metaphor CDA or discourse historical approach) to analyze actual public official's own discourse surrounding one controversial issue. Empirical study of discourses that are based on independently developed research enterprises can be valuable tool for variety of graduate student research. S/U or letter grading.

**C274. Language Politics and Policies in U.S.: Comparative History. (4)** (Formerly numbered Chicana and Chicano Studies C274.) Lecture, four hours. Historical overview of national and institutional language policies, especially schooling, in U.S. as context to understanding social, legal, and political constraints on bilingualism. Definitions and development of language policy and planning, history of general and educational language policies in U.S., demographic profile of language diversity, and current language and educational policy issues in U.S. Comparisons with selected international cases. Concurrently scheduled with course C179. S/U or letter grading.

**C276. Health in Chicano/Latino Population. (4)** (Formerly numbered Chicana and Chicano Studies C276.) Lecture, four hours; discussion, one hour. Designed for graduate students. Examination of Chicano/Latino health status through life expectancy, causes of death, reportable diseases, services utilization, provider supply, and risk behaviors within demographic/immigration changes. Binational review of health effects in U.S. and Mexico. Concurrently scheduled with course CM106. Letter grading.

**C277. Latino Social Policy. (4)** (Formerly numbered Chicana and Chicano Studies C277.) Lecture, three hours; discussion, one hour (when scheduled). Examination of social welfare of Latinos (Chicanos, Puerto Ricans, and Cubans) in U.S. through assessment and critical analysis of social policy issues affecting them. Survey of social, economic, cultural, and political circumstances affecting ability of Latinos to access public benefits and human services. Concurrently scheduled with course CM177. Letter grading.

**M278. Immigration Policy and Activism. (4)** (Same as Public Policy M230.) Seminar, three hours. Highlighting roles of race, gender, sexuality, and citizenship

status, exploration of how immigrant rights activists organize for legalization and against detention, deportation, and border militarization. Letter grading.

**279. Globalization and Transnationalism. (4)** (Formerly numbered Chicana and Chicano Studies 279.) Seminar, three hours. Interdisciplinary seminar that integrates political-economical, historical-sociological, and anthropological-cultural perspectives to help students develop critical political-economical analysis of interplay between globalization (of flows of people, material goods, information, and political-cultural influences) and localized transnational dynamics that together are giving meaning and constructing new social identities and strategies for struggle throughout world. S/U or letter grading.

**280. Urban Social Inequality. (4)** (Formerly numbered Chicana and Chicano Studies 280.) Seminar, three hours. Examination of several key social and urban inequalities in U.S. Survey of three key contemporary issues of inequality primarily from sociology and urban planning/studies: income distribution (poverty), work and employment (labor), and neighborhoods (space/geography). Through wide range of methods, approaches, and theoretical frameworks examined, exposure to key research on inequality. S/U or letter grading.

**281. Central American Migration and Integration. (4)** (Formerly numbered Chicana and Chicano Studies 281.) Seminar, three hours. Through empirical research cycle and informed with relevant theoretical frameworks, students develop research questions based on migration and integration experiences of Central American immigrants in greater Los Angeles area. Students conduct qualitative research, analyze original data, and write final papers that contextualize findings within existing social scientific literature. S/U or letter grading.

**282. Chicana/Chicano Legal History. (4)** (Formerly numbered Chicana and Chicano Studies 282.) Seminar, three hours. Legal history of Chicanas/Chicanos in U.S. from mid-19th century to present, with emphasis on critical race theory. Examination of landmark legislation and key appellate decisions that have impacted Chicano/Latino community. Topics include critical race theory, Treaty of Guadalupe-Hidalgo, legal construction of Mexican American racial identity, historic educational segregation, contemporary educational issues, jury rights, Chicano movement, and undocumented immigration. S/U or letter grading.

**M289. Studies in Chicana/Chicano Literature. (4)** (Formerly numbered Chicana and Chicano Studies M289.) (Same as English M261.) Seminar, three hours. Intensive research and study of major themes, authors, and issues in Chicana/Chicano literature and culture. Examination of political, aesthetic, economic, and cultural context that emerges in Chicana/Chicano discourse; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**291. Variable Topics Research Seminars: Chicana/o and Central American Studies. (4)** (Formerly numbered Chicana and Chicano Studies 291.) Seminar, three hours. Limited to graduate students. Research seminar organized around readings and engaged discussion of critical topic of interest in field. Exploration of issue, its theoretical implication for field, and practical implications for communities. Topics vary according to participating faculty members. Final research project required. May be repeated for credit with consent of director of graduate studies. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** (Formerly numbered Chicana and Chicano Studies 375.) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Learner-Centered Teaching in Chicana/o and Central American Studies. (4)** (Formerly numbered Chicana and Chicano Studies 495.) Seminar, four hours. Designed for graduate students and required of all new department teaching apprentices. Interactive forum for discussing learner-centered teaching in Chi-

cana/Chicano studies. Exploration of diverse classroom strategies and pedagogical techniques specific to interdisciplinary field. Topics include preparing for discussion sections, promoting discussion among students, using class websites, office hours, grading, and campus resources. May be repeated once for credit. S/U grading.

**595. Research and Preparation for MA Thesis. (4 to 12)** (Formerly numbered Chicana and Chicano Studies 595.) Tutorial, to be arranged. Limited to departmental graduate students who have completed all MA coursework requirements. Research for and preparation of MA thesis under direction of thesis committee chair. May not be applied toward MA degree requirements. May be repeated for maximum of 12 units. S/U grading.

**596. Directed Individual Study or Research. (4 to 12)** (Formerly numbered Chicana and Chicano Studies 596.) Tutorial, to be arranged. Directed individual research and study in area related to Chicana/Chicano studies or subjects not offered as regular courses, arranged individually by student and instructor. May be repeated for maximum of 12 units. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 12)** (Formerly numbered Chicana and Chicano Studies 597.) Tutorial, to be arranged. Limited to departmental graduate students. Reading and preparation for PhD qualifying examinations. Mandatory and supplemental reading lists prepared by student advisory committees. May be repeated for maximum of 12 units. S/U grading.

**599. Research for PhD Dissertation. (4 to 12)** (Formerly numbered Chicana and Chicano Studies 599.) Tutorial, to be arranged. Limited to PhD students who have passed qualifying examinations. Research for and preparation of PhD dissertation under direction of dissertation committee chair. May not be applied toward PhD degree requirements. May be repeated for maximum of 8 units. S/U grading.

## CIVIL AND ENVIRONMENTAL ENGINEERING

Henry Samueli School of Engineering and Applied Science

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Civil and Environmental Engineering

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## Faculty Roster

### Professors

Yousef Bozorgnia, PhD, PE  
Scott J. Brandenberg, PhD, PE  
Mekonnen Gebremichael, PhD  
Eric M.V. Hoek, PhD  
Jennifer A. Jay, PhD  
Jiann-Wen Woody Ju, PhD, PE  
Dennis P. Lettenmaier, PhD, NAE  
Enrique A. López-Droguett, PhD  
Shaily Mahendra, PhD  
Steven A. Margulis, PhD

Ali Mosleh, PhD, NAE (*Evalyn Knight Professor of Engineering*)

Sriram Narasimhan, PhD

Gaurav N. Sant, PhD (*Pritzker Professor of Sustainability*)

Michael K. Stenstrom, PhD, PE

Jonathan P. Stewart, PhD, PE

Ertugrul Taciroglu, PhD

John W. Wallace, PhD

Jian Zhang, PhD

### Professors Emeriti

Stanley B. Dong, PhD, PE

Lewis P. Felton, PhD

Michael E. Fourny, PhD, PE

Richard L. Perrine, PhD

Moshe F. Rubinstein, PhD

Keith D. Stolzenbach, PhD, PE

Mladen Vucetic, PhD

William W.-G. Yeh, PhD, NAE (*Richard G. Newman AECOM Endowed Professor Emeritus of Civil Engineering*)

### Associate Professors

Mathieu Bauchy, PhD

Henry V. Burton, PhD, SE (*Presidential Endowed Professor of Structural Engineering*)

Timu W. Gallien, PhD

David Jassby, PhD

Jiaqi Ma, PhD

### Assistant Professors

Tierra S. Bills, PhD

Alvar Escrivá-Bou, PhD

Sanjay K. Mohanty, PhD

Regan F. Patterson, PhD

### Adjunct Professor

Thomas A. Sabol, PhD, SE

### Adjunct Associate Professors

Donald R. Kendall, PhD, PE

Issam Najm, PhD, PE

## Overview

The Department of Civil and Environmental Engineering programs at UCLA include civil engineering materials, earthquake engineering, environmental engineering, geotechnical engineering, hydrology and water resources engineering, structural engineering, and structural mechanics.

## Undergraduate Study

The undergraduate curriculum leads to a BS in Civil Engineering, a broad-based education in environmental engineering, geotechnical engineering, hydrology and water resources engineering, and structural engineering and mechanics. This program is an excellent foundation for entry into professional practice in civil engineering or for more advanced study. The department also offers the undergraduate Environmental Engineering minor.

## Graduate Study

At the graduate level, MS and PhD degree programs are offered in the areas of civil engineering materials, environmental engineering, geo-

technical engineering, hydrology and water resources engineering, and structures (including structural/earthquake engineering and structural mechanics). In these areas, research is being done on a variety of problems ranging from basic physics and mechanics problems to critical problems in earthquake engineering and in the development of new technologies for pollution control and water distribution and treatment.

## Undergraduate Major

### Civil Engineering BS

The civil engineering program is accredited by the Engineering Accreditation Commission of ABET.

### Capstone Major

The Civil Engineering major is a designated capstone major. In each of the major field design courses, students work individually and in groups to complete design projects. To do so, they draw on their prior coursework, research the needed materials and possible approaches to creating their device or system, and come up with creative solutions. This process enables them to integrate many of the principles they have learned previously and apply them to real systems. In completing their projects, students are also expected to demonstrate effective oral and written communication skills, as well as their ability to work productively with others as part of a team.

### Learning Outcomes

The Civil Engineering major has the following learning outcomes:

- Understanding of, and ability to apply, basic mathematical and scientific concepts that underlie the field
- Ability to contribute meaningfully to design projects
- Critical thinking skills, problem-solving abilities, and familiarity with computational procedures essential to the field
- Ability to work productively as a member of a team
- Effective oral and written communication skills

### Requirements

#### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A, 20B, 20L; Civil and Environmental Engineering 1, M20 (or Computer Science 31); Mathematics 31A, 31B, 32A, 32B, 33A, 33B (or Mechanical and Aerospace Engineering 82); Physics 1A, 1B, 1C, 4AL; one natural science course selected from Civil and Environmental Engineering 58XP, Earth, Planetary, and Space Sciences 3, 15, 16, 17, 20, Environment 12, Life Sciences 7A, Microbiology, Immunology, and Molecular Genetics 5, 6, or Neuroscience 10.

#### The Major

*Required:* Chemical Engineering 102A or Mechanical and Aerospace Engineering 105A,



Civil and Environmental Engineering 91 (or Mechanical and Aerospace Engineering 101), 102, 103, C104 (or Materials Science and Engineering 104), 108, 110 (or C111), 120, 135A, 150, 153, 190, Mechanical and Aerospace Engineering 103; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); and at least eight major field elective courses (32 units) from the lists below with at least two design courses, one of which must be a capstone design course and two of which must be laboratory courses. The laboratory courses must be taken from two distinct areas (both 120L and 129L may be taken to satisfy the two-laboratory requirement). Courses applied toward the required course requirement may not also be applied toward the major field elective requirement.

**Civil Engineering Materials:** Civil and Environmental Engineering C104, C105, C106, C111, C182; laboratory course: 108L.

**Environmental Engineering:** Civil and Environmental Engineering 154, 155, C159, C164, M165, M166; laboratory courses: 156A, 156B; capstone design courses: 157B, 157C.

**Geotechnical Engineering:** Civil and Environmental Engineering 125; laboratory courses: 120L, 129L; design courses: 121, 123 (capstone).

**Hydrology and Water Resources Engineering:** Civil and Environmental Engineering 157A, C158; laboratory course: 129L, 157L; design courses: 151, 152 (capstone).

**Structural Engineering and Mechanics:** Civil and Environmental Engineering 125, 130, 135B, M135C, C137, 142; laboratory courses: 108L, 135L, 140L; design courses: 141, 143, 144 (capstone), 147 (capstone), 148.

**Transportation Engineering:** Civil and Environmental Engineering 180, C181, C182, C185, C186.

**Additional Elective Options:** Courses selected from an approved list available in the [Office of Academic and Student Affairs](#).

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Undergraduate Minor Environmental Engineering Minor

The Environmental Engineering minor is designed for students who wish to augment their major program of study with an exposure to engineering methods applied to key environmental problems facing modern society in developed and developing countries. The minor also offers students a brief experience and understanding of the roles that environmental engineering methods play in solving environmental problems.

### Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average or

better) and file a petition in the [Office of Academic and Student Affairs](#), 6426 Boelter Hall.

### The Minor

*Required Lower-Division Course (4 units):* Mathematics 3C or 32A.

*Required Upper-Division Courses (24 units minimum):* Civil and Environmental Engineering 153 and five courses from Civil and Environmental Engineering 110, 150, 151, 152, 154, 155, 156A, 156B, 157A, 157B, 157C, 157L, C159, C164, M165, M166, Chemical Engineering 102A, Mechanical and Aerospace Engineering 103, 105A.

### Policies

Credit for Chemical Engineering 102A and Mechanical and Aerospace Engineering 105A is not allowed.

A minimum of 20 upper-division units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units applied toward the minor must be taken in residence at UCLA. Transfer credit for any of the above is subject to departmental approval; consult with the undergraduate counselors before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade, and students must have a minimum grade of C (2.0) in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Civil Engineering MS, PhD

The Master of Science degree has the following areas of study: civil engineering materials, environmental engineering, geotechnical engineering, hydrology and water resources engineering, structural/earthquake engineering, structural mechanics, structures and civil engineering materials, transportation engineering.

The Doctor of Philosophy degree has the following major fields or subdisciplines: civil engineering materials, environmental engineering, geotechnical engineering, hydrology and water resources engineering, structural/earthquake engineering, structural mechanics, and transportation engineering.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Civil and Environmental Engineering

### Lower-Division Courses

**1. Civil Engineering and Infrastructure. (2)** Lecture, two hours; outside study, four hours. Examples of infrastructure, its importance, and manner by which it is designed and constructed. Role of civil engineers in infrastructure development and preservation. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Introduction to Computer Programming with MATLAB. (4)** (Same as Mechanical and Aerospace Engineering M20.) Lecture, two hours; discussion, two hours; laboratory, two hours; outside study, six hours. Requisite: Mathematics 33A. Fundamentals of computer programming taught in context of MATLAB computing environment. Basic data types and control structures. Input/output. Functions. Data visualization. MATLAB-based data structures. Development of efficient codes. Introduction to object-oriented programming. Examples and exercises from engineering, mathematics, and physical sciences. Letter grading.

**58XP. Climate Change, Water Quality, and Ecosystem Functioning. (5)** (Formerly numbered 58SL.) Lecture, four hours; service learning, two hours; outside study, nine hours. Science related to climate change, water quality, and ecosystem health. Topics include carbon and nutrient cycling, hydrologic cycle, ecosystem structure and services, biodiversity, basic aquatic chemistry, and impacts of climate change on ecosystem functioning and water quality. Participation in series of science education projects to elementary or middle school audience. Letter grading.

**91. Statics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Mathematics 31A, 31B, Physics 1A. Newtonian mechanics, vector representation, and resultant forces and moments. Free-body diagrams and equilibrium, internal loads and equilibrium in trusses, frames, and beams. Planar and nonplanar systems, distributed forces, determinate and indeterminate force systems, shear and moment diagrams, and axial force diagrams. Letter grading.

**97. Variable Topics in Civil and Environmental Engineering. (2 to 4)** Seminar, two hours. Current topics and research methods in civil and environmental engineering. May be repeated for credit. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**102. Dynamics of Particles and Bodies. (2)** Lecture, two hours; discussion, two hours; outside study, two hours. Requisites: course 91 or Mechanical and Aerospace Engineering 101, Physics 1B. Introduction to fundamentals of dynamics of single particles, system of particles, and rigid bodies. Topics include kinematics and kinetics of particles, work and energy, impulse and momentum, multiparticle systems, kinematics and kinetics of rigid bodies in two- and three-dimensional motions. Letter grading.

**103. Applied Numerical Computing and Modeling in Civil and Environmental Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course M20 (or Computer Science 31), Mathematics 33B or Mechanical and Aerospace Engineering 82 (either may be taken concurrently). Introduction to numerical computing with specific applications in civil and environmental engineering. Topics



include error and computer arithmetic, root finding, curve fitting, numerical integration and differentiation, solution of systems of linear and nonlinear equations, numerical solution of ordinary and partial differential equations. Letter grading.

**C104. Structure, Processing, and Properties of Civil Engineering Materials. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 91 or Mechanical and Aerospace Engineering 101, Chemistry 20A, 20B, Mathematics 31A, 31B, 32B, Physics 1A, 1B, 1C. Corequisite: course 108. Discussion of aspects of cement and concrete materials, including manufacture of cement and production of concrete. Aspects of cement composition and basic chemical reactions, microstructure, properties of plastic and hardened concrete, chemical admixtures, and quality control and acceptance testing. Development and testing of fundamentals for complete understanding of overall response of all civil engineering materials. By end of term, successful utilization of fundamental materials science concepts to understand, explain, analyze, and describe engineering performance of civil engineering materials. Concurrently scheduled with course C204. Letter grading.

**C105. Structure and Properties of Amorphous Civil Engineering Materials. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 91 or Mechanical and Aerospace Engineering 101, Chemistry 20A, 20B, Mathematics 31A, 31B, 32B, Physics 1A, 1B, 1C. Corequisite: course 108. Nature and properties of amorphous civil engineering materials in fields of infrastructure and technology. Special attention to composition-structure-properties relationships and design and selection with respect to targeted civil engineering applications. Concurrently scheduled with course C205. Letter grading.

**C106. Modeling and Simulation of Civil Engineering Materials. (4)** Lecture, four hours; outside study, eight hours. Requisites: Chemistry and Biochemistry 20A, 20B, Mathematics 31A, 31B, 32B, Physics 1A, 1B, 1C. Provides fundamental understanding of modeling and numerical simulations for civil engineering materials. Largely focused on practical examples and applications. By course end, students are expected to be able to independently run simulations at scale relevant to targeted problems. Concurrently scheduled with course C206. Letter grading.

**108. Introduction to Mechanics of Deformable Solids. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 91 or Mechanical and Aerospace Engineering 101, Mathematics 32B, Physics 1A. Review of equilibrium principles; forces and moments transmitted by slender members. Concepts of stress and strain. Stress-strain relations with focus on linear elasticity. Transformation of stress and strain. Deformations and stresses caused by tension, compression, bending, shear, and torsion of slender members. Structural applications to trusses, beams, shafts, and columns. Introduction to virtual work principle. Letter grading.

**108L. Experimental Structural Mechanics. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Requisite or corequisite: course 108. Lectures and laboratory experiments in various structural mechanics testing of metals (steel, aluminum, brass), high-strength plastics, and concrete (cylinders, beams). Direct tension. Direct compression. Ultrasonic nondestructive evaluation. Elastic buckling of columns. Fracture mechanics testing and fracture toughness. Splitting tension and flexural tension. Elastic, plastic, and fracture behavior. ASTM and RILEM. Cyclic loading. Microstructures of concrete. Size effects. Letter grading.

**110. Introduction to Probability and Statistics for Engineers. (4)** Lecture, four hours; discussion, one hour (when scheduled); outside study, seven hours. Requisites: Mathematics 32A, 33A. Recommended: course M20. Introduction to fundamental concepts and applications of probability and statistics in civil engineering, with focus on how these concepts are used in experimental design and sampling, data analysis, risk and reliability analysis, and project design under uncertainty. Topics include basic probability concepts, random variables and analytical probability

distributions, functions of random variables, estimating parameters from observational data, regression, hypothesis testing, and Bayesian concepts. Letter grading.

**C111. Machine Learning and Artificial Intelligence for Civil Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course M20, Chemistry 20A, 20B, Mathematics 31A, 31B, 32B, Physics 1A, 1B, 1C. Theoretical and practical introduction to artificial intelligence and machine learning for civil engineering problems. Focus on practice and problem-solving skills. By course end, students are expected to be able to independently run machine learning analysis. Concurrently scheduled with course C211. Letter grading.

**120. Principles of Soil Mechanics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 108. Soil as foundation for structures and as material of construction. Soil formation, classification, physical and mechanical properties, soil compaction, earth pressures, consolidation, and shear strength. Letter grading.

**120L. Soil Mechanics Laboratory. (4)** (Formerly numbered 128L.) Lecture, one hour; laboratory, six hours; outside study, five hours. Requisite or corequisite: course 120. Laboratory experiments to be performed by students to obtain soil parameters required for assigned design problems. Soil classification, grain size distribution, Atterberg limits, specific gravity, compaction, expansion index, consolidation, shear strength determination. Design problems, laboratory report writing. Letter grading.

**121. Design of Foundations and Earth Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 120. Design methods for foundations and earth structures. Site investigation, including evaluation of soil properties for design. Design of footings and piles, including stability and settlement calculations. Design of slopes and earth retaining structures. Letter grading.

**123. Advanced Geotechnical Design. (4)** (Formerly numbered C123.) Lecture, two hours; discussion, two hours; active learning, two hours; outside study, six hours. Requisite: course 121. Slope stability analysis, including limit equilibrium procedures, finite element method, seepage analysis, and advanced topics such as rapid drawdown, construction of embankments on soft soil, and seismic slope stability. Lateral earth retention systems including gravity walls and excavation support systems. Capstone design project involving appropriate engineering standards and realistic constraints. Letter grading.

**125. Fundamentals of Earthquake Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 135A. Overview of engineering seismology, including plate tectonics, faults, wave propagation, and earthquake strong ground motion. Development and selection of design ground motions using both probabilistic seismic hazard analysis and code-based methods. Overview of seismic design regulation and California PE examination's seismic component. Code-based seismic design for new buildings using current International Building Code seismic code provisions. Overview of seismic design of bridges, dams, and other non-building structures. Letter grading.

**C128. Geohazards and Infrastructure Resilience. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 120. Geologic characterization of soil and rock units. Relationships developed between landforms, active, past, and ancient geologic processes, ground and surface water, and properties of soil and rock. Geohazards associated with climate change, wildfires, landslides, volcanism, and earthquakes. Effects of geologic processes on civil infrastructure and risk assessment procedures to promote resilience. Concurrently scheduled with course C228. Letter grading.

**129L. Engineering Geomatics. (4)** Lecture, two hours; laboratory, four hours; outside study, six hours. Collection, processing, and analysis of geospatial data. Ellipsoid and geoid models of shape of Earth. Sea level, height, and geopotential surfaces. Elements and usage of topographic data and maps. Advanced global positioning systems (GPS) for high-precision

mapping. Advanced laser-based light detection and ranging (LIDAR) mapping. Quantitative terrain analysis and change detection. Hydrogeomatics: seafloor mapping. Letter grading.

**130. Elementary Structural Mechanics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 108. Analysis of stress and strain, phenomenological material behavior, extension, bending, and transverse shear stresses in beams with general cross-sections, shear center, deflection of beams, torsion of beams, warping, column instability and failure. Letter grading.

**135A. Elementary Structural Analysis. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: courses M20 (or Computer Science 31), 108. Introduction to structural analysis; classification of structural elements; analysis of statically determinate trusses, beams, and frames; deflections in elementary structures; virtual work; analysis of indeterminate structures using force method; introduction to displacement method and energy concepts. Letter grading.

**135B. Intermediate Structural Analysis. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 135A. Analysis of truss and frame structures using matrix methods; matrix force methods; matrix displacement method; analysis concepts based on theorem of virtual work; moment distribution. Letter grading.

**M135C. Introduction to Finite Element Methods. (4)** (Same as Mechanical and Aerospace Engineering M168.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 130 or Mechanical and Aerospace Engineering 156A or 166A. Introduction to basic concepts of finite element methods (FEM) and applications to structural and solid mechanics and heat transfer. Direct matrix structural analysis; weighted residual, least squares, and Ritz approximation methods; shape functions; convergence properties; isoparametric formulation of multidimensional heat flow and elasticity; numerical integration. Practical use of FEM software; geometric and analytical modeling; preprocessing and postprocessing techniques; term projects with computers. Letter grading.

**135L. Structural Design and Testing Laboratory. (4)** Lecture, two hours; laboratory, five hours; outside study, five hours. Requisites: courses M20, 135A. Limited enrollment. Computer-aided optimum design, construction, instrumentation, and test of small-scale model structure. Use of computer-based data acquisition and interpretation systems for comparison of experimental and theoretically predicted behavior. Letter grading.

**C137. Elementary Structural Dynamics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 135B. Basic structural dynamics course for civil engineering students. Elastic free and forced vibrations of single degree of freedom systems, introduction to response history and response spectrum analysis approaches for single and multidegree of freedom systems. Axial, bending, and torsional vibration of beams. Concurrently scheduled with course C239. Letter grading.

**137L. Structural Dynamics Laboratory. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Requisite or corequisite: course 137. Calibration of instrumentation for dynamic measurements. Determination of natural frequencies and damping factors from free vibrations. Determination of natural frequencies, mode shapes, and damping factors from forced vibrations. Dynamic similitude. Letter grading.

**140L. Structural Components and Systems Testing Laboratory. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Enforced requisite: course 142. Comparison of experimental results with analytical results and code requirements to assess accuracies and limitations of calculation procedures used in structural design. Tests include quasi-static tests of structural elements (beams, columns) and systems (slab-column, beam-column) and dynamic tests of simple building systems. Quasi-static tests focus on assessment of element or subsystem stiffness, strength, and deformation capacity, whereas dynamic tests focus on assessment of periods, mode

shapes, and damping. Development of communication skills through preparation of laboratory reports and oral presentations. Letter grading.

**141. Steel Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 135A. Introduction to building codes. Fundamentals of load and resistance factor design of steel elements. Design of tension and compression members. Design of beams and beam columns. Simple connection design. Introduction to computer modeling methods and design process. Letter grading.

**142. Design of Reinforced Concrete Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 135A. Beams, columns, and slabs in reinforced concrete structures. Properties of reinforced concrete materials. Design of beams and slabs for flexure, shear, anchorage of reinforcement, and deflection. Design of columns for axial force, bending, and shear. Ultimate strength design methods. Letter grading.

**142L. Reinforced Concrete Structural Laboratory. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Requisites: courses 135B, 142. Limited enrollment. Design considerations used for reinforced concrete beams, columns, slabs, and joints evaluated using analysis and experiments. Links between theory, building codes, and experimental results. Students demonstrate accuracies and limitations of calculation procedures used in design of reinforced concrete structures. Development of skills for written and oral presentations. Letter grading.

**143. Design of Prestressed Concrete Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 135A, 142. Equivalent loads and allowable flexural stresses in determinate and indeterminate systems. Flexural and shear strength design, including secondary effects in indeterminate systems. Design of indeterminate post-tensioned beam using both hand calculations and commercially available computer program. Discussion of external post-tensioning, one- and two-way slab systems. Letter grading.

**144. Structural Systems Design. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 141 or 142, and 190. Design course for civil engineering students, with focus on design and performance of complete building structural systems. International Building Code (IBC) and ASCE 7 dead, live, wind, and earthquake loads. Design of reinforced concrete and structural steel buildings. Computer modeling, analysis, and performance assessment of buildings. Letter grading.

**147. Design and Construction of Tall Buildings. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 135B, 141, 190. Role of structural engineer, architect, and other design professions in design process. Development of architectural design of tall buildings. Influence of building code, zoning, and finance. Advantages and limitations of different structural systems. Development of structural system design and computer model for architectural design. Letter grading.

**148. Wood and Timber Design. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisites: courses 108, 135A. Properties and behavior of wood and wood products, analysis and design of wood and timber structural members subjected to flexural, shear, and axial stresses; connections, fasteners, and detailing; and light-framed wood shear walls and diaphragms. Letter grading.

**150. Introduction to Hydrology. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: course M20 (or Computer Science 31), Mechanical and Aerospace Engineering 103. Study of hydrologic cycle and relevant atmospheric processes, water and energy balance, radiation, precipitation formation, infiltration, evaporation, vegetation transpiration, groundwater flow, storm runoff, and flood processes. Letter grading.

**151. Introduction to Water Resources Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: course 150, Mechanical and Aerospace Engineering 103. Recommended: courses 103, 110. Principles of hydraulics,

flow of water in open channels and pressure conduits, reservoirs and dams, hydraulic machinery, hydroelectric power. Introduction to system analysis and design applied to water resources engineering. Letter grading.

**152. Hydraulic and Hydrologic Design. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: courses 150, 151, 190. Analysis and design of hydraulic and hydrologic systems, including stormwater management systems, potable and recycled water distribution systems, wastewater collection systems, and constructed wetlands. Emphasis on practical design components, including reading/interpreting professional drawings and documents, environmental impact reports, permitting, agency coordination, and engineering ethics. Project-based course includes analysis of alternative designs, use of engineering economics, and preparation of written engineering reports. Letter grading.

**153. Introduction to Environmental Engineering Science. (4)** Lecture, four hours; discussion, one hour (when scheduled); outside study, seven hours. Recommended requisite: Mechanical and Aerospace Engineering 103. Water, air, and soil pollution: sources, transformations, effects, and processes for removal of contaminants. Water quality, water and wastewater treatment, waste disposal, air pollution, global environmental problems. Field trip. Letter grading.

**154. Chemical Fate and Transport in Aquatic Environments. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisite: course 153. Fundamental physical, chemical, and biological principles governing movement and fate of chemicals in surface waters and groundwater. Topics include physical transport in various aquatic environments, air-water exchange, acid-base equilibria, oxidation-reduction chemistry, chemical sorption, biodegradation, and bioaccumulation. Practical quantitative problems solved considering both reaction and transport of chemicals in environment. Letter grading.

**155. Unit Operations and Processes for Water and Wastewater Treatment. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 153. Biological, chemical, and physical methods used to modify water quality. Fundamentals of phenomena governing design of engineered systems for water and wastewater treatment systems. Field trip. Letter grading.

**156A. Environmental Chemistry Laboratory. (4)** Lecture, four hours; laboratory, four hours; outside study, four hours. Requisites: course 153 (may be taken concurrently), Chemistry 20A, 20B. Basic laboratory techniques in analytical chemistry related to water and wastewater analysis. Selected experiments include gravimetric analysis, titrimetry spectrophotometry, redox systems, pH and electrical conductivity. Concepts to be applied to analysis of real water samples in course 156B. Letter grading.

**156B. Environmental Engineering Unit Operations and Processes Laboratory. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Requisites: Chemistry 20A, 20B. Characterization and analysis of typical natural waters and wastewaters for inorganic and organic constituents. Selected experiments include analysis of solids, nitrogen species, oxygen demand, and chlorine residual, that are used in unit operation experiments that include reactor dynamics, aeration, gas stripping, coagulation/flocculation, and membrane separation. Letter grading.

**157A. Hydrologic Modeling. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 150 or 151. Introduction to hydrologic modeling. Topics selected from areas of (1) open-channel flow, including one-dimensional steady flow and unsteady flow, (2) pipe flow and water distribution systems, (3) rainfall-runoff modeling, and (4) groundwater flow and contaminant transport modeling, with focus on use of industry and/or research standard models with locally relevant applications. Letter grading.

**157B. Design of Water Treatment Plants. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 155, 190. Water quality standards and regulations, overview of water treat-

ment plants, design of unit operations, predesign of water treatment plants, hydraulics of plants, process control, and cost estimation. Letter grading.

**157C. Design of Wastewater Treatment Plants. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 155, 190. Process design of wastewater treatment plants, including primary and secondary treatment, detailed design review of existing plants, process control, and economics. Letter grading.

**157L. Hydrologic Analysis. (4)** Lecture, two hours; laboratory, five hours; outside study, five hours. Requisite: course 150. Collection, compilation, and interpretation of data for quantification of components of hydrologic cycle, including precipitation, evaporation, infiltration, and runoff. Use of hydrologic variables and parameters for development, construction, and application of analytical models for selected problems in hydrology and water resources. Letter grading.

**C158. Coastal Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 151 and Mechanical and Aerospace Engineering 103. Covers coastal water levels (tides, climate variability, storms, sea level rise, resonance), surface gravity waves (characteristics, transformation, spectra), coastal processes (overtopping, erosion, flooding), coastal protection (walls, nourishment, dunes, berms, nature-based infrastructure), coastal modeling. Concurrently scheduled with course C258. Letter grading.

**C159. Green Infrastructure. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 150, 153. Overview of fundamental science, engineering, and ecological principles to designing green infrastructure for stormwater management. Students design green infrastructure based on current practices, perform engineering calculations to calculate its performance, and develop critical thinking skills needed to design innovative or futuristic green infrastructures that would not only mitigate adverse impact of climate change, but also remain resilient under extreme weather conditions expected during climate change. Concurrently scheduled with course C259. Letter grading.

**C164. Sustainable Waste Management. (4)** (Formerly numbered 164.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 153. Introduction to environmental engineering. Management of solid wastes, some of which are hazardous, is integral part of infrastructure development, and it is required to achieve environmental sustainability. Study of all aspects of hazardous and municipal solid waste management technologies with particular emphasis on reuse of some wastes for alternative applications or energy production. Students are expected to integrate economic, environmental, regulatory, policy, and technical considerations into development of engineering designs of sustainable waste management. Student teams design sustainable remediation or waste management plans. Concurrently scheduled with course C264. Letter grading.

**M165. Environmental Nanotechnology: Implications and Applications. (4)** (Same as Engineering M103.) Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisite: Engineering M101. Introduction to potential implications of nanotechnology to environmental systems as well as potential application of nanotechnology to environmental protection. Technical contents include three multidisciplinary areas: (1) physical, chemical, and biological properties of nanomaterials, (2) transport, reactivity, and toxicity of nanoscale materials in natural environmental systems, and (3) use of nanotechnology for energy and water production, plus environmental protection, monitoring, and remediation. Letter grading.

**M166. Environmental Microbiology. (4)** (Same as Environmental Health Sciences M166.) Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisite: course 153. Microbial cell and its metabolic capabilities, microbial genetics and its potentials, growth of microbes and kinetics of growth, microbial ecology and diversity, microbiology of wastewater treatment, probing of microbes, public health microbiology, pathogen control. Letter grading.

**M166L. Environmental Microbiology Laboratory. (2)** (Same as Environmental Health Sciences M166L.) Lecture, one hour; laboratory, two hours; outside study, two hours. Requisite: course M166 (may be taken concurrently). General laboratory practice within environmental microbiology, sampling of environmental samples, classical and modern molecular techniques for enumeration of microbes from environmental samples, techniques for determination of microbial activity in environmental samples, laboratory setups for studying environmental biotechnology. Letter grading.

**170. Introduction to Construction Management. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Introduction to construction engineering theory, management, and techniques. Implementation of exercises from academic texts and real project case studies. Discussion of building systems, building components, project delivery methods, document control, critical path method scheduling, labor management, quality management, estimating, sustainability, and cost controls. Letter grading.

**180. Introduction to Transportation Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Designed for juniors/senior Civil Engineering students and Public Affairs graduate students. General characteristics of transportation systems, including streets and highways, rail, transit, air, and water. Capacity considerations, including planning, design, and operations. Components of roadway design, including horizontal and vertical alignment, cross sections, and pavements. Letter grading.

**C181. Traffic Engineering Systems: Operations and Control. (4)** (Formerly numbered 181.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 180. Traffic operations including traffic data collection and analysis, safety and crash studies, traffic flow theory, highway capacity analysis, signalized intersection design and analysis, and simulation modeling. Students gain understanding of basic traffic flow theory, learn to conduct traffic data collection and analysis, and to apply capacity analysis methods and simulation modeling for both highway and signalized intersections. Concurrently scheduled with course C281. Letter grading.

**C182. Rigid and Flexible Pavements: Design, Materials, and Serviceability. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisites: courses C104, 108, 120, Materials Science 104. Correlation, analysis, and metrication of aspects of pavement design, including materials selection and traffic loading and volume. Special attention to aspects of pavement distress/serviceability and factoring of these into metrics of pavement performance. Discussion of potential choices of pavement materials (i.e., asphalt and concrete) and their specific strengths and weaknesses in paving applications. Unification and correlation of different variables that influence pavement performance and highlight their relevance in pavement design. Concurrently scheduled with course C282. Letter grading.

**C185. Transportation Systems Analysis. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 180. Transportation researchers and practitioners are motivated by desire to explain spatial interactions that resulted in movement of people or goods from place to place. Such interactions become more intricate as new technologies emerge. To explore and perceive these intricate interactions, understanding of essential nature of transportation systems to analyze and optimally design such systems is needed more than ever. Introduction to fundamental concepts, methods, and principles underlying transportation systems analysis. Includes two modules, each of which focuses on one level of system analysis: traveler behavior and network. Concurrently scheduled with course C285. Letter grading.

**C186. Intelligent Transportation Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 180. Introduction to basic elements of intelligent transportation systems (ITS), focusing on technological, systems, and institutional aspects. Topics include systems engineering processes, advanced traveler information systems, transportation network operations, commercial vehicle operations

and intermodal freight, public transportation applications, ITS and regional strategic transportation planning, travel demand management, electronic toll collection, and road-pricing, connected and automated vehicles (CAV), data access and exchanges, cybersecurity for ITS, and other smart mobility technologies. Concurrently scheduled with course C286. Letter grading.

**188. Special Courses in Civil and Environmental Engineering. (4)** Lecture, to be arranged; discussion, to be arranged (when scheduled); outside study, to be arranged. Special topics in civil engineering for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated for credit with topic or instructor change. Letter grading.

**190. Professional Practice. (2)** Lecture, two hours; discussion; one hour; outside study, three hours. Requisite: one course from 121, 141, 142, 151, 155 (may be taken concurrently). Sustainability in design (e.g., LEED certification for building projects), professional licensure (PE, SE, and GE), project management (proposals, scheduling, and budgeting), business, public policy, leadership, ethics, earthquake loads, wind loads, load combinations, and environmental impact reports. Letter grading.

**194. Research Group Seminars: Civil and Environmental Engineering. (2 to 8)** Seminar, two to eight hours; outside study, four to 16 hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field or of research of faculty members or students. May be repeated for credit. Letter grading.

**199. Directed Research in Civil and Environmental Engineering. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**200. Civil and Environmental Engineering Graduate Seminar. (2)** Seminar, four hours; outside study, two hours. Various topics in civil and environmental engineering that may include earthquake engineering, environmental engineering, geotechnical engineering, hydrology and water resources engineering, materials engineering, structural engineering, and structural mechanics. May be repeated for credit. S/U grading.

**C204. Structure, Processing, and Properties of Civil Engineering Materials. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Discussion of aspects of cement and concrete materials, including manufacture of cement and production of concrete. Aspects of cement composition and basic chemical reactions, microstructure, properties of plastic and hardened concrete, chemical admixtures, and quality control and acceptance testing. Development and testing of fundamentals for complete understanding of overall response of all civil engineering materials. By end of term, successful utilization of fundamental materials science concepts to understand, explain, analyze, and describe engineering performance of civil engineering materials. Concurrently scheduled with course C104. Letter grading.

**C205. Structure and Properties of Amorphous Civil Engineering Materials. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 91 or Mechanical and Aerospace Engineering 101, Chemistry 20A, 20B, Mathematics 31A, 31B, 32B, Physics 1A, 1B, 1C. Corequisite: course 108. Nature and properties of amorphous civil engineering materials in fields of infrastructure and technology. Special attention to composition-structure-properties relationships and design and selection with respect to targeted civil engineering applications. Concurrently scheduled with course C105. Letter grading.

**C206. Modeling and Simulation of Civil Engineering Materials. (4)** (Formerly numbered 206.) Lecture, four hours; outside study, eight hours. Requisites: Chemistry and Biochemistry 20A, 20B, Mathematics 31A,

31B, 32B, Physics 1A, 1B, 1C. Provides fundamental understanding of modeling and numerical simulations for civil engineering materials. Largely focused on practical examples and applications. By course end, students are expected to be able to independently run simulations at scale relevant to targeted problems. Concurrently scheduled with course C106. Letter grading.

**C211. Machine Learning and Artificial Intelligence for Civil Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Theoretical and practical introduction to artificial intelligence and machine learning for civil engineering problems. Focus on practice and problem-solving skills. By course end, students are expected to be able to independently run machine learning analysis. Concurrently scheduled with course C111. Letter grading.

**220. Advanced Soil Mechanics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 120. State of stress. Consolidation and settlement analysis. Shear strength of granular and cohesive soils. In situ and laboratory methods for soil property evaluation. Letter grading.

**221. Advanced Foundation Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 121, 220. Stress distribution. Bearing capacity and settlement of shallow foundations, including spread footings and mats. Performance of driven pile and drilled shaft foundations under vertical and lateral loading. Construction considerations. Letter grading.

**222. Introduction to Soil Dynamics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 120. Review of engineering problems involving soil dynamics. Fundamentals of theoretical soil dynamics: response of sliding block-on-plane to cyclic earthquake loads, application of theories of single degree-of-freedom (DOF) system, multiple DOF system and one-dimensional wave propagation. Fundamentals of cyclic soil behavior: stress-strain-pore water pressure behavior, shear moduli and damping, cyclic settlement and concept of volumetric cyclic threshold shear strain. Introduction to modeling of cyclic soil behavior. Letter grading.

**223. Advanced Geotechnical Design. (4)** (Formerly numbered C223.) Lecture, four hours; outside study, eight hours. Requisite: course 220. Slope stability analysis, including limit equilibrium procedures, finite element method, seepage analysis, and advanced topics such as rapid drawdown, construction of embankments on soft soil, and seismic slope stability. Lateral earth retention systems including gravity walls and excavation support systems. Advanced analysis methods and design project involving real landslide problem. Emphasis on preparation of professional engineering documents such as proposals, work acknowledgements, figures, plans, and reports. Letter grading.

**224. Advanced Cyclic and Monotonic Soil Behavior. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 120. In-depth study of soil behavior under cyclic and monotonic loads. Relationships between stress, strain, pore water pressure, and volume change in range of very small and large strains. Concept of normalized static and cyclic soil behavior. Cyclic degradation and liquefaction of saturated soils. Cyclic settlement of partially saturated and dry soils. Concept of volumetric cyclic threshold shear strain. Factors affecting shear moduli and damping during cyclic loading. Postcyclic behavior under monotonic loads. Critical review of laboratory, field, and modeling testing techniques. Letter grading.

**225. Geotechnical Earthquake Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 220, 245 (may be taken concurrently). Analysis of earthquake-induced ground failure, including soil liquefaction, cyclic softening of clays, seismic compression, surface fault rupture, and seismic slope stability. Ground response effects on earthquake ground motions. Soil-structure interaction, including inertial and kinematic interaction and foundation deformations under seismic loading. Letter grading.

**226. Geoenvironmental Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 120. Field of geoenvironmental engineering involves application of geotechnical principles to environmental problems. Topics include environmental regulations, waste characterization, geosynthetics, solid waste landfills, subsurface barrier walls, and disposal of high water content materials. Letter grading.

**227. Numerical Methods in Geotechnical Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 220. Introduction to basic concepts of computer modeling of soils using finite element method, and to constitutive modeling based on elasticity and plasticity theories. Special emphasis on numerical applications and identification of modeling concerns such as instability, bifurcation, nonexistence, and nonuniqueness of solutions. Letter grading.

**C228. Geohazards and Infrastructure Resilience. (4)** (Formerly numbered 228.) Lecture, four hours; outside study, eight hours. Requisite: course 120. Geologic characterization of soil and rock units. Relationships developed between landforms, active, past, and ancient geologic processes, ground and surface water, and properties of soil and rock. Geohazards associated with climate change, wildfires, landslides, volcanism, and earthquakes. Effects of geologic processes on civil infrastructure and risk assessment procedures to promote resilience. Concurrently scheduled with course C128. Letter grading.

**M230A. Linear Elasticity. (4)** (Same as Mechanical and Aerospace Engineering M256A.) Lecture, four hours; outside study, eight hours. Requisite: Mechanical and Aerospace Engineering 156A or 166A. Linear elastostatics. Cartesian tensors; infinitesimal strain tensor; Cauchy stress tensor; strain energy; equilibrium equations; linear constitutive relations; plane elastostatic problems, holes, corners, inclusions, cracks; three-dimensional problems of Kelvin, Boussinesq, and Cerruti. Introduction to boundary integral equation method. Letter grading.

**M230B. Nonlinear Elasticity. (4)** (Same as Mechanical and Aerospace Engineering M256B.) Lecture, four hours; outside study, eight hours. Requisite: course M230A. Kinematics of deformation, material and spatial coordinates, deformation gradient tensor, nonlinear and linear strain tensors, strain displacement relations; balance laws, Cauchy and Piola stresses, Cauchy equations of motion, balance of energy, stored energy; constitutive relations, elasticity, hyperelasticity, thermoelasticity; linearization of field equations; solution of selected problems. Letter grading.

**M230C. Plasticity. (4)** (Same as Mechanical and Aerospace Engineering M256C.) Lecture, four hours; outside study, eight hours. Requisites: courses M230A, M230B. Classical rate-independent plasticity theory, yield functions, flow rules and thermodynamics. Classical rate-dependent viscoplasticity, Perzyna and Duvant/Lions types of viscoplasticity. Thermoplasticity and creep. Return mapping algorithms for plasticity and viscoplasticity. Finite element implementations. Letter grading.

**232. Theory of Plates and Shells. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 130. Small and large deformation theories of thin plates; energy methods; free vibrations; membrane theory of shells; axisymmetric deformations of cylindrical and spherical shells, including bending. Letter grading.

**233. Mechanics of Composite Material Structures. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses M230B, 232. Elastic, anisotropic stress-strain-temperature relations. Analysis of prismatic beams by three-dimensional elasticity. Analysis of laminated anisotropic plates and shells based on classical and first-order shear deformation theories. Elastodynamic behavior of laminated plates and cylinders. Letter grading.

**235A. Advanced Structural Analysis. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 135A. Recommended: course 135B. Review of matrix force and displacement methods of structural analysis; virtual work theorem, virtual forces, and displacements; theorems on stationary value of total and complementary potential energy, minimum

total potential energy, Maxwell/Betti theorems, effects of approximations, introduction to finite element analysis. Letter grading.

**235B. Finite Element Analysis of Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 130, 235A. Direct energy formulations for deformable systems; solution methods for linear equations; analysis of structural systems with one-dimensional elements; introduction to variational calculus; discrete element displacement, force, and mixed methods for membrane, plate, shell structures; instability effects. Letter grading.

**235C. Nonlinear Structural Analysis. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 235B. Classification of nonlinear effects; material nonlinearities; conservative, nonconservative material behavior; geometric nonlinearities, Lagrangian, Eulerian description of motion; finite element methods in geometrically nonlinear problems; postbuckling behavior of structures; solution of nonlinear equations; incremental, iterative, programming methods. Letter grading.

**236. Stability of Structures I. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 130 or 135B. Elastic buckling of bars. Different approaches to stability problems. Inelastic buckling of columns and beam columns. Columns and beam columns with linear, nonlinear creep. Combined torsional and flexural buckling of columns. Buckling of plates. Letter grading.

**M237A. Dynamics of Structures. (4)** (Same as Mechanical and Aerospace Engineering M269A.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: courses 135A, C137, or equivalent. Principles of dynamics. Determination of normal modes and frequencies by differential and integral equation solutions. Transient and steady-state response. Emphasis on derivation and solution of governing equations using matrix formulation. Letter grading.

**238. Computational Solid Mechanics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 235B. Advanced finite element and meshfree methods for computational solid mechanics. Stability and consistency in temporal discretization of parabolic and hyperbolic systems. Analysis of numerical dissipation and dispersion. Multifield variational principles for constrained problems. Meshfree methods: approximation theories, Galerkin meshfree methods, collocation meshfree methods, imposition of boundary conditions, domain integration, stability. Letter grading.

**C239. Elementary Structural Dynamics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisite: course 135B. Basic structural dynamics course for civil engineering students. Elastic free and forced vibrations of single degree of freedom systems, introduction to response history and response spectrum analysis approaches for single and multidegree of freedom systems. Axial, bending, and torsional vibration of beams. Concurrently scheduled with course C137. Letter grading.

**241. Advanced Steel Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses C137, 141, 235A. Performance characterization of steel structures for static and earthquake loads. Behavior state analysis and building code provisions for special moment resisting, braced, and eccentric braced frames. Composite steel-concrete structures. Letter grading.

**243A. Behavior and Design of Reinforced Concrete Structural Elements. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 142. Advanced topics on design of reinforced concrete structures, including stress-strain relationships for plain and confined concrete, moment-curvature analysis of sections, and design for shear. Design of slender and low-rise walls, as well as design of beam-column joints. Introduction to displacement-based design and applications of strut-and-tie models. Letter grading.

**243B. Response and Design of Reinforced Concrete Structural Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 243A, 246. Information on response and behavior of reinforced concrete buildings to earthquake ground motions. Topics include use of elastic and inelastic response spectra, role of strength, stiffness, and ductility in design, use of prescriptive versus performance-based design methodologies, and application of elastic and inelastic analysis techniques for new and existing construction. Letter grading.

**244. Structural Reliability. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Introduction to concepts and applications of structural reliability. Topics include computing first- and second-order estimates of failure probabilities of engineered systems, computing sensitivities of failure probabilities to assumed parameter values, measuring relative importance of random variables associated with systems, identifying relative advantages and disadvantages of various analytical reliability methods, using reliability tools to calibrate simplified building codes, and performing reliability calculations related to performance-based engineering. Letter grading.

**245. Earthquake Ground Motion Characterization. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Corequisite: course C137 or 246. Earthquake fundamentals, including plate tectonics, fault types, seismic waves, and magnitude scales. Characterization of earthquake source, including magnitude range and rate of future earthquakes. Ground motion prediction equations and site effects on ground motion. Seismic hazard analysis. Ground motion selection and modification for response history analysis. Letter grading.

**246. Structural Response to Ground Motions. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses C137, 141, 142, 235A. Spectral analysis of ground motions: response, time, and Fourier spectra. Response of structures to ground motions due to earthquakes. Computational methods to evaluate structural response. Response analysis, including evaluation of contemporary design standards. Limitations due to idealizations. Letter grading.

**247. Earthquake Hazard Mitigation. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 130, and M237A or 246. Concept of seismic isolation, linear theory of base isolation, visco-elastic and hysteretic behavior, elastomeric bearings under compression and bending, buckling of bearings, sliding bearings, passive energy dissipation devices, response of structures with isolation and passive energy dissipation devices, static and dynamic analysis procedures, code provisions and design methods for seismically isolated structures. Letter grading.

**250A. Surface Water Hydrology. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 150. In-depth study of surface water hydrology, including discussion and interrelationship of major topics such as rainfall and evaporation, soils and infiltration properties, runoff and snowmelt processes. Introduction to rainfall-runoff modeling, floods, and policy issues involved in water resource engineering and management. Letter grading.

**250B. Groundwater Hydrology. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 150. Theory of movement and occurrence of water in subterranean aquifers. Steady flow in confined and unconfined aquifers. Mechanics of wells; steady and unsteady radial flows in confined and unconfined aquifers. Theory of leaky aquifers. Parameter estimation. Seawater intrusion. Numerical methods. Applications. Letter grading.

**250C. Hydrometeorology. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 250A. In-depth study of hydrometeorological processes. Role of hydrology in climate system, precipitation and evaporation processes, atmospheric radiation, exchange of mass, heat, and momentum between soil and vegetation surface and overlying atmosphere, flux and transport in turbulent boundary layer, basic remote sensing principles. Letter grading.

**250D. Water Resources Systems Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 151. Application of mathematical programming techniques to water resources systems. Topics include reservoir management and operation; optimal timing, sequencing and sizing of water resources projects; and multiobjective planning and conjunctive use of surface water and groundwater. Emphasis on management of water quantity. Letter grading.

**251A. Rainfall-Runoff Modeling. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 250A, 251B. Introduction to hydrologic modeling concepts, including rainfall-runoff analysis, input data, uncertainty analysis, lumped and distributed modeling, parameter estimation and sensitivity analysis, and application of models for flood forecasting and prediction of streamflows in water resource applications. Letter grading.

**251B. Contaminant Transport in Groundwater. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 250B, 253. Phenomena and mechanisms of hydrodynamic dispersion, governing equations of mass transport in porous media, various analytical and numerical solutions, determination of dispersion parameters by laboratory and field experiments, biological and reactive transport in multiphase flow, remediation design, software packages and applications. Letter grading.

**251C. Remote Sensing with Hydrologic Applications. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 250A, 250C. Introduction to basic physical concepts of remote sensing as they relate to surface and atmospheric hydrologic processes. Applications include radiative transfer modeling and retrieval of hydrologically relevant parameters like topography, soil moisture, snow properties, vegetation, and precipitation. Letter grading.

**251D. Hydrologic Data Assimilation. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 250A, 250C. Introduction to basic concepts of classical and Bayesian estimation theory for purposes of hydrologic data assimilation. Applications geared toward assimilating disparate observations into dynamic models of hydrologic systems. Letter grading.

**252. Engineering Economic Analysis of Water and Environmental Planning. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: Engineering 110, one or more courses from Economics 1, 2, 11, 101. Economic theory and applications in analysis and management of water and environmental problems; application of price theory to water resource management and renewable resources; benefit-cost analysis with applications to water resources and environmental planning. Letter grading.

**253. Mathematical Models for Water Quality Management. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 153. Development of mathematical models for simulating environmental engineering problems. Emphasis on numerical techniques to solve nonlinear partial differential equations and their application to environmental engineering problems. Letter grading.

**254A. Environmental Aquatic Inorganic Chemistry. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Chemistry 20B, Mathematics 31A, 31B, Physics 1A, 1B. Equilibrium and kinetic descriptions of chemical behavior of metals and inorganic ions in natural fresh/marine surface waters and in water treatment. Processes include acid-base chemistry and alkalinity (carbonate system), complexation, precipitation/dissolution, absorption/oxidation/reduction, and photochemistry. Letter grading.

**255A. Physical and Chemical Processes for Water and Wastewater Treatment. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 155, 254A. Review of momentum and mass transfer, chemical reaction engineering, coagulation and flocculation, granular filtrations, sedimentation, carbon adsorption, gas transfer, disinfection, oxidation, and membrane processes. Letter grading.

**255B. Biological Processes for Water and Wastewater Treatment. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 254A, 255A. Fundamentals of environmental engineering microbiology; kinetics of microbial growth and biological oxidation; applications for activated sludge, gas transfer, fixed-film processes, aerobic and anaerobic digestion, sludge disposal, and biological nutrient removal. Letter grading.

**C258. Coastal Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 151 and Mechanical and Aerospace Engineering 103. Covers coastal water levels (tides, climate variability, storms, sea level rise, resonance), surface gravity waves (characteristics, transformation, spectra), coastal processes (overtopping, erosion, flooding), coastal protection (walls, nourishment, dunes, berms, nature-based infrastructure), coastal modeling. Concurrently scheduled with course C158. Letter grading.

**258A. Membrane Separations in Aquatic Systems. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 254A. Applications of membrane separations to desalination, water reclamation, brine disposal, and ultrapure water systems. Discussion of reverse osmosis, ultrafiltration, electrodialysis, and ion exchange technologies from both practical and theoretical standpoints. Letter grading.

**C259. Green Infrastructure. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 150, 153. Overview of fundamental science, engineering, and ecological principles to designing green infrastructure for stormwater management. Students design green infrastructure based on current practices, perform engineering calculations to calculate its performance, and develop critical thinking skills needed to design innovative or futuristic green infrastructures that would not only mitigate adverse impact of climate change, but also remain resilient under extreme weather conditions expected during climate change. Concurrently scheduled with course C159. Letter grading.

**260. Advanced Topics in Hydrology and Water Resources. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 250A, 250B, 250D. Current research topics in inverse problem of parameter estimation, experimental design, conjunctive use of surface and groundwater, multiobjective water resources planning, and optimization of water resource systems. Topics may vary from term to term. Letter grading.

**261. Colloidal Phenomena in Aquatic Systems. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 254A, 255A. Colloidal interactions, colloidal stability, colloidal hydrodynamics, surface chemistry, adsorption of pollutants on colloidal surfaces, transport of colloids in porous media, coagulation, and particle deposition. Consideration of applications to colloidal processes in aquatic environments. Letter grading.

**261A. Advanced Water Treatment Processes. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 255A. In-depth coverage of advanced water treatment processes, including advanced oxidation processes, photolysis, electrochemical treatment methods, and membrane separations. These advanced processes are increasingly necessary to adequately treat both drinking and wastewater. Study of process fundamentals and cutting-edge technologies in detail for thorough understanding of advantages and challenges associated with application of these processes. Letter grading.

**261B. Advanced Biological Processes for Water and Wastewater Treatment. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 255B. In-depth treatment of selected topics related to biological treatment of waters and wastewaters, such as biodegradation of xenobiotics, pharmaceuticals, emerging pollutants, toxicity, and nutrients. Discussion of theoretical aspects, experimental observations, and recent literature. Application to important and emerging environmental problems. Letter grading.

**M262A. Introduction to Atmospheric Chemistry. (4)** (Same as Atmospheric and Oceanic Sciences M203A.) Lecture, three hours. Requisite for undergraduates: Chemistry 20B. Principles of chemical ki-

netics, thermochemistry, spectroscopy, and photochemistry; chemical composition and history of Earth's atmosphere; biogeochemical cycles of key atmospheric constituents; basic photochemistry of troposphere and stratosphere, upper atmosphere chemical processes; air pollution; chemistry and climate. S/U or letter grading.

**M262B. Atmospheric Diffusion and Air Pollution. (4)** (Same as Atmospheric and Oceanic Sciences M224B.) Lecture, three hours. Nature and sources of atmospheric pollution; diffusion from point, line, and area sources; pollution dispersion in urban complexes; meteorological factors and air pollution potential; meteorological aspects of air pollution. S/U or letter grading.

**263A. Physics of Environmental Transport. (4)** Lecture, four hours; outside study, eight hours. Designed for graduate students. Transport processes in surface water, groundwater, and atmosphere. Emphasis on exchanges across phase boundaries: sediment/water interface; air/water gas exchange; particles, droplets, and bubbles; small-scale dispersion and mixing; effect of reactions on transport; linkages between physical, chemical, and biological processes. Letter grading.

**263B. Advanced Topics in Transport at Environmental Interfaces. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 263A. In-depth treatment of selected topics involving transport phenomena at environmental interfaces between solid, fluid, and gas phases, such as aquatic sediments, porous aggregates, and vegetative canopies. Discussion of theoretical models and experimental observations. Application to important environmental engineering problems. Letter grading.

**C264. Sustainable Waste Management. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Introduction to environmental engineering. Management of solid wastes, some of which are hazardous, is integral part of infrastructure development, and it is required to achieve environmental sustainability. Study of all aspects of hazardous and municipal solid waste management technologies with particular emphasis on reuse of some wastes for alternative applications or energy production. Students are expected to integrate economic, environmental, regulatory, policy, and technical considerations into development of engineering designs of sustainable waste management. Student teams design sustainable remediation or waste management plans. Concurrently scheduled with course C164. Letter grading.

**266. Environmental Biotechnology. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 153, 254A. Environmental biotechnology—concept and potential, biotechnology of pollutional control, bioremediation, biomass conversion: composting, biogas and bioethanol production. Letter grading.

**267. Environmental Applications of Geochemical Modeling. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 254A. Geochemical modeling is important tool for predicting environmental impacts of contamination. Hands-on experience in modeling using geochemical software packages commonly found in environmental consulting industry to gain better understanding of governing geochemical principles pertaining to movement and transformation of contaminants. Types of modeling include speciation, mineral solubility, surface complexation, reaction path, inverse mass balance, and reactive transport modeling. Case studies involve acid mine drainage, nuclear waste disposal, bioavailability and risk assessment, mine tailings and mining waste, deep well injection, landfill leachate, and microbial respiration. Research/modeling project required. Letter grading.

**C281. Traffic Engineering Systems: Operations and Control. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 180. Traffic operations including traffic data collection and analysis, safety and crash studies, traffic flow theory, highway capacity analysis, signalized intersection design and analysis, and simulation modeling. Students gain understanding of basic traffic flow theory, learn to conduct traffic data collection and analysis, and to apply capacity analysis methods and simulation mod-



eling for both highway and signalized intersections. Concurrently scheduled with course C181. Letter grading.

**C282. Rigid and Flexible Pavements: Design, Materials, and Serviceability. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Correlation, analysis, and metrication of aspects of pavement design, including materials selection and traffic loading and volume. Special attention to aspects of pavement distress/serviceability and factoring of these into metrics of pavement performance. Discussion of potential choices of pavement materials (i.e., asphalt and concrete) and their specific strengths and weaknesses in paving applications. Unification and correlation of different variables that influence pavement performance and highlight their relevance in pavement design. Concurrently scheduled with course C182. Letter grading.

**C285. Transportation Systems Analysis. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 180. Transportation researchers and practitioners are motivated by desire to explain spatial interactions that resulted in movement of people or goods from place to place. Such interactions become more intricate as new technologies emerge. To explore and perceive these intricate interactions, understanding of essential nature of transportation systems to analyze and optimally design such systems is needed more than ever. Introduction to fundamental concepts, methods, and principles underlying transportation systems analysis. Includes two modules, each of which focuses on one level of system analysis: traveler behavior and network. Concurrently scheduled with course C185. Letter grading.

**C286. Intelligent Transportation Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 180. Introduction to basic elements of intelligent transportation systems (ITS), focusing on technological, systems, and institutional aspects. Topics include systems engineering processes, advanced traveler information systems, transportation network operations, commercial vehicle operations and intermodal freight, public transportation applications, ITS and regional strategic transportation planning, travel demand management, electronic toll collection, and road-pricing, connected and automated vehicles (CAV), data access and exchanges, cybersecurity for ITS, and other smart mobility technologies. Concurrently scheduled with course C186. Letter grading.

**M287. Travel Behavior Analysis. (4)** (Same as Public Policy M221 and Urban Planning M253.) Lecture, three hours. Requisites: Public Policy 201 or M201A, and 203, or Urban Planning 207 and 220B. Descriptions of travel patterns in metropolitan areas, recent trends and projections into future, overview of travel forecasting methods, trip generation, trip distribution, mode split traffic assignment, critique of traditional travel forecasting methods and new approaches to travel behavior analysis. Letter grading.

**296. Advanced Topics in Civil Engineering. (2 to 4)** Seminar, to be arranged. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**298. Seminar: Engineering. (2 to 4)** Seminar, to be arranged. Limited to graduate civil engineering students. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Assistant Training Seminar. (2)** Seminar, two hours. Preparation: appointment as teaching assistant in Civil and Environmental Engineering Department. Seminar on communication of civil engineering principles, concepts, and methods; teaching assistant preparation, organization, and presentation of material, including use of visual aids; grading, advising, and rapport with students. S/U grading.

**596. Directed Individual or Tutorial Studies. (2 to 8)** Tutorial, to be arranged. Limited to graduate civil engineering students. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for MS Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. Limited to graduate civil engineering students. Reading and preparation for MS comprehensive examination. S/U grading.

**597B. Preparation for PhD Preliminary Examinations. (2 to 16)** Tutorial, to be arranged. Limited to graduate civil engineering students. S/U grading.

**597C. Preparation for PhD Oral Qualifying Examination. (2 to 16)** Tutorial, to be arranged. Limited to graduate civil engineering students. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 12)** Tutorial, to be arranged. Limited to graduate civil engineering students. Supervised independent research for MS candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Limited to graduate civil engineering students. Usually taken after students have been advanced to candidacy. S/U grading.

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## CLASSICS

*College of Letters and Science*

100 Dodd Hall  
Box 951417  
Los Angeles, CA 90095-1417

### Classics

310-825-4171

-----, *Chair*

## Faculty Roster

### Professors

David L. Blank, PhD  
David M. Goldstein, PhD  
Kathryn A. Morgan, PhD (*Joan Palevsky Professor of Classics*)  
Sarah P. Morris, PhD (*Steinmetz Professor of Classical Archaeology and Material Culture*)  
John K. Papadopoulos, PhD  
Alex C. Purves, PhD  
Giulia Sissa, PhD  
Gregory D. Woolf, PhD (*Ronald J. Mellor Professor of Ancient History*)

### Professors Emeriti

Sander M. Goldberg, PhD  
Robert A. Gurval, PhD  
Michael W. Haslam, PhD  
Steven Lattimore, PhD  
Jaen Puhvel, PhD  
Amy E. Richlin, PhD  
Brent H. Vine, PhD (*A. Richard Diebold, Jr., Endowed Professor Emeritus*)

### Associate Professors

Hannah Čulík-Baird, PhD  
Chris J. Johanson, PhD  
N. Bryant Kirkland, PhD  
Francesca K. Martelli, DPhil

### Assistant Professors

Sarah E. Beckmann, PhD

Ella H. Haselswerdt, PhD  
Lydia M. Spielberg, PhD  
Adriana M. Vazquez, PhD

### Lecturers

Samuel D. Beckelhymer, PhD  
Zachary P. Borst, PhD  
Richard M. Ellis, PhD

### Adjunct Associate Professor

Catherine Atherton, PhD

## Overview

The civilizations of ancient Greece and Rome are the focus of research and teaching in the Department of Classics. These areas of study are important in their own right and for their contributions to the political, cultural, intellectual, and artistic development of the Western world. To this end, the department offers a wide variety of interdisciplinary courses in classical civilization (multiple-listed in the departments of art history, philosophy, and political science), as well as elementary and advanced courses in ancient Greek and Latin language, literature, and linguistics. Classical civilization courses include such topics as Greek and Latin literature in translation (genres of epic, comedy, tragedy, biography), classical mythology, religion, law, gender and sexuality, politics, philosophy, art and archaeology, and the reception of the ancient world in modern cultures (cinema and classics).

## Undergraduate Study

Students considering a major in the department should consult with the adviser as soon as possible in their UCLA career, but in no case later than the point at which they are about to take upper-division courses.

Note: Students in the Greek, Latin, and Greek and Latin majors are permitted to take Greek 200A, 200B, 200C and Latin 200A, 200B, 200C with consent of the instructor.

## Graduate Study

Students can earn Master of Arts degrees in Classics (Greek and Latin), in Greek, or in Latin only after they have been admitted to the PhD program.

## Undergraduate Majors

### Classical Civilization BA

The civilizations of ancient Greece and Rome have made important contributions to the political, social, artistic, and intellectual development of the Western world. The purpose of the Classical Civilization major is to provide students with a formal and balanced introduction to the historical and cultural experiences of the ancient Greeks and Romans. The program of study is structured, yet not rigid. Lower-division survey courses and requirements in elementary language study, ancient history, and classical art establish an essential background of knowledge, while electives encourage individual and specialized interests. The program offers a

broad range of courses in the fields of language, literature, history, mythology, religion, philosophy, art, and archaeology. The major serves as excellent and rewarding preparation for a professional career in medicine, law, business, journalism, communications, or the arts.

## Capstone Major

The Classical Civilization major is a designated capstone major. Undergraduate students take a capstone seminar in which they use the skills and expertise acquired in earlier coursework to research, analyze, and complete a written paper or project. They identify and analyze ancient classical documents, material evidence, or other forms of primary sources and demonstrate their critical skills by engaging in presentations and weekly discourse with their peers.

## Learning Outcomes

The Classical Civilization major has the following learning outcomes:

- Demonstrated specific skills and expertise, including research, analysis, and writing
- Identification and analysis of appropriate ancient sources, material evidence, and other primary documents appropriate to the field
- Engagement with peers through presentation, discussion, and critique of student work
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

## Entry to the Major

### Transfer Students

Transfer applicants to the Classical Civilization major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one classical Greek culture course, one Roman civilization course, and one course in Greek or Roman literature in translation, classical mythology, or classical archaeology.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Classics 10, 20, Greek 3 or 16 or Latin 3 or 16, and one course from 30, 40W, 41W, 42, 51A, 51B, 60, 88GE.

### The Major

*Required:* (1) Nine upper-division courses in the department (courses in related fields not offered by the department may be substituted by petition and with approval of the undergraduate adviser)—no more than three may be selected from Greek 100 through 133 or Latin 100 through 133, and Classics 198A and 198B may be applied as only one course toward the major and (2) one capstone seminar (Classics 191).

## Honors Program

### Requirements

All honors students are required to take Classics 191 (or an equivalent undergraduate seminar) in their junior year before beginning work on the honors thesis. Students must then enroll in Classics 198A and 198B in consecutive terms, in which they write the thesis under the direct supervision of a faculty member. They may take courses 198A and 198B concurrently or be exempt from course 198A only with approval of the faculty undergraduate adviser. In course 198A students submit an annotated bibliography and preliminary outline of their thesis. In course 198B, they submit at least one initial draft and the final revised version of the thesis. Only course 198B may be applied toward the upper-division classical civilization requirement for departmental majors.

## Policies

### The Major

All other courses in the 190 series may be substituted only by petition.

## Honors Program

### Admission

The honors program is open to Classical Civilization majors with a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better. Students with lower GPAs may petition for admission to the program, but these grade-point averages must be achieved before graduation in order to qualify for honors.

### Requirements

To qualify for graduation with departmental honors, students must (1) have a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better and (2) complete Classics 198A and 198B with grades of A– or better.

To qualify for graduation with departmental highest honors, students must (1) have a cumulative GPA of 3.85 or better in departmental courses and an overall GPA of 3.65 or better and (2) complete Classics 198A and 198B with grades of A.

## Greek BA

### Capstone Major

The Greek major is a designated capstone major. Undergraduate students take a capstone seminar in which they use the skills and expertise acquired in earlier coursework to research, analyze, and complete a written paper or project. They identify and analyze ancient classical documents, material evidence, or other forms of primary sources and demonstrate their critical skills by engaging in presentations and weekly discourse with their peers.

## Learning Outcomes

The Greek major has the following learning outcomes:

- Demonstrated specific skills and expertise, including research, analysis, and writing
- Identification and analysis of appropriate ancient sources, material evidence, and other primary documents appropriate to the field
- Engagement with peers through presentation, discussion, and critique of student work
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

## Entry to the Major

### Transfer Students

Transfer applicants to the Greek major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one year of Greek and related courses in civilization, culture, history, linguistics, literature, and closely related languages.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Classics 10, 20; Greek 1, 2, 3, 20, or equivalent. Greek 16 may be substituted for Greek 1, 2, 3.

### The Major

*Required:* (1) Seven upper-division Greek courses, including course 110; Greek 197 and 199 may be applied only by petition; (2) three upper-division courses in classical civilization and/or ancient history (History 112A through M112E, 113A, 113B, 114A, 114B, 114C, 115); (3) one capstone seminar (Classics 191).

## Honors Program

### Requirements

All honors students are required to take Classics 191 (or an equivalent undergraduate seminar) in their junior year before beginning work on the honors thesis. Students must then enroll in Classics 198A and 198B in consecutive terms, in which they write the thesis under the direct supervision of a faculty member. They may take courses 198A and 198B concurrently or be exempt from course 198A only with approval of the faculty undergraduate adviser. In course 198A students submit an annotated bibliography and preliminary outline of their thesis. In course 198B, they submit at least one initial draft and the final revised version of the thesis. Only course 198B may be applied toward the upper-division classical civilization requirement for departmental majors.

## Policies

### The Major

Courses in related fields not offered by the department may be substituted by petition and with approval of the faculty undergraduate adviser.

## Honors Program

### Admission

The honors program is open to Greek majors with a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better. Students with lower GPAs may petition for admission to the program, but these grade-point averages must be achieved before graduation in order to qualify for honors.

### Requirements

To qualify for graduation with departmental honors, students must (1) have a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better and (2) complete Classics 198A and 198B with grades of A– or better.

To qualify for graduation with departmental highest honors, students must (1) have a cumulative GPA of 3.85 or better in departmental courses and an overall GPA of 3.65 or better and (2) complete Classics 198A and 198B with grades of A.

## Greek and Latin BA

### Capstone Major

The Greek and Latin major is a designated capstone major. Undergraduate students take a capstone seminar in which they use the skills and expertise acquired in earlier coursework to research, analyze, and complete a written paper or project. They identify and analyze ancient classical documents, material evidence, or other forms of primary sources and demonstrate their critical skills by engaging in presentations and weekly discourse with their peers.

### Learning Outcomes

The Greek and Latin major has the following learning outcomes:

- Demonstrated specific skills and expertise, including research, analysis, and writing
- Identification and analysis of appropriate ancient sources, material evidence, and other primary documents appropriate to the field
- Engagement with peers through presentation, discussion, and critique of student work
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

### Entry to the Major

#### Transfer Students

Transfer applicants to the Greek and Latin major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one year of Greek and of Latin and related courses in civilization, culture, history, linguistics, literature, and closely related languages.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Classics 10, 20; Greek 1, 2, 3, 20 and Latin 1, 2, 3, 20, or equivalent. Greek 16 may be substituted for Greek 1, 2, 3.

### The Major

*Required:* (1) Eight upper-division Greek and Latin courses (of which at least four must be in each language), including Greek 110 or Latin 110; Greek and/or Latin 197 and 199 may be applied only by petition; (2) three upper-division courses in classical civilization and/or ancient history (History 112A through M112E, 113A, 113B, 114A, 114B, 114C, 115); (3) one capstone seminar (Classics 191).

## Honors Program

### Requirements

All honors students are required to take Classics 191 (or an equivalent undergraduate seminar) in their junior year before beginning work on the honors thesis. Students must then enroll in Classics 198A and 198B in consecutive terms, in which they write the thesis under the direct supervision of a faculty member. They may take courses 198A and 198B concurrently or be exempt from course 198A only with approval of the faculty undergraduate adviser. In course 198A students submit an annotated bibliography and preliminary outline of their thesis. In course 198B, they submit at least one initial draft and the final revised version of the thesis. Only course 198B may be applied toward the upper-division classical civilization requirement for departmental majors.

## Policies

### The Major

Courses in related fields not offered by the department may be substituted by petition and with approval of the faculty undergraduate adviser.

## Honors Program

### Admission

The honors program is open to Greek and Latin majors with a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better. Students with lower GPAs may petition for admission to the program, but these grade-point averages must be achieved before graduation in order to qualify for honors.

### Requirements

To qualify for graduation with departmental honors, students must (1) have a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better and (2) complete Classics 198A and 198B with grades of A– or better.

To qualify for graduation with departmental highest honors, students must (1) have a cumulative GPA of 3.85 or better in departmental courses and an overall GPA of 3.65 or better and (2) complete Classics 198A and 198B with grades of A.

## Latin BA

### Capstone Major

The Latin major is a designated capstone major. Undergraduate students take a capstone seminar in which they use the skills and expertise acquired in earlier coursework to research, analyze, and complete a written paper or project. They identify and analyze ancient classical documents, material evidence, or other forms of primary sources and demonstrate their critical skills by engaging in presentations and weekly discourse with their peers.

### Learning Outcomes

The Latin major has the following learning outcomes:

- Demonstrated specific skills and expertise, including research, analysis, and writing
- Identification and analysis of appropriate ancient sources, material evidence, and other primary documents appropriate to the field
- Engagement with peers through presentation, discussion, and critique of student work
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

### Entry to the Major

#### Transfer Students

Transfer applicants to the Latin major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one year of Latin and related courses in civilization, culture, history, linguistics, literature, and closely related languages.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Classics 10, 20; Latin 1, 2, 3, 20, or equivalent. Latin 16 may be substituted for Latin 1, 2, 3.

### The Major

*Required:* (1) Seven upper-division Latin courses, including course 110; Latin 197 and 199 may be applied only by petition; (2) three upper-division courses in classical civilization and/or ancient history (History 112A through M112E, 113A, 113B, 114A, 114B, 114C, 115); (3) one capstone seminar (Classics 191).

## Honors Program

### Requirements

All honors students are required to take Classics 191 (or an equivalent undergraduate seminar) in their junior year before beginning work on the honors thesis. Students must then enroll in Classics 198A and 198B in consecutive terms, in which they write the thesis under the direct supervision of a faculty member. They



may take courses 198A and 198B concurrently or be exempt from course 198A only with approval of the faculty undergraduate adviser. In course 198A students submit an annotated bibliography and preliminary outline of their thesis. In course 198B, they submit at least one initial draft and the final revised version of the thesis. Only course 198B may be applied toward the upper-division classical civilization requirement for departmental majors.

## Policies

### The Major

Courses in related fields not offered by the department may be substituted by petition and with approval of the faculty undergraduate adviser.

### Honors Program

#### Admission

The honors program is open to Latin majors with a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better. Students with lower GPAs may petition for admission to the program, but these grade-point averages must be achieved before graduation in order to qualify for honors.

#### Requirements

To qualify for graduation with departmental honors, students must (1) have a cumulative grade-point average of 3.5 or better in departmental courses and an overall GPA of 3.25 or better and (2) complete Classics 198A and 198B with grades of A- or better.

To qualify for graduation with departmental highest honors, students must (1) have a cumulative GPA of 3.85 or better in departmental courses and an overall GPA of 3.65 or better and (2) complete Classics 198A and 198B with grades of A.

## Undergraduate Minors

### Classical Civilization Minor

The Classical Civilization minor is designed to recognize a serious commitment to the study of the cultures and civilizations of ancient Greece and Rome. Lower-division survey courses in historical studies, classical literature, mythology, and film provide an essential introduction to the imagination and power of the ancient world. Students may fulfill upper-division requirements from a variety of courses in classical civilization and related fields, including political and social history, literature, art and archaeology, religion, mythology, philosophy, and cultural studies of ethnicity, gender, and sexuality in antiquity.

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Lower-Division Courses (15 units):* Classics 10, 20, and one course from 30, 40W, 41W, 42, 51A, 51B, 60.

*Required Upper-Division Courses (20 units):* Five upper-division courses in classical civilization offered by the department.

### Policies

One course in a related field may be substituted with approval of the faculty undergraduate adviser. Classics 191 may be applied, but all other courses in the 190 series may be substituted only by petition.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Greek Language and Culture Minor

The Greek Language and Culture minor is designed to recognize a serious commitment to the study of ancient or modern Greek. After completing either lower-division ancient Greek (Greek 2, 3, 20) or modern Greek (Greek 9A, 9B, 9C), students select departmental upper-division courses centered on Greek texts, culture, and contexts. Students may take reading courses in ancient Greek prose and poetry that provide close analysis of individual texts, with attention to their historical, literary, and cultural context, and/or they may choose to take courses in Byzantine or modern Greek or courses in translation that ground their language training within the broader scope of Hellenic studies.

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (12 or 14 units):* Greek 2, 3, and 20, or 9A, 9B, and 9C, or equivalent. Greek 16 may be substituted for Greek 2 and 3.

*Required Upper-Division Courses (20 units):* Two courses selected from Greek 100 through 187; three additional upper-division courses in Greek or classical civilization.

### Policies

Courses in related fields not offered by the department may be substituted by petition and with approval of the undergraduate adviser. Up to three of the following courses will be automatically approved: Art History CM115A, C116A, C116B, Comparative Literature 102, 106, M120, History 112B, 112D, 113A, 113B, 116A, 116B, M185G, Indo-European Studies M150, C160, Philosophy 100A.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Latin Language and Culture Minor

The Latin Language and Culture minor is designed to recognize a serious commitment to the study of the Latin language. After a year of elementary Latin (Latin 1, 2, 3) or its equivalent, students select departmental upper-division reading courses in classical (and/or late antique and medieval) Latin prose and poetry that provide close analysis of individual texts, with attention to their historical, literary, and cultural context and/or they may choose to take courses in translation that ground their language training within the broader scope of Roman studies and classical reception.

Subjects of study include Roman comedy, epic, lyric, elegy, satire, history, rhetoric, philosophy, epistolography, and the novel.

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (14 units):* Latin 2, 3, 20, or equivalent. Latin 16 may be substituted for Latin 2 and 3.

*Required Upper-Division Courses (20 units):* Two courses selected from Latin 100 through 187; three additional upper-division courses in Latin or classical civilization.

### Policies

Courses in related fields not offered by the department may be substituted by petition and with approval of the undergraduate adviser.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Classics MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announce-

ments, other publications, and websites of the schools, departments, and programs.

## Greek MA

The Master of Arts degree in Greek may only be earned after students have been admitted to the PhD program in Classics.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Latin MA

The Master of Arts degree in Latin may only be earned after students have been admitted to the PhD program in Classics.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Classics

### Lower-Division Courses

**10. Discovering Greeks. (5)** Lecture, three hours; discussion, one hour. Knowledge of Greek not required. Study of Greek life and culture from age of Homer to Roman conquest. Readings focus on selections from works of ancient authors in translation. Lectures illustrated with images of art, architecture, and material culture. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP or letter grading.

**20. Discovering Romans. (5)** Lecture, three hours; discussion, one hour. Knowledge of Latin not required. Study of Roman life and culture from time of city's legendary foundations to end of classical antiquity. Readings focus on selections from works of ancient authors in translation. Lectures illustrated with images of art, architecture, and material culture. P/NP or letter grading.

**30. Classical Mythology. (5)** Lecture, three hours; discussion, one hour. Introduction to myths and legends of ancient Greece and/or Rome, role of those stories in their societies, and modern approaches to studying them. P/NP or letter grading.

**40W. Reading Greek Literature: Writing-Intensive. (5)** Lecture, two hours; discussion, two hours. Requisite: English Composition 3. Exploration in detail and from variety of critical perspectives of carefully selected literary texts characteristic of ancient Greece and significant in Western literary tradition. Satisfies Writing II requirement. Letter grading.

**41W. Reading Roman Literature: Writing-Intensive. (5)** Lecture, two hours; discussion, two hours. Requisite: English Composition 3. Exploration in detail and from variety of critical perspectives of carefully selected set of literary texts characteristic of ancient Rome and significant in Western literary tradition. Satisfies Writing II requirement. Letter grading.

**42. Cinema and Ancient World. (5)** Lecture/screenings, five hours; discussion, one hour. Use of popular culture and cinema to introduce students to ancient Greek and/or Roman culture; focus at discretion of instructor. P/NP or letter grading.

**47. Medical Terminology: Origins, Nature, and Practice. (5)** Lecture, three hours. Introduction to specialized vocabulary of health sciences, which is rooted in Greek and Roman languages and in those two cultures from which much of history of modern medicine is derived. Students gain working knowledge of fundamental terminology used in medicine and health sciences as well as how this terminology has been composed. Development of ability to interpret and pronounce words. Students apply linguistic rules and how they operate in English and field-specific vocabulary to understand new terminology in various health science fields. Study of etymological origins of fundamental terminology as mnemonic aid for learning and recalling this terminology, and also to serve as mechanism for connecting health/medical professions to humanistic origins. P/NP or letter grading.

**48. Ancient Greek and Roman Medicine. (5)** Lecture, three hours; discussion, one hour. Introduction to Greek and Roman medicine in its intellectual and cultural context. Examination of construction of concepts such as health, disease, physician, man, woman, cause, and difference. Readings from Greek literature and healing in cult of Asclepius. Readings of texts from Hippocratic collection, thought to be close to practice and theory of 5th-century BCE Greek physician, relating them to medical practice, competition for students and patients, intellectual display, developing scientific methods, ethnography, and Greek philosophy. Discussion of plagues as attempts to view such outbreaks as social phenomena. Examination of how Hippocratic understanding of how—or whether—we can know about what happens inside body was developed and challenged in 3rd-century BCE Alexandria. Study of Prince of Physicians, Galen, champion of Hippocratic medicine, influential into 18th century. P/NP or letter grading.

**51A. Art and Archaeology of Ancient Greece. (5)** Lecture, three hours; discussion, one hour. Survey of major period, theme, or medium of Greek art and archaeology at discretion of instructor. P/NP or letter grading.

**51B. Art and Archaeology of Ancient Rome. (5)** Lecture, three hours; discussion, one hour. Survey of major period, theme, or medium of Roman art and archaeology at discretion of instructor. P/NP or letter grading.

**60. Fantastic Journey: Antiquity and Beyond. (5)** Lecture, two and one half hours; discussion, one hour. Investigation of phenomenon of fantastic or imaginary journey, from Homer's *Odyssey* to Stanley Kubrick's *2001: A Space Odyssey*. Examination of ways in which travel to strange or new worlds is presented through number of texts (and occasionally films) across different cultures and periods, with focus primarily on antiquity but also looking at how important motifs from ancient Greek and Roman travel narratives have endured to present day. Issues include cultural relativism, what makes space either familiar or alien, rebuilding of home in fantastic territories, methods of travel (both fantastic and mundane), methods of measuring time and distance across space, modern classifications of fantasy and science fiction, and to what extent these terms are applicable to ancient world. P/NP or letter grading.

**88A-88Z. Lower-Division Seminars. (4 each)** Seminar, three hours. Variable topics; consult Schedule of Classes or department for topics to be offered in specific term. P/NP or letter grading.

**88GE. General Education Seminar Sequences. (5)** Seminar, three hours. Focused study of one aspect of ancient Greek or Roman culture or reception of classical tradition. Topics are interdisciplinary in nature (literature, arts, religion, politics, culture) and make connections between ancient and postclassical eras. Topics include rediscovery of Pompeii and Herculaneum; Roman religion and literature; pleasures of Greek or Roman body; and 18th-century British literature and reception of classics. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**M114A. History of Ancient Mediterranean World. (4)** (Same as History M112C.) Lecture, five hours. Intensive on-site study of history and culture of ancient Rome from founding of city to conversion of Christianity. Part of UCLA Summer Travel Program. P/NP or letter grading.

**M114B. History and Monuments of Rome: Field Studies. (4)** (Same as History M112E.) Fieldwork, five hours. Enforced corequisite: course M114A. Examination of history, art, and monuments of ancient Rome through daily lectures and field walks to museums and archaeological sites. Field trips outside Rome to Pompeii, Hadrian's Villa, and ancient Ostia. Reception and ruins of Roman antiquity in medieval, Renaissance, and modern eras explored in their historical context. Part of UCLA Summer Travel Program. P/NP or letter grading.

**M121. Ancient and Medieval Political Theory. (4)** (Same as Political Science M111A.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exposition and critical analysis of major thinkers such as Plato, Aristotle, Thucydides, St. Augustine, Aquinas, Machiavelli, and More and questions such as forms of government, citizenship, justice, happiness, rhetoric, religion, emotion. P/NP or letter grading.

**M124. Modern Receptions of Ancient Political Thought. (4)** (Same as Political Science M119A.) Lecture, three hours. Designed for juniors/seniors. Study of how Western culture has conceived and reinterpreted political thought of ancient Greeks and Romans. Topics include examination of influential case(s) of modern reception of classical antiquity. P/NP or letter grading.

**M125. Invention of Democracy. (5)** (Same as Political Science M112B.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Democracy was invented in ancient Greece as political form grounded on equality before law, citizenship, and freedom. It came into existence as struggle by *demos*, people, aware of its excellence and proud of its power, *kratos*. It became only regime capable of including all members of community while disregarding wealth, status, and diverging interests. Examination of history and theory of ancient democracy. P/NP or letter grading.

**130. Race, Ethnicity, Identity in Greco-Roman World. (4)** Lecture, two and one half hours. Examination of construction of racial and ethnic identities in Greco-Roman world and ways that ancient texts and study of antiquity have influenced Western constructions of race. Case studies include both ethnographic constructions of other by dominant groups (e.g. invention of stereotypes like barbarian and noble savage) and experiences of members of marginalized groups



within dominant cultures (e.g. Egyptian identity in Hellenistic Egypt, Greek, Syrian, and Jewish identity in Roman Empire). P/NP or letter grading.

**M133. Ancient Historiography: Theory and Practice. (4)** (Same as History M113C.) Lecture, three hours. Study of theory, practice, and development of writing history in cultures of ancient Greece and Rome. Focus is literary, centered on questions of genre and rhetoric. Encourages appreciation for how ancient historiography relates to other ancient genres (epic, biography, oratory). Readings may draw widely from various authors, including Herodotus, Thucydides, Livy, Tacitus, and others. P/NP or letter grading.

**137. Ancient Lives: Art of Biography. (4)** Lecture, three hours. Study of origins, development, and practice of writing lives (i.e., biography) represented in cultures of ancient Greece and Rome. Readings include examples from Greek and Roman lives of Plutarch and lives of Roman Emperors (Caesars) by Suetonius. Comparisons with modern biographical traditions in literature and film. P/NP or letter grading.

**138. Ancient Letters. (4)** Lecture, three hours. Requisite: course 10 or 20. Study of practice of letter writing in ancient Greek and Roman worlds. Broad survey of letters as literary compositions and historical documents or more focused analysis of one particular period, author, or theme. P/NP or letter grading.

**140. Topics in History of Greek Literature. (4)** Lecture, three hours. Requisite: course 10 or 40W. Investigation of specific issue in understanding of Greek literature, such as definition of one genre or evaluation of particular author. May be repeated for credit with topic change. P/NP or letter grading.

**141. Topics in History of Latin Literature. (4)** Lecture, three hours. Requisite: course 20 or 41W. Investigation of specific issue in interpretation of Latin literature, such as definition of one genre or evaluation of particular author. May be repeated for credit with topic change. P/NP or letter grading.

**142. Ancient Epic. (4)** Lecture, three hours. Requisite: one course from 10, 20, 30, 40W, or 41W. Homer's *Iliad* and *Odyssey*, Vergil's *Aeneid*, and Ovid's *Metamorphoses*, studied in translation. P/NP or letter grading.

**143A. Ancient Tragedy. (4)** Lecture, three hours. Requisite: course 10 or 40W. Survey of tragedy from 5th-century Athens through later antiquity. P/NP or letter grading.

**143B. Ancient Comedy. (4)** Lecture, three hours. Requisite: course 10 or 20. Survey of comedy as it developed in Greek and Roman worlds. P/NP or letter grading.

**144. Topical Studies in Ancient Culture. (4)** Lecture, three hours. Requisite: one course from 10, 20, 30, 40W, or 41W. Investigation of one problem in ancient culture that involves discussion of both Greek and Roman material. May be repeated for credit with topic change. P/NP or letter grading.

**M145A. Ancient Greek and Roman Philosophy. (4)** (Same as Philosophy M103A.) Lecture, three hours. Study of some major Greek and Roman philosophical texts, including those of pre-Socratics, Plato, Aristotle, and Hellenistic philosophers, with emphasis on historical and cultural setting of texts, their literary form, interrelations, and contribution to discussion of basic philosophical issues. P/NP or letter grading.

**M145B. Later Ancient Greek Philosophy. (4)** (Same as Philosophy M103B.) Lecture, three hours. Requisite: one course from M145A, Philosophy 1, 100A, M101B, or M102. Study of some major texts in Greek philosophy of Hellenistic and Roman periods. Readings vary and include works by Stoics, skeptics, philosophers of science, Neoplatonists, etc. P/NP or letter grading.

**M146A. Plato—Earlier Dialogues. (4)** (Same as Philosophy M101A.) Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Study of selected topics in early and middle dialogues of Plato. P/NP or letter grading.

**M146B. Plato—Later Dialogues. (4)** (Same as Philosophy M101B.) Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Study of selected topics in middle and later dialogues of Plato. P/NP or letter grading.

**M147. Aristotle. (4)** (Same as Philosophy M102.) Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Study of selected works of Aristotle. P/NP or letter grading.

**148. Early Greek Medicine and Thought. (5)** Lecture, three hours; discussion, one hour. Versions of medical theory and practice in context of Greek intellectual and cultural developments. Readings from medical, philosophical, and historical texts. P/NP or letter grading.

**M149. Bodies in Antiquity. (4)** (Same as Disability Studies M122.) Lecture, three hours. Investigation of individuals and groups that compose ancient Greek and Roman societies and relationship they have with larger social body, with particular focus on marginalized or minority groups such as women, noncitizens (resident aliens and provincials), slaves, children, elderly, and disabled. Examination of ways these groups contribute to or detract from our understanding of ancient society as whole. May be repeated for credit with topic change. P/NP or letter grading.

**150A. Female in Greek Literature and Culture. (4)** Lecture, three hours. Requisite: course 10. Interdisciplinary study of concept of female in Greek literature and culture. P/NP or letter grading.

**150B. Female in Roman Literature and Culture. (4)** Lecture, three hours; discussion, one hour. Requisite: course 20. Interdisciplinary study of concept of female in Roman literature and culture. P/NP or letter grading.

**C151E. Archaeological Field Techniques. (12)** Off-campus field archaeology, 36 hours. Preparation: at least one classical archaeology course. Training in techniques of archaeological research in field, including topographic and area survey, mapping and recording artifacts, excavation and data analysis. Conducted in Mediterranean area. Concurrently scheduled with course C251E. P/NP or letter grading.

**152A. Ancient City: Greek World. (4)** Lecture, three hours. Enforced requisite: course 10 or 51A or Art History 20 or History 1A. Range of interdisciplinary approaches to study of Athens and/or cities of Greek world, including Asia Minor, south Italy, and Sicily. Approaches, themes, and periods (both ancient city and receptions of city from classical antiquity to modern era) vary depending on individual instructor and topic. May be repeated for credit with topic change. P/NP or letter grading.

**152B. Ancient City: Roman World. (4)** Lecture, three hours. Enforced requisite: course 20 or 51B or Art History 20 or History 1A. Range of interdisciplinary approaches to study of Rome and/or cities of Italy and Roman Empire. Approaches, themes, and periods (both ancient city and receptions of city from classical antiquity to modern era) vary depending on individual instructor and topic. May be repeated for credit with topic change. P/NP or letter grading.

**M153A. Minoan Art and Archaeology. (4)** (Same as Art History M111.) Lecture, three hours. Requisite: course 10 or 51A or Art History 20. Study of development of art and architecture in Minoan Crete from circa 3000 to 1000 BC. P/NP or letter grading.

**M153B. Mycenaean Art and Archaeology. (4)** (Same as Art History M112A.) Lecture, three hours. Requisite: course 10 or 51A or Art History 20. Study of development of art and architecture in Mycenaean Greece from circa 2000 to 1000 BC. P/NP or letter grading.

**M153C. Archaic Greek Art and Archaeology. (4)** (Same as Art History M112B.) Lecture, three hours. Requisite: course 10 or 51A or Art History 20. Study of development of art and architecture of Greek world from approximately 800 through 490 BC. P/NP or letter grading.

**M153D. Classical Greek Art and Archaeology. (4)** (Same as Art History M112C.) Lecture, three hours. Requisite: course 10 or 51A or Art History 20. Study of development of art and architecture of Greek world from approximately 490 through 350 BC. P/NP or letter grading.

**M153E. Hellenistic Greek Art and Archaeology. (4)** (Same as Art History M112D.) Lecture, three hours. Requisite: course 10 or 51A or Art History 20. Study of development of art and architecture of Greek world from middle of 4th century BC, including transmittal of Greek art forms to Romans. P/NP or letter grading.

**M153F. Etruscan Art and Archaeology. (4)** (Same as Art History M113A.) Lecture, three hours. Requisite: course 20 or 51B or Art History 20. Arts of Italic peninsula from circa 1000 BC to end of Roman Republic. P/NP or letter grading.

**M153G. Roman Art and Archaeology. (4)** (Same as Art History M113B.) Lecture, three hours. Requisite: course 20 or 51B or Art History 20. Art and architecture of Rome and its Empire from circa 300 BC to AD 300. P/NP or letter grading.

**M153H. Late Roman Art. (4)** (Same as Art History M113C.) Lecture, three hours. Requisite: course 20 or 51B or Art History 20. Art of Roman Empire from 2nd through 4th century (AD). P/NP or letter grading.

**M153I-M153J-M153K. Classical Archaeology. (4-4-4)** (Same as Art History M114A-M114B-M114C.) Lecture, three hours. Requisite: one course from 10, 20, 51A, 51B, Art History 20, or History 1A. Knowledge of Greek and Latin not required. General introduction to study of Aegean, Greek, and Roman architecture, sculpture, and painting. May be repeated for credit with department consent. P/NP or letter grading.

**M153I.** Greco-Roman Architecture; **M153J.** Greco-Roman Sculpture; **M153K.** Greco-Roman Painting.

**M153L. Late Antique Art and Architecture. (4)** (Same as Art History CM115A.) Lecture, three hours. Art and architecture of late Roman Empire and early Christian world. P/NP or letter grading.

**160. Legal Advocacy in Ancient World. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 10 or 20. Study of theory and practice of legal advocacy in classical Greece and Rome. May be repeated for credit. Letter grading.

**161. Women's History in Ancient Mediterranean. (4)** Lecture, three hours. Overview of approaches to problem of writing women's history in ancient Mediterranean world. Topics include law, medicine, work, religion (pagan, Christian, Jewish), and literature, with particular attention to themes of war, slavery, and sex trafficking. Exercises train students in critical use of primary documents and ancient sources, including inscriptions and other forms of material culture. P/NP or letter grading.

**162. Reception of Ancient Myth. (4)** Lecture, three hours. Traces reading and re-use of myth from antiquity to present, including global receptions in areas such as literature, philosophy, art, film, and politics. May be repeated once for credit with topic change. P/NP or letter grading.

**163. Ovid and Consequences. (4)** Lecture, three hours. Study of Ovid's *Metamorphoses* and persistence and extent of Roman poet's influence on subsequent literature, art, and film. Close analysis of Ovid's seminal text before turning to poem's classical, medieval, Renaissance, and modern imitations, from Apuleius to Shakespeare to Picasso and beyond. P/NP or letter grading.

**164. Spectacle Entertainments of Ancient Rome. (4)** Lecture, three hours. Requisite: course 20. Study of culture and politics of urban entertainment in ancient Rome, including gladiatorial competitions, chariot races, and theatrical productions. P/NP or letter grading.

**165. Ancient Athletics. (4)** Lecture, three hours. Requisite: course 10 or History 1A. Study of ancient Greek and Roman athletics and their connections with religion, politics, literature, and art. P/NP or letter grading.

**166A. Greek Religion. (4)** Lecture, three hours. Requisite: course 10 or 30. Study of religion of ancient Greeks. P/NP or letter grading.

**166B. Roman Religion. (4)** Lecture, three hours. Requisite: course 20. Study of religion of ancient Romans. P/NP or letter grading.

**M167. Magic in Ancient World. (4)** (Same as Ancient Near East M167.) Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 10 or 20. Exploration of art of influencing natural course of

events by occult means as practiced in ancient world at large. Coverage of beliefs in supernatural forces, rites aimed at controlling these forces effectively, and character and social roles of ritual experts in various cultures of ancient world. Source material includes types of magical spells, literary texts about magic and magicians, and artifacts such as amulets and ritual implements. P/NP or letter grading.

**168. Comparative Mythology. (4)** Lecture, three hours. Requisites: course 30, or GE Clusters 30A, 30B, and 30CW. Religious, mythical, and/or historical traditions of Greece and Rome compared with each other and with other traditions worldwide. P/NP or letter grading.

**169. Sex in Ancient World. (4)** Lecture, three hours. Requisite: course 10 or 20 or History 1A. Examination of sex and gender systems of Greek and Roman cultures in ancient Mediterranean world. What Greek and Roman sex/gender systems were, how they changed over time, and difference it makes. Readings include both modern theories about sex and history as foundation for course and broad range of ancient texts in translation. P/NP or letter grading.

**M170C. Power and Imagination in Byzantium. (4)** (Same as History M116C.) Lecture, three hours; discussion, one hour (when scheduled). Requisites: History 116A, 116B. Designed for juniors/seniors. Study of relations of authority and intelligentsia in highly centralized Byzantine Empire. Topics include criticism of emperor, iconoclasm, intellectual freedom, attempts at reform. Letter grading.

**171. Black Classicism: African American Reception of Classical Antiquity. (4)** Lecture, three hours. Study of reception of Greco-Roman antiquity, especially literature, by Black intellectuals, poets, novelists, and artists. Readings pair ancient texts with works by major African American writers (Dove, Ellison, Morrison) alongside scholarly discourse on *Classica Africana*. Also covers aspects of history of discipline of classics in U.S. with focus on Black experience. P/NP or letter grading.

**175. Classics in Central and South America. (4)** Lecture, three hours. Introduction to topics in classical reception through investigation of influence of Greco-Roman poetry on poetry of Central and South America of colonial period and beyond. From Homer to Vergil, poets of classical antiquity established robust tradition of epic with well-established literary tropes and nationalistic aims, cultural voice contributing to development of unified sense of national identity. Classical definition of epic as genre and sense of epic as vehicle for affirming and questioning national identity persisted well beyond antiquity. Investigation of one such area by examining epic traditions of Central and South America, (mediated through European models that preceded and helped shape them) and their conscious engagement with classical tradition, through examples of both neo-Latin productions and vernacular poetry in Spanish and Portuguese. P/NP or letter grading.

**180. Introduction to Classical Linguistics. (4)** Lecture, three hours. Requisite: Greek 3 or Latin 3. Linguistic approach to Greek and Latin, including Indo-European background, etymology, pronunciation, alphabets, sociolinguistics (dialects, bilingualism), and applications to classical literature. P/NP or letter grading.

**185. Origins and Nature of English Vocabulary. (5)** Lecture, three hours. Origins and nature of English vocabulary, from Proto-Indo-European prehistory to current slang. Topics include Greek and Latin component in English (including technical terminology), alphabet and English spelling, semantic change and word formation, vocabulary in literature and film. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. In-

dividual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Classics. (1)** Seminar, one hour. Limited to juniors/seniors. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for credit. P/NP grading.

**191. Capstone Seminar: Classics. (5)** Seminar, three hours. Requisites: courses 10, 20, at least four upper-division major courses. Limited to declared junior/senior departmental majors; minors may be admitted with consent of instructor. Topical research seminar on important themes, periods, genres of ancient Greek and Roman world. Intended to provide students with opportunity for serious engagement with research in discipline under close faculty supervision. Readings, discussions, oral presentations, and final research paper or project. May be repeated for credit. Letter grading.

**193. Journal Club Seminars: Classics. (1)** Seminar, one hour. Limited to undergraduate students. Group discussion of readings and topics selected from current issues in classics and related disciplines. May be repeated for credit. P/NP grading.

**197. Individual Studies in Classics. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A-198B. Honors Research in Classics. (2-5)** Limited to junior/senior departmental honors program students. May be repeated for credit. Individual contract required. **198A.** Tutorial, six hours. Requisite: course 191. Tutorial under direct supervision of faculty member. Research and development of thesis outline in preparation of paper to be completed in course 198B. In Progress grading. **198B.** Tutorial, 15 hours. Requisite: course 198A. Completion of final research thesis under direct supervision of faculty member. Letter grading.

**199. Directed Research in Classics. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. History of Classical Scholarship. (4)** Lecture, four hours. S/U or letter grading.

**201B. Topics in Ancient History: Roman World. (2 or 4)** Seminar, three hours. Introduction to basic methods and approaches to study of Roman history by intensive examination of selected topics, including readings of ancient texts and modern scholarship. S/U or letter grading.

**M218. Paleography of Latin and Vernacular Manuscripts, 900 to 1500. (4)** (Same as English M215, French M210, and History M218.) Lecture, three hours; discussion, two hours. Introduction to history of Latin and vernacular manuscript book from 900 to 1500 to (1) train students to make informed judgments with regard to place and date of origin, (2) provide training in accurate reading and transcription of later medieval scripts, and (3) examine manuscript book as witness to changing society that produced it. Focus on relationship between Latin manuscripts and vernacular manuscripts with regard to their respective presentation of written texts. S/U or letter grading.

**220A. Interfaces: Transmission of Roman Literature. (2 or 4)** Seminar, three hours. Examination of transmission of Latin classical literature in late antiquity, Middle Ages, and Renaissance to understand processes by which Latin literature has been preserved. S/U (2-unit course) or letter (4-unit course) grading.

**244. Textual Criticism: Studies in Preparation of Critical Edition of Greek and/or Latin Texts. (2 or 4)** Seminar, three hours. Different steps required in preparation of critical edition of ancient text: localizing manuscripts; collation; establishing stemma; selecting right reading on basis of knowledge of context, of language of author, and of sources; emendations; formulation of *apparatus criticus* and *apparatus fontium*. S/U (2-unit course) or letter (4-unit course) grading.

**245. Computing and Classics. (2 or 4)** Seminar, three hours. Introduction to processing and analysis of digitized texts of classical authors for purposes of literary history and criticism. S/U (2-unit course) or letter (4-unit course) grading.

**246. Greek and Latin Meter. (2 or 4)** Seminar, three hours. Comprehensive study of meter as it functions in classical poetry. S/U (2-unit course) or letter (4-unit course) grading.

**250. Topics in Greek and Roman Culture and Literature. (2 or 4)** Seminar, three hours. Interdisciplinary study on topics of ancient Greek and Roman culture and/or literature. May be repeated for credit with topic change. S/U or letter grading.

**251A. Seminar: Classical Archaeology—Aegean Bronze Age. (2 or 4)** Seminar, three hours. S/U or letter grading.

**251B. Seminar: Classical Archaeology—Greco-Roman Architecture. (2 or 4)** Seminar, three hours. Studies in style and iconography of various periods of Aegean, Greek, and Roman architecture. S/U (2-unit course) or letter (4-unit course) grading.

**251C. Seminar: Classical Archaeology—Greco-Roman Sculpture. (2 or 4)** Seminar, three hours. Studies in style and iconography of various periods of Aegean, Greek, and Roman sculpture. S/U (2-unit course) or letter (4-unit course) grading.

**251D. Seminar: Classical Archaeology—Greco-Roman Painting. (2 or 4)** Seminar, three hours. Studies in style and iconography of various periods of Aegean, Greek, and Roman painting. May be repeated for credit with consent of instructor. S/U or letter grading.

**C251E. Archaeological Field Techniques. (12)** Off-campus field archaeology, 36 hours. Preparation: at least one classical archaeology course. Training in techniques of archaeological research in field, including topographic and area survey, mapping and recording artifacts, excavation and data analysis. Conducted in Mediterranean area. Concurrently scheduled with course C151E. S/U or letter grading.

**252. Topography and Monuments of Athens. (2 or 4)** Lecture, two or four hours. Detailed studies in topography and monuments of Athens, combining evidence of literature, inscriptions, and actual remains. S/U or letter grading.

**253. Topography and Monuments of Rome. (2 or 4)** Lecture, two or four hours. Detailed studies in topography and monuments of ancient Rome, combining evidence of literature, inscriptions, and actual remains. S/U or letter grading.

**260. Topics in Ancient Religion. (2 or 4)** Seminar, three hours. S/U or letter grading.

**287. Graduate Colloquium in Classical Literature. (2)** Seminar, three hours. Survey of basic methods of and approaches to classical scholarship, including textual criticism, literary interpretation and theory, hermeneutics, interdisciplinary studies, and computer applications to classics. Emphasis varies from year to year, depending on instructor(s). May be repeated for credit with topic change. S/U grading.

**288. Literary Theory. (2 or 4)** Discussion, three hours. Designed for graduate students. Introduction to chief texts in literary theory and criticism for readers of classical literature, with application to classical texts. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Classics. (2)** Seminar, two hours. Normally to be taken by all graduate students in term before or during their first assignments as teaching assistants. Seminar/workshop in various pedagogical issues and strategies in preparation for teaching classical civilization, Greek, and/or Latin undergraduate courses. Readings and group discussions in topics related to teaching in field of classics. May not be applied toward MA or PhD course requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597. Study for MA Comprehensive Examination or PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. Research for PhD Dissertation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Greek

### Lower-Division Courses

**1. Elementary Greek. (5)** Lecture, three hours; discussion, two hours. P/NP or letter grading.

**2. Elementary Greek. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: course 1. P/NP or letter grading.

**3. Elementary Greek. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: course 2. P/NP or letter grading.

**8A-8B-8C. Elementary Modern Greek. (4-4-4)** Lecture, three hours. Course 8A is enforced requisite to 8B, which is enforced requisite to 8C. Introductory modern Greek sequence, with emphasis on spoken modern Greek. P/NP or letter grading.

**8G. Reading Scholarly Modern Greek. (4)** Lecture, two and one half hours. Designed for students who want to develop literacy competence in order to read modern Greek scholarly texts. No prior knowledge of modern Greek is required. Covers grammatical concepts and forms necessary to comprehend written academic Greek. Students gain familiarity with various academic genres in Greek (among others, articles, chapters, reviews, lecture transcripts). Emphasis on grammar and reading strategies that enable location, selection, and comprehension of texts central to research needs. Students are familiarized with major stylistic features of contemporary academic modern Greek, and consolidate their competence through reading, translating, and writing activities. Familiarization with basic aspects of modern Greek life and culture. P/NP or letter grading.

**9A-9B-9C. Intermediate Modern Greek. (4-4-4)** Lecture, three hours. Enforced requisite: course 8C. Course 9A is enforced requisite to 9B, which is enforced requisite to 9C. Intermediate-level program in modern Greek language study from communicative and task-based approach. Continued development of student understanding and use of Greek syntax and morphology through oral and written activities, reading, and listening. Students master basic communication skills, communicate in everyday real-life situations, comprehend simple passages, announcements, and advertisements, master basic rules of modern Greek grammar and syntax, read fluently, and write accurately. P/NP or letter grading.

**15. Elementary Modern Greek. (12)** Lecture, 18 to 19 hours. Eight-week intensive introduction to principles of speaking, reading, and writing modern (demotic) Greek. Offered in summer only. P/NP or letter grading.

**16. Intensive First-Year Greek. (12)** Lecture, 19 hours. Eight-week intensive introduction to Greek language equivalent to courses 1, 2, and 3. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Intermediate Greek. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 3 or 16. Formal review of Greek grammar and syntax and development of skills in reading original texts of Greek prose. Readings selected to introduce literature and culture of ancient Greece. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Readings in Greek Prose and Poetry. (4)** Lecture, three hours. Requisite: course 20. Introduction to developing skills of reading longer, continuous passages of original Greek prose and/or poetry texts, with attention to literary and cultural background. Course is normally requisite to other courses in Greek 100 series. May be repeated for credit with change of assigned readings and with consent of instructor. P/NP or letter grading.

**101A. Homer: *Odyssey*. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**101B. Homer: *Iliad*. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**102. Lyric Poets. (4)** Lecture, three hours. Requisite: course 100. Selections from Archilochus to Bacchylides. P/NP or letter grading.

**103. Aeschylus. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**104. Sophocles. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**105. Euripides. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**106. Aristophanes. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**107. Hesiod. (4)** Lecture, three hours. Requisite: course 100. Reading of *Theogony* and excerpts from *Works and Days*, with emphasis on Hesiod's place in Greek literature and his role in transmission of Greek mythology. P/NP or letter grading.

**110. Study of Greek Prose. (4)** Lecture, three to four hours. Requisite: course 100. Work in sight reading and grammatical analysis of Attic prose texts; writing Attic prose. P/NP or letter grading.

**111. Herodotus. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**112. Thucydides. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**113. Attic Orators. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**115. Xenophon. (4)** Lecture, three hours. Requisite: course 100. Reading of one major work of Xenophon—*Memorabilia*, *Cyropaedia*, *Anabasis*, *Hellenica*, or *Oeconomicus*—in Greek. P/NP or letter grading.

**121. Plato. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**122. Plato: *Republic*. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**123. Aristotle: *Poetics and Rhetoric*. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**124. Aristotle: *Ethics*. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**130. Readings in New Testament. (4)** Lecture, three hours. Requisite: course 3. P/NP or letter grading.

**131. Readings in Later Greek. (4)** Lecture, three hours. Requisite: course 100. Topics vary from year to year and include Longinus, *On Sublime*; Marcus Aurelius; Arrian; Second Sophistic; Plutarch; later epic; epigram; epistolographi Graeci. P/NP or letter grading.

**132. Survey of Byzantine Literature. (4)** Lecture, three hours. Requisite: course 100. Readings based on (1) *Anthology of Byzantine Prose*, ed. Nigel Wilson and (2) *Oxford Book of Medieval and Modern Greek Verse*, ed. C.A. Trypanis, or if unavailable, *Poeti bizantini*, ed. R. Cantarella. In addition, necessary historical and cultural background provided by readings and lectures. P/NP or letter grading.

**133. Readings in Byzantine Literature. (4)** Lecture, three hours. Requisite: course 132. Topics vary from year to year and include Procopius, Agathias, Michael Psellus, Alexiad of Anna Comnena, and Digenis Akritas. P/NP or letter grading.

**140. Topics in Greek Language and Culture. (4)** Seminar, three hours. Requisite: course 9C. Covers topics in modern Greek language, culture, and history. Assigned materials are predominantly in modern Greek. Topics and geographical focus are diverse, ranging from literature and cinema to culture and history of Greek America. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Greek. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Greek. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

### Graduate Courses

**200A-200B-200C. History of Greek Literature. (4-4-4)** Lecture, three hours. Lectures on history of Greek literature, supplemented by reading of Greek texts in original language. Each course may be taken independently for credit. S/U or letter grading.

**201A-201B. Homer: *Iliad*. (2 or 4 each)** Lecture, three hours. Course 201A is requisite to 201B. S/U (2-unit course) or letter (4-unit course) grading.

**202A-202B. Homer: *Odyssey* and Epic Cycle. (2 or 4 each)** Lecture, three hours. Course 202A is requisite to 202B. S/U (2-unit course) or letter (4-unit course) grading.

**203. Hesiod. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**204. Homeric Hymns. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**205. Aeschylus. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**206A-206B. Sophocles. (2 or 4 each)** Lecture, three hours. Course 206A is requisite to 206B. S/U (2-unit course) or letter (4-unit course) grading.

**207A-207B. Euripides. (2 or 4 each)** Lecture, three hours. Course 207A is requisite to 207B. S/U (2-unit course) or letter (4-unit course) grading.

**208A-208B. Aristophanes. (2 or 4 each)** Lecture, three hours. Course 208A is requisite to 208B. S/U (2-unit course) or letter (4-unit course) grading.

**209A-209B. Seminars: Hellenistic Poetry. (2 or 4 each)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**210. Advanced Greek Prose Composition. (4)** Lecture, three hours. Requisite: course 110. S/U or letter grading.

**211A-211B. Herodotus. (2 or 4 each)** Lecture, three hours. Course 211A is requisite to 211B. S/U (2-unit course) or letter (4-unit course) grading.

**212A-212B. Thucydides. (2 or 4 each)** Lecture, three hours. Course 212A is requisite to 212B. S/U (2-unit course) or letter (4-unit course) grading.

**213. Greek Historiography. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**214. Demosthenes. (2 or 4)** Lecture, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**215. Early Greek Orators. (2 or 4)** Seminar, three hours. Studies in works of Antiphon, Andocides, and Lysias. S/U (2-unit course) or letter (4-unit course) grading.

**216. Menander. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**217A-217B. Greek Lyric Poetry. (2 or 4 each)** Seminar, three hours. Each course may be taken independently for credit. S/U (2-unit course) or letter (4-unit course) grading. **217A.** Archaic Lyric. Study of lyric poetry of Archaic period, both choral and monodic, with elegiac and iambic included. **217B.** Pindar and Bacchylides. Study of choral odes of Pindar and Bacchylides, with special attention to conventions of epinician.

**220. Greek Novel. (2 or 4)** Seminar, three hours. Study of Greek romance and its place in Greek literature. Two texts (Chariton: *Chaereas and Callirhoe* and Longus: *Daphnis and Chloe*) studied in some detail. S/U (2-unit course) or letter (4-unit course) grading.

**221. Pre-Socratic Philosophers. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**222A-222B. Plato. (2 or 4 each)** Lecture, three hours. Course 222A is requisite to 222B. S/U (2-unit course) or letter (4-unit course) grading.

**223A-223B. Aristotle. (2 or 4 each)** Lecture, three hours. Course 223A is requisite to 223B. S/U (2-unit course) or letter (4-unit course) grading.

**224. Post-Aristotelian Philosophy. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**226. Imperial Greek Literature. (2 or 4)** Seminar, three hours. Study of Greek literature of Roman Empire with attention to various authors, genres, and themes. S/U or letter grading.

**229. Strengthening Greek. (4)** Seminar, three hours. Grammar review, vocabulary development, and translation skills practice in reading ancient Greek texts across variety of genres and periods. S/U or letter grading.

**240A-240B. History of Greek Language. (2 or 4 each)** Lecture, four hours. S/U or letter grading. **240A.** Linguistic history of classical Greek. **240B.** Requisite: course 240A. Postclassical, medieval, and modern Greek.

**241. Greek Epigraphy. (2 or 4)** Seminar, three hours. Survey of Greek historical inscriptions, chiefly Attic. S/U (2-unit course) or letter (4-unit course) grading.

**242. Greek Dialects and Historical Grammar. (2 or 4)** Lecture, three hours. Linguistic situation in early Greece. Readings in classical Greek dialectal texts. Greek grammar in context of common Greek and Indo-European linguistics. S/U or letter grading.

**243. Mycenaean Greek. (2 or 4)** Seminar, three hours. Script, language, and grammar of Linear B inscriptions; their relevance to ancient Greek linguistic and cultural history. S/U or letter grading.

**244. Greek Papyrology. (2 or 4)** Seminar, three hours. Preparation: reading knowledge of Greek. Introduction to Greek papyri, considered both as historical documents and as carriers of literature. S/U (2-unit course) or letter (4-unit course) grading.

**245. Greek Palaeography. (2 or 4)** Seminar, three hours. Studies in development of book hand in Greek manuscripts earlier than invention of printing. S/U (2-unit course) or letter (4-unit course) grading.

**250. Topical Studies of Ancient Greece. (2 or 4)** Lecture, three hours. Advanced study of some aspect of ancient Greek language, literature, and/or culture. May be repeated for credit with topic change. S/U (2-unit course) or letter (4-unit course) grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597. Study for MA Comprehensive Examination or PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. Research for PhD Dissertation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Latin

### Lower-Division Courses

**1. Elementary Latin. (5)** Lecture, three hours; discussion, two hours. P/NP or letter grading.

**1G. Elementary Latin for Graduate Students. (No credit)** Lecture, eight hours. Concurrently scheduled with course 14. No grading.

**2. Elementary Latin. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: course 1. P/NP or letter grading.

**3. Elementary Latin. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: course 2 or 14. P/NP or letter grading.

**14. Elementary Latin: Intensive. (10)** Lecture, 10 hours. Declensions of nouns and adjectives, conjugations in indicative mood, and primary uses of subjunctive mood. Emphasis on development of ability to read easy selections of classical prose. P/NP or letter grading.

**16. Intensive First-Year Latin. (12)** Lecture, 19 hours. Eight-week intensive introduction to Latin language equivalent to courses 1, 2, and 3. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Elementary Latin: Comprehensive Review. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 3 or 16. Formal review of Latin grammar and syntax and development of skills in reading original texts of Latin prose. Readings selected to introduce literature and culture of ancient Rome. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Intermediate Latin: Introduction to Reading Latin (4)** Lecture, three hours. Enforced requisite: course 20 (may be taken concurrently). Introduction to developing skills of reading longer, continuous passages of original Latin prose and/or poetry texts, with attention to literary and cultural background. Course is requisite to advanced reading courses. May be repeated for credit twice with change of assigned readings and with consent of instructor. P/NP or letter grading.

**101. Plautus. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**102. Terence. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**103. Lucretius. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**104. Ovid. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**105A. Beginning Vergil: Selections from *Aeneid* I-VI. (4)** Lecture, three hours. Requisite: course 100. Reading of one or more books from first half of *Aeneid*, designed especially for students with only limited experience in reading Latin poetry. May be repeated for credit with change in readings and consent of instructor. P/NP or letter grading.

**105B. Advanced Vergil. (4)** Lecture, three hours. Requisite: course 105A. Reading and discussion of Vergil's *Eclogues*, *Georgics*, and/or second half of *Aeneid*. May be repeated for credit with change in readings. P/NP or letter grading.

**106. Catullus. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**107. Horace. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**108. Roman Elegy. (4)** Lecture, three hours. Requisite: course 100. Selections from Catullus, Tibullus, and Propertius. P/NP or letter grading.

**109. Roman Satire. (4)** Lecture, three hours. Requisite: course 100. Readings from author(s) of Roman satire, including Horace, Persius, and Juvenal, or related satiric texts. May be repeated for credit with change in readings and consent of instructor. P/NP or letter grading.

**110. Study of Latin Prose. (4)** Lecture, three hours. Requisite: course 100. Work in sight reading and grammatical analysis of classical prose texts; writing of classical prose. P/NP or letter grading.

**111. Livy. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**112. Tacitus. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**113. Cicero: Orations. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**114. Roman Epistolography: Cicero and Pliny. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**115. Caesar. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**116. Roman Novel. (4)** Lecture, three hours. Requisite: course 100. Reading and discussion of either Petronius' *Satyricon* or Apuleius' *Metamorphoses* and

development of genre of prose novel in antiquity. May be repeated for credit with change in author and text. P/NP or letter grading.

**117. Sallust. (4)** Lecture, three hours. Requisite: course 100. P/NP or letter grading.

**118. Seneca. (4)** Lecture, three hours. Requisite: course 100. Selection of Seneca's works read in Latin. P/NP or letter grading.

**119A. Readings in Roman Prose. (4)** Lecture, three hours. Requisite: course 100. Readings of selected Roman prose author(s). Topics may vary from year to year and may be organized in terms of chronology (Republican or imperial), literary genre (Roman biography, antiquarian learning, or science), and/or theme. May be repeated for credit with topic change. P/NP or letter grading.

**119B. Readings in Roman Poetry. (4)** Lecture, three hours. Requisite: course 100. Readings of selected Roman poetry author(s). Topics may vary from year to year and may be organized in terms of chronology (Republican or imperial), epic, lyric, elegy, and/or theme. May be repeated for credit with topic change. P/NP or letter grading.

**120. Vulgate. (4)** Lecture, three hours. Requisite: course 3. Reading of selected chapters of St. Jerome's translation of Bible, with emphasis on unclassical features of Latin. P/NP or letter grading.

**121. Patristic Texts. (4)** Lecture, three hours. Requisite: course 100. Reading and discussion of one or more Latin patristic texts (especially works of Ambrose, Augustine, and/or Jerome), with emphasis on specific features of patristic, as opposed to classical, Latin. P/NP or letter grading.

**130. Introduction to Postclassical Latin. (4)** Lecture, three hours. Basic competence in classical Latin required. Readings in postclassical Latin. P/NP or letter grading.

**131. Postclassical Latin Prose. (4)** Lecture, three hours. Advanced readings of selected texts in postclassical Latin prose. P/NP or letter grading.

**133. Postclassical Latin Poetry. (4)** Lecture, three hours. Advanced readings of selected texts in postclassical Latin poetry. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Latin. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Latin. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A-200B-200C. History of Latin Literature (4-4-4).** Lecture, three hours. Lectures on history of Latin literature, supplemented by reading of Latin texts in original language. Each course may be taken independently for credit. S/U or letter grading.

**201. Roman Epic Tradition. (2 or 4)** Seminar, three hours. Close study of one epic poet other than Vergil (e.g., Ennius, Lucan, Valerius Flaccus, Statius, Silius Italicus), with attention to literary tradition of epic. May be repeated for credit with topic change. S/U (2-unit course) or letter (4-unit course) grading.

**202. Seminar: Catullus. (2 or 4)** Seminar, three hours. Detailed consideration of entire Catullan corpus. S/U (2-unit course) or letter (4-unit course) grading.

**203A. Elegiac Poetry. (2 or 4)** Lecture, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**203B. Propertius. (2 or 4)** Lecture, three hours. Course 203A is not requisite to 203B. S/U (2-unit course) or letter (4-unit course) grading.

**204A-204B. Vergil's Aeneid. (2 or 4 each)** Lecture, three hours. Course 204A is requisite to 204B. S/U (2-unit course) or letter (4-unit course) grading.

**205A. Seminar: Vergil's Bucolics. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**205B. Seminar: Vergil's Georgics. (2 or 4)** Seminar, three hours. Course 205A is not requisite to 205B. Close reading of Vergil's text; careful evaluation of influential criticism on poem, much of it recent; examination of work's place within tradition of rural poetry. S/U (2-unit course) or letter (4-unit course) grading.

**206. Horace. (2 or 4)** Lecture, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**207. Roman Comedy. (2 or 4)** Seminar, three hours. Survey of history of Roman comedy. S/U (2-unit course) or letter (4-unit course) grading.

**208. Ovid. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**209. Seminar: Roman Satire. (2 or 4)** Seminar, three hours. Detailed study of one individual satirist, with attention to his position in development of satirical genre in Roman literature. Choice of author varies from year to year. Close study of text, of characteristics of writer as social critic and artist, and of contemporary literary and social environment. S/U (2-unit course) or letter (4-unit course) grading.

**210. Advanced Latin Prose Composition. (4)** Lecture, three hours. Requisite: course 110. S/U or letter grading.

**211A-211B-211C. Seminars: Roman Historians. (2 or 4 each)** Seminar, three hours. Study of considerable portions of writings of following historians. Each course may be taken independently for credit. S/U (2-unit course) or letter (4-unit course) grading. **211A.** Sallust; **211B.** Livy; **211C.** Tacitus.

**214. Ancient Biography: Roman Lives. (2 or 4)** Seminar, three hours. Study of biography in ancient Rome. Literary survey or focused readings on lives of Cornelius Nepos, Suetonius, Tacitus, or imperial chroniclers of 4th century CE. S/U (2-unit course) or letter (4-unit course) grading.

**215. Seminar: Roman Novel. (2 or 4)** Seminar, three hours. Works such as Petronius' *Satyricon* and Apuleius' *Metamorphoses*: study of literary problems. May be repeated for credit with topic change. S/U (2-unit course) or letter (4-unit course) grading.

**216. Roman Rhetoric. (2 or 4)** Seminar, three hours. Close study of one rhetorical text (e.g., *Rhetorica ad Herennium*, Cicero's *de Oratore*, Seneca's *Controversiae* or *Suasoriae*, Quintilian's *Institutio*), with attention to its place in rhetorical tradition. May be repeated for credit with topic change. S/U (2-unit course) or letter (4-unit course) grading.

**220. Cicero's Orations. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**221A. Cicero's Philosophical Works. (2 or 4)** Lecture, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**221B. Cicero: De Natura Deorum. (2 or 4)** Lecture, three hours. Course 221A is not requisite to 221B. S/U (2-unit course) or letter (4-unit course) grading.

**222. Seminar: Roman Stoicism. (2 or 4)** Seminar, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**223. Lucretius. (2 or 4)** Lecture, three hours. S/U (2-unit course) or letter (4-unit course) grading.

**224. Seneca. (2 or 4)** Seminar, three hours. Detailed study of one work of prose or poetry by younger Seneca. May be repeated for credit with topic change. S/U (2-unit course) or letter (4-unit course) grading.

**229. Strengthening Latin. (4)** Seminar, three hours. Grammar review, vocabulary development, and translation skills practice in reading Latin texts across variety of genres and periods. S/U or letter grading.

**231A-231B. Seminars: Medieval Latin. (2 or 4 each)** Seminar, three hours. Preparation: at least one upper-division Latin course. Course 231A is not requisite to 231B. Studies in various areas of language and literature of medieval Latin. May be repeated for credit with consent of instructor. S/U (2-unit course) or letter (4-unit course) grading.

**232. Vulgar Latin. (2 or 4)** Lecture, three hours. History and characteristics of popular Latin; its development into early forms of Romance languages. S/U or letter grading.

**235. Late Latin Poetry. (2 or 4)** Seminar, three hours. Close study, with attention to literary and historical background, of work of one or several poets who flourished between death of Ovid and fall of Roman Empire. May be repeated for credit with change in author. S/U or letter grading.

**236. Late Latin Prose. (2 or 4)** Seminar, three hours. Close study, with attention to literary and historical background, of work of one or several prose authors who flourished between death of Tacitus and fall of Roman Empire. May be repeated for credit with change in author. S/U or letter grading.

**240. History of Latin Language. (2 or 4)** Lecture, three hours. Development of Latin from earliest monuments until its emergence in Romance languages. S/U or letter grading.

**242. Italic Dialects and Latin Historical Grammar. (2 or 4)** Lecture, three hours. Linguistic situation in early Italy. Readings in Oscan, Umbrian, and early Latin texts. Latin grammar in context of Italic and Indo-European linguistics. S/U or letter grading.

**243. Seminar: Latin Palaeography. (2 or 4)** Seminar, three hours. Studies in development of book hand in Latin manuscripts earlier than invention of printing. S/U (2-unit course) or letter (4-unit course) grading.

**245. Neo-Latin. (2 or 4)** Seminar, three hours. Preparation: at least two upper-division Latin courses. Requisite: course 100. Survey of texts by one or more authors from Renaissance to present, written on related topics. S/U or letter grading.

**250. Topical Studies of Ancient Rome. (2 or 4)** Seminar, three hours. Advanced study of some aspect of Latin language or literature or Roman culture. May be repeated for credit with topic change. S/U (2-unit course) or letter (4-unit course) grading.

**495. College Teaching of Latin. (2)** Seminar, to be arranged. Preparation: appointment as teaching assistant. Methodology of instruction in conjunction with classroom practice. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597. Study for MA Comprehensive Examination or PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. Research for PhD Dissertation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## CLUSTER PROGRAM

College of Letters and Science

A265 Murphy Hall

Box 951571

Los Angeles, CA 90095-1571

Cluster Program

424-442-4552

Anthony R. Friscia, PhD, *Director*  
Vilma Ortiz, PhD, *Chair*



## Faculty Committee

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Anthony R. Friscia, PhD (*Integrative Biology and Physiology*)

Sarah L. Gibbons, PhD (*Society and Genetics*)

Paul T. Hsu, MPH, PhD (*Epidemiology*)

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Michelle A. Rensel, PhD (*Society and Genetics*)

Steven J. Strossner, PhD (*Communication*)

Luke B. Yarbrough, PhD (*Near Eastern Languages and Cultures*)

## Overview

Cluster courses are an option for satisfying both general education and Writing II requirements. Clusters are yearlong, collaboratively taught, interdisciplinary courses that focus on a topic of timely importance, such as the global environment or interracial dynamics. The courses are taught by some of the most distinguished UCLA faculty members and seasoned graduate students. During fall and winter quarters, students attend lecture courses and small discussion sections and/or laboratories. In spring quarter, the same students enroll in one of a number of satellite seminars dealing with topics related to the cluster theme.

Freshman clusters are designed to strengthen the writing, quantitative reasoning, critical thinking, and information literacy skills that students need to excel at UCLA. At the conclusion of the entire yearlong cluster, students complete 40 to 50 percent of their general education course requirements (if they maintain a D- or better each quarter) and fulfill the Writing II requirement (if they earn a C or better in spring quarter). Cluster students are eligible for three terms of honors credit, with the spring quarter seminar granting Honors Collegium credit.

For the current cluster course offerings and general education credit, refer to the [Cluster Program](#) website.

## Clusters

### Lower-Division Courses

**M1A-M1B-M1CW. Food: Lens for Environment and Sustainability. (6-6-6)** (Same as Environment M1A-M1B-M1CW.) Course M1A is enforced requisite to M1B, which is enforced requisite to M1CW. Limited to first-year freshmen. **M1A-M1B.** Lecture, three hours; discussion, two hours. Food as lens for local and global environmental and sustainability issues. Integration of environmental, social, economic, and technological solutions for fair, sustainable, and healthy food production, food security, and access. Focus on human impacts on Earth's biological and physical systems, including how food production and consumption contributes to, and is impacted by, global problems, including climate change, pollution, and overpopulation. Laboratory exercises included in discussions. P/NP or letter grading. **M1CW.** Special Topics. Seminar, three hours. Enforced requisite: course M1B. Examination of specialized environmental and sustainability topics as they relate to food, including air, water, biodiversity, climate change, food access, food security, and health. Satisfies Writing II requirement. Letter grading.

**10A-10B-10CW-10WX. Data, Justice, and Society. (6-6-6-6)** Course 10A is requisite to 10B, which is requisite to 10CW or 10WX. Limited to first-year freshmen. **10A.** Lecture, three hours; discussion, two hours. Data-based computation (i.e., algorithms, artificial intelligence, predictive modeling) increasingly play a dominant role in shaping everyday experiences of culture and society. Data and data analytics define everything from social relations and public policy to juridical status and market logistics. Introduction to politics, ethics, applications, history, critiques, and social impact of data. Introduction to how data intersects with philosophical inquiries about justice, (in)equality, power, and freedom. Students obtain deeper historical and critical view of data in society, while gaining understanding of differing and diverse cultural frames of analysis. P/NP or letter grading. **10B.** Lecture, three hours; discussion, two hours. Data-based computation (i.e., algorithms, artificial intelligence, predictive modeling) increasingly play a dominant role in shaping everyday experiences of culture and society. Data and data analytics define everything from social relations and public policy to juridical status and market logistics. Study pursues thinking about ethics and justice in a data-driven society but focus on concrete case studies. Students gain critical understanding of technology sector, and also learn of community-engaged models of deploying data skills for social justice. P/NP or letter grading. **10CW.** Special Topics. Seminar, three hours. In-depth examination of the politics, ethics, applications, history, critiques, and social impact of data. Further review, analysis, and discussion of how data technologies either impede or work toward social justice. Study continues to provide guidance on honing writing skills in order to produce excellent college essays. Satisfies Writing II requirement. Letter grading. **10WX.** Special Topics. Seminar, three hours. Community-engaged learning course with in-depth examination of the politics, ethics, applications, history, critiques, and social impact of data. Further review, analysis, and discussion of how data technologies either impede or work toward social justice. Study continues to provide guidance on honing writing skills in order to produce excellent college essays. Satisfies Writing II requirement. Letter grading.

**20A-20B-20CW. Race and Indigeneity in U.S. (6-6-6)** Course 20A is enforced requisite to 20B, which is enforced requisite to 20CW. Limited to first-year freshmen. **20A-20B.** Lecture, three hours; discussion, two hours. Examination of nature and meaning of race in American society through study of history, literature, and law. Consideration, among other topics, of construction of race as social and cultural category among two or more groups and exploration of ways in which race has shaped understanding of American citizenship. P/NP or letter grading. **20CW.** Special Topics. Seminar, three hours. Enforced requisite: course 20B. Consideration of how experience, debates, and issues of race are represented and understood in historical, legal, cinematic, and literary contexts. Satisfies Writing II requirement. Letter grading.

**21A-21B-21CW. History of Modern Thought. (6-6-6)** Course 21A is enforced requisite to 21B, which is enforced requisite to 21CW. Limited to first-year freshmen. Letter grading. **21A-21B.** Lecture, three hours; discussion, two hours. Introduction to key issues in humanities and social sciences through reading of prominent social theories of past four centuries. Consideration of writers from Rousseau and Wollstonecraft to Foucault and Beauvoir in historical context and from perspectives of academic specialties for which their work is fundamental. **21CW.** Special Topics. Seminar, three hours. Enforced requisite: course 21B. Examination of cross-section of classical and modern social theories and debates that shape them. Satisfies Writing II requirement.

**22A-22B-22CW. Toward World Economy: Perils and Promise of Globalization. (5-5-5)** Course 22A is enforced requisite to 22B, which is enforced requisite to 22CW. Limited to first-year freshmen. Letter grading. **22A-22B.** Lecture, three hours; discussion, two hours. Exploration of causes and mechanisms of globalization as well as its consequences. Critical examination of globalization theories, international institutions of trade, finance, governance, and overall impact of globalization on human society. **22CW.** Special Topics.

Seminar, three hours. Enforced requisites: course 22B, and English Composition 3 or 3H or English as a Second Language 36. Topics may include global governance, development, and health. Satisfies Writing II requirement.

**23A-23B-23CW. Inside Performing Arts: Interdisciplinary Exploration of Performance in Society and Culture. (5-5-5)** Course 23A is enforced requisite to 23B, which is enforced requisite to 23CW. Limited to first-year freshmen. Letter grading. **23A-23B.** Lecture, four hours; discussion, two hours. Introduction to historical development and evolution of performing arts, aesthetic theories and practices, and political, social, and cultural contexts within which performance has evolved. **23CW.** Special Topics. Seminar, three hours. Enforced requisites: course 23B, and English Composition 3 or 3H or English as a Second Language 36. Topics include origins and ideas of performance, art and performance, and music as cultural expression. Satisfies Writing II requirement.

**M24A-M24B-M24CW. Work, Labor, and Social Justice in U.S. (6-6-6)** (Same as Labor Studies M1A-M1B-M1CW.) Course M24A is enforced requisite to M24B, which is enforced requisite to M24CW. Limited to first-year freshmen. Letter grading. **M24A-M24B.** Lecture, three hours; discussion, two hours. Exploration of ways in which work has been transformed over last century, impact of this transformation on working people, and role of labor movement as force for social justice. **M24CW.** Special Topics. Seminar, three hours. Enforced requisite: course M24B. Topics include labor law/history, gender, race, and workplace. Satisfies Writing II requirement.

**25A-25B-25CW. Politics, Society, and Urban Culture in East Asia. (6-6-6)** Course 25A is enforced requisite to 25B, which is enforced requisite to 25CW. Limited to first-year freshmen. Letter grading. **25A-25B.** Lecture, three hours; discussion, two hours. Comprehensive exploration of historical evolution of popular East Asian urban culture and interrelationship of East Asian politics, social life, and economic and urban cultural expression. **25CW.** Special Topics. Seminar, three hours. Enforced requisite: course 25B. In-depth examination of issues in historical and contemporary East Asian popular culture. Satisfies Writing II requirement.

**26A-26B-26CW. Poverty and Health in Latin America. (6-6-6)** Course 26A is enforced requisite to 26B, which is enforced requisite to 26CW. Limited to first-year freshmen. Letter grading. **26A.** Lecture, three hours; discussion, two hours. Introduction to social determinants of health, with focus on cultural, historical, socioeconomic, public health, medical, political, and artistic context of poverty in modern Latin America and on different local, national, and regional responses to health inequities. Exploration of major trends and debates that have shaped and continue to define issues related to poverty and health in region. **26B.** Lecture, three hours; discussion, two hours. Enforced requisite: course 26A. Responses to health inequities and possible solutions to promote improved health outcomes and to social determinants of health illustrated through examples of current programs and policies. Major areas for addressing health inequity include governance, community action, social justice and human rights movements, health sector and public health programs, and global priorities. Introduction to tools to promote health, such as service delivery, health workforce, information systems, access to medicines, health systems financing, and health systems governance. **26CW.** Special Topics. Seminar, three hours. Enforced requisite: course 26B. Students meet weekly in small group seminars based on topics related to course theme to allow them to study, discuss, and then generate policy solutions to create more equitable healthcare in Latin America. Focus on one particular area of Latin America or one local Latin American community to reflect field study sites to eventually be offered and serve as preparation for summer field study component. Satisfies Writing II requirement.

**M27A-M27B-M27CW. Global Islam. (6-6-6)** (Formerly numbered 27A-27B-27CW.) (Same as Islamic Studies M27A-M27B-M27CW.) Course M27A is enforced requisite to M27B, which is enforced requisite to M27CW. Introduction to Islam, immensely diverse

global tradition which is second largest religion. Study of Islam and Muslims within framework of study of global religious traditions and emphasis on profound diversity of localized belief and practice found across world. Examination of Islam's evolution across 15 centuries, from late antiquity—when it emerged as localized religion in Central Arabia—to modern era where it is practice from U.S. to Indonesia. Concentration on broad analytical categories in study of religion such as text, culture, history, and prophecy. Students transition to more complex analyses through chronological overview of Islamic history. Study also of case studies of Muslim global networks in arenas such as art, music, literature, and political thought. **M27A-M27B.** Lecture, three hours; discussion, one hour. P/NP or letter grading. **M27CW.** Special Topics. Seminar, three hours. Satisfies Writing II requirement. Letter grading.

**30A-30B-30CW. Never-Ending Stories: Multidisciplinary Perspectives on Myth and Folklore. (6-6-6)** Course 30A is enforced requisite to 30B, which is enforced requisite to 30CW. Limited to first-year freshmen. Letter grading. **30A-30B.** Lecture, three hours; discussion, two hours. Exploration in depth of particular mythological traditions, aspects of storytelling, role of myth in culture, society, and/or art, and contributions of various disciplines to study of myth. **30CW.** Special Topics. Seminar, three hours. Enforced requisite: course 30B. Topics may include myth and modern art (including literature, music, and film), myth and ritual, oral tradition and orality, myth and political ideology, myth and science, hero and trickster, and myths of creation. Satisfies Writing II requirement.

**40A-40B-40CW. Chinese Classics, Their Legacy in East Asia, and Reimagination in Modern Times. (6-6-6)** Course 40A is enforced requisite to 40B, which is enforced requisite to 40CW. Limited to first-year freshmen. Letter grading. **40A-40B.** Lecture, three hours; discussion, two hours. Learning in traditional China was defined through mastery of canon of classic texts that students memorized as part of their education. These classics were also taught in Vietnam, Japan, and Korea, and served to create cultural ties across East Asia. Many more texts came to be considered classics—works of enduring value, read by large numbers of people across centuries, including religious scriptures, legal codes, novels, paintings, and performances. Exploration of how Chinese classics have been used and reimagined in different places and times to demonstrate enduring importance of these texts and cultural artifacts. Emphasis on how these works were interpreted throughout East Asia, relationship with past, and how shared history is seen as informing present. **40CW.** Special Topics. Seminar, three hours. Enforced requisite: course 40B. In-depth examination of Chinese classic texts and their reimagination in modern times. Satisfies Writing II requirement.

**48A-48B-48CW. Political Violence in Modern World: Causes, Cases, and Consequences. (6-6-6)** Course 48A is requisite to 48B, which is requisite to 48CW. Limited to first-year freshmen. **40A-40B.** Lecture, three hours; discussion, two hours. Exploration of causes, dynamics, and consequences of political violence. Political violence can include anything from extra-legal warfare, ethnic cleansing and genocide, civil war, riots and pogroms, terrorism and state repression, revolution and counter-revolution, and more. Political violence is not modern phenomenon: it has been part of human experience from antiquity to present. Examination, from interdisciplinary perspective, of political violence, in particular, extreme form of political violence, genocide. Readings of theoretical and empirical works from history, comparative literature, sociology, political science, psychology, and more. Employs art, film, literature, diaries, memoirs, and news media to encourage critical thinking about political violence. P/NP or letter grading. **40CW.** Special Topics. Seminar, three hours. Requisite: course 48B. In-depth examination of political violence. Satisfies Writing II requirement. Letter grading.

**60A-60B-60CW. America in Sixties: Politics, Society, and Culture, 1954 to 1974. (6-6-6)** Course 60A is enforced requisite to 60B, which is enforced requisite to 60CW. Limited to first-year freshmen. **60A-60B.** Lecture, three hours; discussion, two hours. Interdisciplinary exploration of U.S. society from Brown versus

Board of Education (1954) to resignation of Nixon. Topics include civil rights, Great Society, anti-Vietnam war movement, political and artistic countercultures, and changes in technology, law, and media. P/NP or letter grading. **60CW.** Special Topics. Seminar, three hours. Enforced requisite: course 60B. In-depth examination of political and cultural issues affecting U.S. society from 1954 to 1974. Satisfies Writing II requirement. Letter grading.

**66A-66B-66CW. Los Angeles: The Cluster. (6-6-6)** Course 66A is enforced requisite to 66B, which is enforced requisite to 66CW. Limited to first-year freshmen. Letter grading. **66A-66B.** Lecture, three hours; discussion, two hours. In-depth look at city in which UCLA is located. Drawing on concept of Los Angeles as laboratory, students engage in systematic way with urban area that is to be their home for next several years. As they do, they come to understand peoples, spaces, politics, and cultures of Los Angeles and its metropolitan region in both present and past, as well as Los Angeles' place in urban world. **66CW.** Special Topics. Seminar, three hours. Enforced requisite: course 66B. Topics may include musical cultures of Los Angeles, Los Angeles as global city, Los Angeles in fiction, Southern California and environment, planning for 21st-century Los Angeles, and housing and homelessness in Los Angeles. Satisfies Writing II requirement.

**70A-70B-70CW. Evolution of Cosmos and Life. (6 each)** Course 70A is enforced requisite to 70B, which is enforced requisite to 70CW. Limited to first-year freshmen. **70A-70B.** Lecture, three hours; discussion, two hours. Use of concept of evolution, as it applies to biological organisms, Earth, solar system, and universe itself, to introduce students to both life and physical sciences. Examination of evolution of universe, galaxy, solar system, and Earth in course 70A; focus on evolution of life in course 70B. P/NP or letter grading. **70CW.** Special Topics in Life and Physical Sciences. Seminar, three hours. Enforced requisite: course 70B. Not open for credit to students with credit for course 70DW. Examination in depth of various issues of evolution in cosmos from life sciences perspective. Satisfies Writing II requirement. Letter grading.

**M71A-M71B-M71CW. Biotechnology and Society. (6-6-6)** (Same as Society and Genetics M71A-M71B-M71CW.) Course M71A is enforced requisite to M71B, which is enforced requisite to M71CW. Limited to first-year freshmen. **M71A-M71B.** Lecture, three hours; discussion, two hours. Exploration of methods, applications, and implications of biotechnology and of ethical, social, and political implications as well as biological underpinnings. P/NP or letter grading. **M71CW.** Special Topics. Seminar, three hours. Enforced requisite: course M71B. Topics include in-depth examination of ethics and human genetics, bioweapons and biodefense, sex and biotechnology. Satisfies Writing II requirement. Letter grading.

**M72A-M72B-M72CW. Sex from Biology to Gendered Society. (6-6-6)** (Same as Communication M72A-M72B-M72CW, Society and Genetics M72A-M72B-M72CW, and Sociology M72A-M72B-M72CW.) Course M72A is enforced requisite to M72B, which is enforced requisite to M72CW. Limited to first-year freshmen. Letter grading. **M72A-M72B.** Lecture, three hours; discussion, two hours. Examination of many ways in which sex and sexual identity shape and are shaped by biological and social forces, approached from complementary perspectives of anthropology, biology, medicine, and sociology. Specific topics include biological origins of sex differences, intersex, gender identity, gender inequality, homosexuality, sex differences, sex/gender and law, and politics of sex research. **M72CW.** Special Topics. Seminar, three hours. Enforced requisite: course M72B. Topics may include politics of reproduction, sexuality, sexual identity, social construction of gender, and reproductive technologies. Satisfies Writing II requirement.

**73A-73B-73CW. Brain, Bodymind, and Society: All in Your Head? (6-6-6)** Course 73A is enforced requisite to 73B, which is enforced requisite to 73CW. Limited to first-year freshmen. **73A-73B.** Lecture, three hours; discussion, two hours. Drawing on several disciplines including disability studies, literary and film analysis,

neurobiology, philosophy, and psychology, development of interdisciplinary account of how we relate our increasingly sophisticated knowledge of brain to contexts and meanings of subjectivity, mental health, and disability. Students make connections through interdisciplinary discussion of contemporary and historical understandings of brain structure and function; biological, psychological, and philosophical approaches to memory and learning; neuroscientific and philosophical approaches to consciousness; literary and filmic representations of mental illness and disability; and disability and mad studies critiques of biomedical model of mental illness. P/NP or letter grading. **73CW.** Special Topics. Seminar, three hours. Enforced requisite: course 73B. Topics include mental illness, neuroscience in popular culture, and neuroscience of decision making. Satisfies Writing II requirement. Letter grading.

**80A-80B-80CW. Frontiers in Human Aging. (6-6-6)** Course 80A is enforced requisite to 80B, which is enforced requisite to 80CW. Limited to first-year freshmen. **80A-80B.** (Formerly numbered 80B.) Lecture, three hours; discussion, two hours. Examination of aging process from vantage points of multiple disciplines, including biology, psychology, sociology, ethics, and public policy. Study of biomedical and biological aging and psychological, social, and ethical implications of phenomena. P/NP or letter grading. **80CW.** Special Topics. Seminar, three hours. Enforced requisite: course 80B. In-depth examination of gender and aging, cellular aging, cancer, and aging of brain. Satisfies Writing II requirement. Letter grading.

**97A. Cluster Colloquia: Variable Topics. (1)** Seminar, one hour. Variable topics course designed for students who have completed one GE cluster. Study, through small-group discussion and projects, of selected topics related to one cluster theme or topic. Consult Schedule of Classes for topics and instructors. May be repeated once for credit. P/NP grading.

## Upper-Division Courses

**180A. Cultural Heritage and Representation of Identity: Debates and Writing. (5)** Lecture, three hours; discussion, two hours. Course 180A is requisite to 180B. Designed for transfer students. How tangible and intangible materials of human culture are used by their creators to fashion and refashion their identities over time and in different spaces. Introduction to multidisciplinary perspectives on human cultures and associated objects they create, different issues attendant on excavation, preservation, and presentation of these materials to different publics, and what all of this means to those whose heritage is being studied and/or exhibited through use of many rich cultural resources on and off campus. Examination of topics related to cultural heritage, with strong focus on debate and writing. Writing of weekly short essays or Op-ed pieces based on what students have learned. Letter grading.

**180B. Cultural Heritage and Representation of Identity: Special Topics. (5)** Seminar, three hours. Requisite: course 180A. How tangible and intangible materials of human culture are used by their creators to fashion and refashion their identities over time and in different spaces. Introduction to multidisciplinary perspectives on human cultures and associated objects they create; different issues attendant on excavation, preservation, and presentation of these materials to different publics; and what all of this means to those whose heritage is being studied and/or exhibited through use of many rich cultural resources on and off campus. Letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# COMMUNICATION

College of Letters and Science

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Martie G. Haselton, PhD  
Kerri L. Johnson, PhD  
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Nazo L. Koulloukian, JD  
James S. Newton, BA  
Michael W. Suman, PhD

### Adjunct Assistant Professors

Abigail H. Goldman, MS  
Barry A. Sanders, JD

## Overview

The Department of Communication is an interdisciplinary group of scholars interested in communication at many levels of analysis, including digital and mass media, political

communication, and interpersonal social interaction.

## Undergraduate Major

### Communication BA

The major in Communication is an interdisciplinary curriculum leading to a Bachelor of Arts (BA) degree. It seeks to provide students with comprehensive knowledge of the nature of human communication at multiple levels of analysis. The major coursework includes content from the natural and social sciences, as well as the humanities. Four areas of focus are offered: communication technology and digital systems, interpersonal communication, mass communication and media institutions, and political and legal communication.

### Learning Outcomes

The Communication major has the following learning outcomes:

- Demonstrated mastery of substantive areas of the field, including mass communication and media institutions, interpersonal communication, communication technology and digital systems, and political and legal communication
- Placement of particular communication events or examples in the context of broader patterns of human activity
- Critical evaluation of arguments based on evidence
- Design and implementation of original research projects
- Completion, using acquired knowledge and skills, of a project that demonstrates core competencies in the field
- Active participation in learning-in-practice opportunities
- Evaluation and critique of oral presentations
- Demonstrated mastery of conceptualization, formulation, and oral presentation of the student's own ideas

### Entry to the Major

#### Admission

Enrollment in the major is limited. Admission to the major is by application to the committee in charge. Applications are available on the [department website](#) to regularly enrolled UCLA students during spring quarter.

#### Transfer Students

Transfer applicants to the Communication major with 90 or more units must complete at least four of the following seven lower-division required courses: Communication 10 or one interpersonal communication and one mass communication course, one public address course, one linguistics course, one statistics course, and three courses from psychology, American government, sociology, and microeconomics or political economy.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

Students are encouraged but not required to complete as many lower-division preparation for the major courses as possible before admission to the program.

*Required:* Communication 1, 10, one course selected from Anthropology 4, Linguistics 1, or Philosophy 23, one statistics course from Economics 41 or Statistics 10. Three additional courses must be selected from Political Science 40, Psychology 10, Sociology 1, and Economics 1 or 5 or Political Science 30.

### The Major

Students must complete 10 or 11 upper-division courses. The practicum requirement can be satisfied by a course that also satisfies a core or an additional area elective course requirement.

*Required Core Courses:* Communication 100, 150.

*Required Area Courses:* A total of eight courses from the following four areas, including at least one core course in each area:

*Communication Technology and Digital Systems—Core courses:* Communication 129, 131, 151, 154, 155, 156, 158, 159; *elective courses:* Communication 157, 188C, 191C.

*Interpersonal Communication—Core courses:* Communication 110, 111, M113, 114, 115, 120, 121, 122, M123, 126; *elective courses:* Anthropology 136A, M150, 151, Communication 108, 109, 112, 116, M117, 118, 119, M125, M127, 131, M144A, M144B, 188B, 191B, Linguistics 103, 170, Philosophy 172, Psychology 135 (or Sociology 132), 137C, M165, 177, Sociology 134, 156.

*Mass Communication and Media Institutions—Core courses:* Communication 133, 140, M147, 152; *elective courses:* Asian American Studies 172C, Communication 105, 106, 107, 128, 130, 132, 136, 141, 143, 145, 146, 148, M149, M165, 166, M169, 175, 179, 182, 183, 186, 187, 188A, 191A, Film and Television 108, Political Science M142D.

*Political and Legal Communication—Core courses:* Communication 101, 160, 162, 168, 170, 174; *elective courses:* Communication 102, 163, 164, 171, 173, M176, 178, 188D, 191D, Political Science M141A, 141B (or Sociology 133), 141C, 141E.

*Required Practicum Course:* One course from Communication 101, 102, 103A, 103B, 104, 109, 111, 116, M117, 155, 160, M176, 188E, or 191E.

### Honors Program

The departmental honors program provides exceptional students an opportunity for advanced research and study, under the guidance of a faculty member, that leads to the completion of an honors thesis. To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.6 or better in upper-division coursework in the major and an overall GPA of 3.3 or better in all completed UC coursework, (3) complete Communication



198A, 198B, and 198C, and (4) produce a completed satisfactory honors thesis (as determined by a recommendation of their thesis adviser and final approval by the department chair). Contact the student affairs officer for more information.

## Computing Specialization

Majors in Communication may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the major, (2) completing Program in Computing 10A and 10B, or Computer Science 31 and 32, and (3) completing four courses (at least one of which must be in communication) from Communication 122, 129, 131, 151, 153, 154, 155, 156, 158, Program in Computing 10C, 16A, 16B, 20A, 40A.

Courses need to be completed with a grade of C- or better in each course and a combined grade-point average of at least 2.0. Students must petition for admission to the program and are advised to do so after they complete Program in Computing 10B or Computer Science 32 (petitions should be filed in the Counseling Office). Students graduate with a bachelor's degree in Communication and a specialization in Computing.

## Graduate Major

### Communication MS, PhD

The program's core areas of specialization include: communication and cognition, political communication, and computational communication. Students are trained in the core of communication scholarship by engaging in coursework and research that aligns with the broader discipline.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Communication

### Lower-Division Courses

**1. Principles of Oral Communication. (4)** Lecture, four hours. Enforced requisite: satisfaction of Entry-Level Writing requirement. Examination of foundations of communication and public speaking. Consideration of number of basic theories related to study of communication and development of skills to enable composition and delivery of speeches in accordance with specific rhetorical concepts. Improvement of ability to analyze, organize, and critically think about communicative messages while becoming better equipped to articulate ideas. P/NP or letter grading.

**1A. Public Speaking for Nonnative Speakers. (4)** Lecture, four hours. Designed for nonnative speakers of English to increase fluency and vocabulary while improving presentation skills, language usage, reasoning, style, and delivery. Conversation and pronunciation practice. Focus on theory and practice of public speaking, including selection of content, organization of ideas, language, and delivery. Practice in extemporaneous and manuscript speaking. Critical analysis of speeches in both contemporary and historical settings.

Special emphasis on group discussions, evaluations, practice of both public and private speaking skills. Offered in summer only. P/NP or letter grading.

**1B. Learning American English and Culture from Movies. (4)** Lecture, four hours. Advancement of students' fluency in conversational English while increasing their awareness of American popular culture. Primer on American-style colloquial English and nuances of contemporary customs and values offered through guided immersion in popular cinema. Offered in summer only. P/NP or letter grading.

**10. Introduction to Communication. (5)** Lecture, four hours; discussion, one hour. Introduction to study of interpersonal and mass communication using interdisciplinary approach. Exploration of basic methods and theoretical perspectives that social scientists and others use to study interpersonal and mass communication, and basic concepts used to describe and explain that communication. Historical overview of each major mass media. Study of significant current topical issues related to means of communication that reach large numbers of people. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M72A-M72B-M72CW. Sex from Biology to Gendered Society. (6-6-6)** (Same as Clusters M72A-M72B-M72CW, Society and Genetics M72A-M72B-M72CW, and Sociology M72A-M72B-M72CW.) Course M72A is enforced requisite to M72B, which is enforced requisite to M72CW. Limited to first-year freshmen. Letter grading. **M72A-M72B.** Lecture, three hours; discussion, two hours. Examination of many ways in which sex and sexual identity shape and are shaped by biological and social forces, approached from complementary perspectives of anthropology, biology, medicine, and sociology. Specific topics include biological origins of sex differences, intersex, gender identity, gender inequality, homosexuality, sex differences, sex/gender and law, and politics of sex research. **M72CW.** Special Topics. Seminar, three hours. Enforced requisite: course M72B. Topics may include politics of reproduction, sexuality, sexual identity, social construction of gender, and reproductive technologies. Satisfies Writing II requirement.

**88. Sophomore Seminars: Communication Studies. (4)** Seminar, three hours. Limited to maximum of 20 lower-division students. Readings and discussions designed to introduce students to current research in discipline. Culminating project may be required. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Communication Science. (4)** Lecture, three hours. Requisite: course 10 or Linguistics 1 or Sociology 1 or Psychology 10. Examination of fundamental issues in

communication sciences. Exploration of theoretical and methodological approaches that bridge major areas of current interdisciplinary communication research. P/NP or letter grading.

**101. Freedom of Communication. (4)** Lecture, four hours. Analysis of legal, political, and philosophical issues entailed in rights of free expression, access to audience, and access to information. Study of court decisions governing freedom of communication in U.S. P/NP or letter grading.

**102. Principles of Argumentation. (4)** Lecture, four hours. Analysis of propositions, tests of evidence, briefing. Study of hindrances to clear thinking, ambiguity of terms, and prejudices. Critical analysis of selected argumentative speeches. P/NP or letter grading.

**103A-103B. Forensics. (4-4)** Lecture, three hours. Participation in on-campus and intercollegiate forensics activities, including exposure to fundamentals of competitive forensic events. Students practice public address, interpretation of literature, debate, oratory, and extemporaneous speaking and engage in independent research and analysis. P/NP or letter grading. **103A.** Basic preparation; **103B.** Advanced practicum in speech.

**104. Analysis and Briefing. (4)** Lecture, three hours. Intensive study of selected political or social issues, preparation of bibliography, analysis and evaluation of issues and arguments. P/NP or letter grading.

**105. Media Conspiracy Theories in U.S. and Middle East. (4)** Lecture, three hours. Through mass and digital media, conspiracy theories are reshaping politics and society around world. Although conspiracy theories are globally widespread, they find particularly fertile ground in Middle East and in U.S. Definition, identification, and analysis of conspiracy theories as they appear in media of Western democracies and Muslim majority societies. Interdisciplinary approach to study of conspiracy theories. Case studies, such as conspiracies about 9/11, taken from Middle Eastern media sources in English translation. Background knowledge of Middle East not required. P/NP or letter grading.

**106. Reporting America. (4)** Lecture, three hours. Introduction to main western European and Middle Eastern news media, with materials in English. Exploration of how U.S. is represented in Europe, Middle East, Iran, and Afghanistan, with focus on three comparative case studies of Britain, Spain, and Germany. In-depth coverage of American news as reflected in Europe and Middle East. P/NP or letter grading.

**107. Terrorism in Journalism. (4)** Lecture, three hours. How do media outlets in Middle East represent Islamist terrorism? How do they describe, analyze, and comment on suicide attacks? Focus on Arab, Afghan, and Iranian media discussions of this phenomenon to explore evolution of meaning of terrorism in Muslim societies. P/NP or letter grading.

**108. Communication and Identity. (4)** Lecture, three hours. Study of relationships among communication, culture, and identity, and examination of ways in which texts (broadly construed) constitute experience, difference, and subjectivity. Focus on function of language, representation and meaning in construction of self, social collectives, and world views. Consideration of how communication is performative endeavor for humans seeking to construct identity. Students are prepared to describe and explain theories that detail performance as communicative form, analyze ways language and discourse function as texts that work to produce significant personal and social identities, and describe specific principles, motivations, and theoretical categories within interdisciplinary study of culture that produce identity. Letter grading.

**109. Entrepreneurial Communication. (4)** Lecture, four hours. Study of entrepreneurial communication from foundations in internal and external communication and development of data analysis, interpretation, and presentational skills utilized in existing, as well as in development of, contemporary innovative businesses. P/NP or letter grading.

**110. Gender and Communication. (4)** Lecture, four hours. Understanding gender is fundamental part of understanding who we are as human beings. Exploration of crucial role of gender in spheres of life involving

communication and role and origins of gender differences in communication. Contexts of communication include family, workplace, sexuality, and intimate relationships. Discussion of how media influence conceptions of gender. P/NP or letter grading.

**111. Conflict and Communication. (4)** Lecture, three hours. Analysis of when and why conflict is prevalent in daily lives (including mass media) and how communication affects reactions to and consequences of conflict. Conflict is part of our evolutionary heritage. How well we handle various conflicts affects, to great degree, our success or failure wherever we interact with others, including intimate relations, school, and workplace. P/NP or letter grading.

**112. Current Issues in Vocal Communication. (4)** Seminar, three hours. Prerequisite: course 118 or 120 or 126. Examination of contemporary issues in evolutionary communication research. Topics include design of communication systems, animal signaling, social communication, and speech production and perception. P/NP or letter grading.

**M113. Nonverbal Communication and Body Language. (4)** (Same as Psychology M137B.) Lecture, three hours. Examination of how various forms of nonverbal communication convey meaningful information to perceivers, with focus on both production and perception of multiple communication formats (e.g., affect expression of face and body, gesture, and kinematics), with strong emphasis on body language. Readings from variety of related fields. P/NP or letter grading.

**114. Understanding Relationships. (4)** Lecture, four hours. Explanation of types of communication that occur in close relationships, especially romantic relationships. In-depth coverage of variety of relationship topics, including intimacy, stages of intimate relationships, why we choose to get involved with some people as opposed to others, flirting, and self-disclosure. P/NP or letter grading.

**115. Interpersonal Dynamics. (4)** Lecture, three hours. Survey of recent scientific approaches to dyadic communication and relationships. Surveys selection of experimental, observational, and quantitative methods, and how they can be applied to key issues in dyadic communication and interpersonal relationships. Topics include recent technological techniques for measuring and influencing dyads, including role of peripheral devices such as phones or other wearable devices. Consideration of dyadic processes including influence, mimicry, leadership, active listening, and more. Consideration also of how findings apply beyond dyads to teams. Letter grading.

**116. Communication and Conflict in Couples and Families. (4)** Lecture, three hours. Examination of (1) dysfunctional communication and conflict in couples and families and (2) relationship of these processes to individual psychopathology, marital discord, and family disruption (e.g., separation and divorce). P/NP or letter grading.

**M117. Negotiation. (4)** (Same as Labor Studies M117.) Lecture, four hours. Art and science of negotiation in securing agreements between independent parties. Theory and practice that underlies successful negotiation. Experiential course in which students learn broad array of negotiation skills, including identifying one's own (and others') communication style, identifying and incorporating components of successful negotiation, and resolving conflict between parties. Letter grading.

**118. Language and Music. (4)** Lecture, three hours. Cognitive science exploration of structure and evolution of language and music and their relationships to communication, cognition, and culture. P/NP or letter grading.

**119. Voice and Its Perception. (4)** Lecture, four hours. Focus on how human voice conveys information about identity of speakers, physical characteristics, personality, and emotional state, and on how listeners utilize this information to make judgments about speakers. Letter grading.

**120. Group Communication. (4)** Lecture, four hours. Examination of group communication from perspectives of evolutionary psychology, communications, and psycholinguistics. Topics include evolution of co-

operation, ingroup and outgroup dynamics, gossip, music improvisation, and conversational behavior. P/NP or letter grading.

**121. Communication Development. (4)** Lecture, three hours. Topics in childhood development of human interpersonal communication, including production and perception of communicative signals at different ages, methods for studying communication development, physiological and social mechanisms, cross-cultural similarities and differences in communication development, effects of media and technology, and disorders. Letter grading.

**122. Visual Communication. (4)** Lecture, three hours; discussion, one hour. Exploration of visual basis of communication through study of social minds of infants, adults, and nonhuman primates. Letter grading.

**M123. Social Cognition. (4)** (Formerly numbered 123.) (Same as Psychology M137M.) Lecture, three hours. Survey of research from field of social cognition, with emphasis on understanding cognitive processes involved in interpersonal and intergroup communication. Topics include attention, interpretation, evaluation, judgment, attribution, and memory processes. Consideration of both controlled and automatic processes. Discussion of roles of motives, goals, and affective variables. P/NP or letter grading.

**M124R. Evolution of Language. (4)** (Same as Anthropology M124R.) Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: Anthropology 1 or 4 or Linguistics 1. Designed for juniors and seniors. How did human capacity for language evolve? Examination of origin of human language from biological, comparative, developmental, social and computational perspectives. Topics include evolutionary theory, linguistic structure, gesture and speech, animal communication, language learning, language disorders, and computational models of language emergence. P/NP or letter grading.

**M125. Talk and Social Institutions. (4)** (Same as Sociology CM125.) Lecture, four hours; discussion, one hour. Designed for juniors/seniors. Practices of communication and social interaction in number of major institutional sites in contemporary society. Setting varies but may include emergency services, police and courts, medicine, news interviews, and political oratory. P/NP or letter grading.

**126. Evolution of Interpersonal Communication. (4)** Lecture, four hours. Examination of current issues in interpersonal communication from perspectives of evolutionary psychology and biology. Topics include coevolution of signaler and receiver adaptations, nonverbal communication, courtship behavior, miscommunication between sexes, implied language use, and deception. Letter grading.

**M127. Animal Communication. (4)** (Same as Anthropology M128Q.) Lecture, three hours. Designed for Anthropology and Communication majors. Evolution, functions, design, and diversity of animal communication systems such as bird song, dolphin calls, whale song, primate social signals, and human language. P/NP or letter grading.

**128. Play and Entertainment. (4)** Lecture, three hours. Entertainment is significant component of both interpersonal and mass communication. Examination of evolutionary history, cognitive mechanisms, and social dimensions of play and entertainment, as well as their possible pedagogical effects. Letter grading.

**129. Gaming Mind. (4)** Lecture, three hours. Exploration of various aspects of online computer games that are becoming increasingly popular and technically sophisticated, with focus on what people learn from games, how they learn it, and whether learning is potentially useful. Letter grading.

**130. Science of Language. (4)** Lecture, three hours. Introduction to scientific foundations of psycholinguistics, and connections to applied issues in communication. Survey of various scientific methods, and how they are applied to key issues in language and communication. Discussion of how we can measure meanings of words, complexity of sentences, and study of how these are processed (and produced) during communication. Includes some hands-on exer-

cises, including learning some scientific tools that can be used both in future research and in field. Letter grading.

**131. Computer Models of Communicators. (4)** Lecture, three hours. Introduction to using computerized methods to model communication processes. Survey of various computational methods, and how to apply these in hands-on exercises. Exercises help setup small-scale simulations of communicators on personal computers. Covers computer models for individual communicators, dyads, groups, and collective (mass) systems. Letter grading.

**132. Multicultural Television. (4)** Lecture, four hours. Critical evaluation of television programming and scholarly research of new developments in television. Application of research findings by students to real-world contexts in course discussions, papers, and presentations. Letter grading.

**133. Decoding Media Strategies. (4)** Lecture, three hours; discussion, one hour. Today's mass media are thriving business, central part of cultural identity, and vital component of democracy. How do these different and often conflicting functions determine content of mass media? Examination of psychological dynamics of advertising, nature of entertainment and mass culture, practice of propaganda, and changing patterns of media ownership. Assessment of impact of mass media on individuals and social institutions. Letter grading.

**136. Media Portrayals of Gays and Lesbians. (4)** Lecture, three hours. How mass media have portrayed gays and lesbians and why. Media's depiction, portrayal, and handling of homosexuality, with particular focus on how gays and lesbians have been negatively stereotyped, portrayed unrealistically, and often not portrayed at all. Exploration not only of how gays and lesbians have been represented, but also why certain portrayals have tended to dominate. P/NP or letter grading.

**140. Theory of Persuasive Communication. (4)** Lecture, four hours. Dynamics of communication designed to influence human conduct; analysis of structure of persuasive discourse; integration of theoretical materials from relevant disciplines of humanities and social sciences. Letter grading.

**141. Films of Persuasion: Social and Political Advocacy in Mass Society. (4)** Lecture, three hours; discussion, one hour. Films often provide commentary about public issues. Examination of how films communicate to large audiences about history, society, and politics. Critical evaluation of these works to understand power and limitations of films as social persuasion. Letter grading.

**143. Rhetoric of Popular Culture. (4)** Lecture, three hours. Rhetorical approach to study of U.S. popular culture. Examination, both at theoretical level and through specific case studies, of ways in which popular cultural texts perform rhetorically to influence political and social struggles shaping everyday life. How do particular artifacts or communicative texts constitute source for (re)negotiation of cultural meanings as well as greater understanding of ways language functions as vehicle for human action. Letter grading.

**M144A-M144B. Conversational Structures I, II. (4-4)** (Same as Sociology CM124A-M124B.) Lecture, three hours; discussion, one hour. P/NP or letter grading.

**M144A.** Introduction to various structures employed in organization of conversational interaction, such as turn-taking, action sequencing, and repair. **M144B.** Requisite: course M144A. Consideration of some more expanded sequence structures, story structures, topical sequences, and overall structural organization of single conversations.

**145. Situation Comedy and American Culture. (4)** Lecture, three hours. Historical analysis of sitcom genre from its beginning in late 1940s to present. Investigation of how sitcoms have influenced American life and culture and how American life and culture have influenced sitcoms. Exploration of issues of family, race and ethnicity, class and economy, gender roles, and political culture. P/NP or letter grading.

**146. Evolution of Mass Media Images. (5)** Lecture, four hours; discussion/laboratory, one hour. Analysis of evolutionary psychology as basis for images se-



lected by media portraying women and/or minorities in entertainment, advertising, and informational communication. Letter grading.

**M147. Sociology of Mass Communication. (4)** (Same as Sociology M176.) Lecture, four hours; discussion, one hour (when scheduled). Studies in relationship between mass communication and social organization. Topics include history and organization of major media institutions, social forces that shape production of mass media news and entertainment, selected studies in media content, and effects of media on society. P/NP or letter grading.

**148. Marketing Communications. (4)** Lecture, three hours. Examination of key concepts and methods in marketing communications in both traditional and digital media. Development and execution of communications strategies, with primary emphasis on consumer insight, branding, market segmentation and positioning, message strategy, promotion, and execution of marketing communications through appropriate media technologies. Letter grading.

**M149. Media: Gender, Race, Class, and Sexuality. (5)** (Same as Gender Studies M149 and Labor Studies M149.) Lecture, four hours; activity, one hour. Limited to junior/senior Communication and Gender Studies majors and Labor Studies minors. Examination of manner in which media culture induces people to perceive various dominant and dominated and/or colonized groups of people. Ways in which women, gay, lesbian, bisexual, transgendered, racial, and ethnic marginalized peoples, class relations, and other subaltern or subordinated groups are presented and often misrepresented in media. Investigation and employment of practical applications of communications and feminist theories for understanding ideological nature of stereotyping and politics of representation through use of media, guest presentations, lectures, class discussions, and readings. Introduction to theory and practice of cultural studies. Letter grading.

**150. Methodologies in Communication Research. (5)** Lecture, four hours; discussion, one hour. Prerequisite: Economics 41 or Statistics 10. Limited to Communication majors. Examination of quantitative and qualitative methodologies in communication research. Letter grading.

**151. Computer-Mediated Communication. (4)** Lecture, four hours. Examination of how computer technology, particularly Internet, has influenced patterns of human communication. History and distinctiveness of computer-mediated communication (CMC). CMC's influence on modern economic, political, and social interaction. Letter grading.

**152. Analysis of Communication Effects. (4)** Lecture, four hours. Survey of experimental and field research on effects of communications. Study of source, message, and environmental factors affecting audience response. P/NP or letter grading.

**153. Introduction to Data Science. (4)** Lecture, three hours. Prerequisite: one course from Computer Science 31, 32, Program in Computing 10A, 10B with grade of C+ or better, or equivalent. Examination of how large-scale data can be used to systematically measure various aspects of human activities. Review of series of computational and statistical methods which enable scalable analysis and cost reduction. Students learn to interpret and understand research findings and implications from published work. Review of ethical issues in data science, such as privacy and model biases. Investigation of limitations and risks of current methods. Discussion of various ways to improve transparency and accountability of data-driven research. Letter grading.

**154. Social Communication and New Technology. (4)** Lecture, four hours. Internet's digital core was designed for military command. Yet emerging network was gradually co-opted to perform communicative functions such as gossip, dating, news, entertainment, and trade. Exploration of history, social effects, and possible futures of digital communication. Letter grading.

**155. Artificial Intelligence and New Media. (4)** Lecture, three hours; discussion, one hour. Prerequisite: Computer Science 31 or 32 or Program in Computing 10A or 10B with grade of C+ or better. Artificial intelli-

gence (AI) and machine learning (ML) have made rapid progress in recent years on various fronts. Many of their advanced techniques are being transferred to number of domains such as business, transportation, medicine, advertisement, military operations, and social media, and aiding our decision making, planning, reasoning, and forecasting. Review of origin and modern development of artificial intelligence and its recent breakthroughs through many applications with special emphasis on its usages of media industry, e.g., personalization, recommendation, and targeted advertising. Covers its technical merits as well as controversies such as ethical and moral issues of AI, privacy concerns in data collection, and fair use of AI in general. Prior knowledge in mathematics, statistics, or computer science not required. Discussion of elementary technical details as course unfolds. Letter grading.

**156. Social Networking. (4)** Lecture, three hours. Investigation of how new online social networks have facilitated interpersonal interactions for knowledge sharing, romance, business, politics, and entertainment. Critical investigation of current popular social networking websites (e.g., Facebook, Twitter, YouTube) through social network analysis and other social science research methods. P/NP or letter grading.

**157. Celebrity, Fame, and Social Media. (4)** Lecture, three hours. Analysis of how following personal lives of media-created celebrities impacts self-esteem, connectedness, and personal relationships from cultural studies and social sciences perspectives, and how entities cultivate celebrity for financial gain. Topics include celebrity gossip and privacy, news sharing, public relations, and impact of social media on fan support, image construction, and damage control. P/NP or letter grading.

**158. Revolutions in Communication Technology. (4)** Lecture, three hours. Study of dynamic processes of innovation in history of communication from its earliest expressions to information age. Examination of developments in speech, images, and writing. Investigation of interactions of cognitive factors, social change, and technological innovation. Letter grading.

**159. Artificial Intelligence and Society. (4)** Lecture, three hours. Impact of artificial intelligence (AI) on society is growing rapidly. Exploration of questions of what if superhuman AI is achieved, will it free humans from tedious jobs or cause mass unemployment, and how to guarantee AI safety so that it will not annihilate human civilization. Letter grading.

**160. Political Communication. (4)** Lecture, four hours; discussion, one hour. Study of nature and function of communication in political sphere; analysis of contemporary and historical communications within established political institutions; state papers; deliberative discourses; electoral campaigns. Letter grading.

**162. Presidential Communication. (4)** Lecture, three hours. Examination of historical evolution of presidential communication environment, resources, and strategies, as well as how presidential campaign communication has evolved over time and implications for how presidents govern. Letter grading.

**163. Public Diplomacy. (4)** Seminar, four hours. Exploration of field of public diplomacy and its theory and practices. How points of view and imagery in context of international politics can be influenced and changed. Development of presentation skills and understanding of structure of profession. Letter grading.

**M165. Agitational Communication. (4)** (Same as Labor Studies M175.) Lecture, four hours; discussion, one hour (when scheduled). Theory of agitation; agitation as force for change in existing institutions and policies in democratic society. Intensive study of selected agitational movements and technique and content of their communications. Letter grading.

**166. Inside Hollywood. (4)** Lecture, four hours. Identification of how motivation and creativity interact with business interest, research, and policies in producing entertainment for media market. Letter grading.

**168. Communication and Media Law. (4)** Lecture, three hours. Focus on sample of most important intersections between law and communication: copyright, trademarks, freedom of speech, privacy, secrecy, surveillance, and publicity rights. Law and communica-

tion have been intertwined since introduction of book censorship and licensing in late 16th century, and blasphemy laws before that. That relationship has grown increasingly complex in time in response to technological changes in communication media, evolution of modern state forms, and changing expectations about freedom of and responsibility for both communication and information gathering. From music piracy, knock-offs of famous brands, ubiquitous presence of closed-circuit television, facial recognition software, global tracking systems, biosensors, and data mining practices, intersection between communication, media, and law has become part of our life, on scale and to extent that would have been unthinkable few years ago. Letter grading.

**M169. Critical Vision: History of Art as Social and Political Commentary. (5)** (Same as Honors Collegium M179.) Seminar, three hours. Study of tradition of visual arts (painting, graphic art, photography, sculpture) as vehicles for social and political commentary. P/NP or letter grading.

**170. Legal Communication. (4)** Lecture, three hours; discussion, one hour. Review of Fifth Amendment privilege against self-incrimination, including analysis of Miranda warnings, police interrogation procedures, coerced confessions, and why innocent people confess. Examination of jury behavior, reliability of eyewitness testimony, and fair trials. Mock trial presentation. Intimate expression and right to define one's own concept of existence and meaning, using examples of evolving rulings on same-sex marriage, abortion, and right to die. Use and misuse of grand juries in police misconduct cases, including Eric Brown, Michael Garner, and Breonna Taylor cases. Questions of judicial activism, legal precedent, and standards of review. Letter grading.

**171. Theories of Freedom of Speech and Press. (4)** Lecture, three hours. Exploration of relationship between freedoms of speech and press and values of liberty, self-realization, self-government, truth, dignity, respect, justice, equality, association, and community. Study of significance of these values examined in connection with issues such as obscenity, defamation, access to media, and control of commercial, corporate, and government speech. P/NP or letter grading.

**173. Affect and Emotion in Political Communication. (4)** Lecture, three hours. There is growing body of work in political communication that emphasizes importance of affect, emotion, and personality in politics. Sensitivity to threat or disgust; reactions of fear, anger, or happiness; tendency to focus more on negative than on positive information—each of these can impact feelings about candidates, and positions on wide range of domestic and foreign issues. Many of these feelings are in reaction to mass-mediated information; and changing media technologies likely increases volume of affective or emotional content reaching public. Review of recent work on these themes, drawn from both media psychology and political communication. Letter grading.

**174. Entertainment and Politics. (4)** Lecture, three hours. Research in political communication often focuses on news coverage. Our ideas about world around us do not just come from news content, however—we are affected by wide range of entertainment media as well. Consideration of how changes in media technology have increasingly broken down division between news and entertainment. Review of work on impacts that entertainment-focused media—including television shows, movies, and music—have on political preferences. Letter grading.

**175. Criticism and Public Arts. (4)** Lecture, four hours; discussion, one hour (when scheduled). Introduction to methods and problems of criticism in public arts. Study of several types of critical methods: formalistic, analogue, pragmatic, and aesthetic criticism. Topics include definition of art and criticism, aesthetic media, genre and resources of film, television, theater, and public discourse, varieties of critical method, problems of critical judgment. Letter grading.

**M176. Visual Communication and Social Advocacy. (4)** (Same as Labor Studies M176.) Lecture, four hours. Visual communication reaches diverse audiences in communicating major social and political topics. Cartoons, posters, murals, and documentary

photography have had powerful world impact. Survey of all four genres of visual communications as features of modern mass media. Letter grading.

**178. Propaganda and Media. (4)** Lecture, three hours. Examination of nature of propaganda, institutional structure of American media, and relationship between propaganda and American news media. History of propaganda in America from World War I era forward, competing theories of democracy and media, and role of corporations in propaganda and news. Letter grading.

**179. Images of U.S. (4)** Lecture, four hours. Awareness of international role of U.S. necessitates clear understanding of way our nation is perceived by others. Exploration of roots of U.S. images in minds of people abroad. Analysis of influences that contribute to images and ways in which images affect practical matters. P/NP or letter grading.

**182. Nonverbal Communication in Architecture. (4)** Lecture, four hours. Study of how elements of design and style of various buildings in architectural history send messages to viewers and users of such buildings. Letter grading.

**183. Media and Mind. (4)** Lecture, three hours. Investigation of media persuasion and entertainment appeal through three intersecting approaches: study of cognition, reflection on personal experience, and hands-on analysis of television, film, and radio. Topics include perception, imagination, narrative, play, emotion, and dreams. Students collaborate with each other to assemble media critiques and create their own short stories. P/NP or letter grading.

**185. Field Studies in Communication. (2 to 4)** Lecture, two hours. Designed for juniors/seniors. Fieldwork in communication. Students participate in two-hour seminar sessions and spend seven hours in approved community settings each week for each 2 units of credit. May be taken for maximum of 4 units per term. P/NP grading.

**186. Media, Ethics, and Digital Age: Case-Study Approach. (4)** Lecture, three hours. To publish or not to publish? Study addresses questions of media ethics—and ethics more broadly—using case-study method to debate pressing issues from actual newsrooms. Students participate in Socratic discussion of fairness, bias, and personal and societal implications of printed, broadcast, and digitized word. Letter grading.

**187. Ethical and Policy Issues in Institutions of Mass Communication. (4)** Lecture, three hours. Intensive examination of ethical and policy issues arising from interaction of media institutions (print, film, broadcasting, and new technologies) and societal institutions (Congress, federal agencies, courts, Presidency, schools, churches, political action groups, advertisers, and audiences). P/NP or letter grading.

**188. Careers in Communication. (1)** Seminar, two hours. Rigorous study of communication theories, research methods, and applications prepares students to succeed in multiple fields, including technology, entertainment, journalism, non-profit, law, education, politics/government, and management. Provides practical support and skill development that helps students transition to being professional in workplace. Consultation of successful industry professionals from variety of fields to understand how they leveraged their education to excel within their organizations. P/NP grading.

**188A. Variable Topics in Mass Communication and Media Institutions. (4)** Lecture, four hours. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. Letter grading.

**188B. Variable Topics in Interpersonal Communication. (4)** Lecture, three hours. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. Letter grading.

**188C. Variable Topics in Communication Technology and Digital Systems. (4)** Lecture, four hours. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**188D. Variable Topics in Political and Legal Communication. (4)** Lecture, four hours. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**188E. Variable Topics: Practicum. (4)** Lecture, three hours. Practicum lectures on selected topics in communication. Reading, writing, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars: Mass Communication and Media Institutions. (4)** Seminar, three hours. Research seminars on selected topics in mass communication. Reading, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**191B. Variable Topics Research Seminars: Interpersonal Communication. (4)** Seminar, three hours. Research seminars on selected topics in interpersonal communication. Reading, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**191C. Variable Topics Research Seminars: Communication Technology and Digital Systems. (4)** Seminar, three hours. Research seminars on selected topics in communication technology and digital systems. Reading, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**191D. Variable Topics Research Seminars: Political and Legal Communication. (4)** Seminar, three hours. Research seminars on selected topics in political and legal communication. Reading, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**M191DC. CAPPP Washington, DC, Research Seminars. (8)** (Same as History M191DC, Political Science M191DC, Public Affairs M191DC, and Sociology M191DC.) Seminar, three hours. Limited to CAPPP Program students. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based

field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**191E. Variable Topics Research Seminars: Practicum. (4)** Seminar, three hours. Practicum seminars on selected topics in communication. Reading, writing, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**194. Research Group Seminars: Communication Studies. (2)** Seminar, two hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field or of research of faculty members or students. May be repeated for credit. P/NP grading.

**195. Summer Internships. (4)** Tutorial, to be arranged. Internship in supervised setting in community agency or business. Students meet with adviser and provide final reports of their experiences. May be repeated for credit. Individual contract with supervising faculty member required. Offered in summer only. P/NP grading.

**195DB. UCLA Daily Bruin and Student Media Internship. (2)** Tutorial, one hour. Limited to students participating in Daily Bruin. Intended to help students get most benefit from their internship experience with UCLA student media. Students meet biweekly with instructor, provide periodic reports on their experience, and engage with industry mentors. May be taken for maximum of 12 units. P/NP grading.

**197. Individual Studies in Communication Studies. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject area required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A-198B-198C. Honors Research in Communication Studies. (4-4-4)** Tutorial, three hours. Limited to junior/senior majors. May be repeated for credit. Individual contract required. Letter grading. **198A.** Requisites: courses 10, 150. Development of comprehensive research project under direct supervision of faculty member. **198B.** Requisite: course 198A. Continuation of work initiated in course 198A. Presentation of summary of data gathered and relevant progress to supervising faculty member. **198C.** Requisite: course 198B. Completion of research developed in courses 198A, 198B. Presentation of honors project to supervising faculty member.

**199. Directed Research or Senior Project in Communication Studies. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Theories in Communication Science. (4)** Seminar, three hours. Exploration of theoretical and methodological approaches that bridge major areas of current interdisciplinary communication science research. S/U or letter grading.

**205. Professional Pathways. (1)** Seminar, one hour. Earning PhD in any of allied social, cognitive, and computational sciences can support multiple career paths. Doctoral students are exposed to range of career pathways. Each meeting focuses on one possible career path and features guest speaker who works in that particular industry. S/U grading.

**210. Communication Speaker Series. (2)** Seminar, 90 minutes. Designed for graduate students in social and natural sciences. Weekly speaker presentations in communication sciences. Focus on interdisciplinary approaches to psychological, political, and computational communication. S/U grading.

**215. Communication Research Laboratory. (1)** Research group meeting, one hour. Limited to graduate students. Designed for graduate students in social and natural sciences. Discussion of current research

issues and preliminary findings. Opportunities for feedback on current and proposed research activity. Assigned readings included. May be repeated for credit. S/U grading.

**220. Research Methods in Communication Science. (4)** Seminar, three hours. Study of how communication science research is conducted with focus on quantitative methodology. Students gain understanding of tools used to conduct research, and experience with these tools through formulating own research ideas and projects. S/U or letter grading.

**230. Communication and Cognition. (4)** Seminar, three hours. Exploration of how cognitive processes underlie multiple aspects of communication, including its evolutionary and biological underpinnings, its relevance for broad types of communication (e.g., interpersonal and mass media), and its integrative capacity across multiple areas of social science research. S/U or letter grading.

**231. Advances in Science of Interpersonal Human Communication. (4)** Seminar, three hours. Examination of quantitative approaches to interpersonal communication processes. Topics include measuring human interactive behavior, experimentation and observational research contexts, and testing theories of human interactive behavior using computational models. S/U or letter grading.

**232. Infant Communication. (4)** Seminar, three hours. Covers topics in development of interpersonal communication during infancy including neural and social mechanisms, role of culture, clinical issues, and research methodology. S/U or letter grading.

**M232C. Cognitive Artificial Intelligence. (4)** (Same as Statistics M232C.) Lecture, three hours. Recommended requisites: Statistics M232A, M232B. Demonstration of how to build artificial intelligence by following principles of human intelligence revealed by cognitive science, including learning from small data, expressing causality of physical world, and inferring mental states of others for intuitive social interactions. Draws from statistical modeling, cognitive science, artificial intelligence, computer vision, and robotics. S/U or letter grading.

**233. Evolution, Sex/Gender, and Communication. (4)** Seminar, three hours. Sex—typically, male versus female—is fundamental social category with broad social and biological relevance. It influences our interests, preferences, social strategies, how we communicate with others. It also influences what others expect from us. Within context of this course, term gender refers to one's location on continua of femininity (female-typical) and masculinity (male-typical), including identifying as neither male- nor female-typical. Like sex, gender affects how we approach social world and how social world responds to us. Exploration of deep evolutionary foundations of sex and gender, and their modern manifestations. Topics covered may include evolutionary mismatches between ancestral past and modern present, sex/gender and mass media, navigating world of shifting gender norms, and how sex/gender influences interpersonal relationships and sexuality. S/U or letter grading.

**M234. Social Vision. (4)** (Same as Psychology M222G.) Seminar, three hours. Exploration of nascent field of social vision, with emphasis on how observers utilize visible cues in face and body to form impressions of other people and how these perceptions are moderated by existing knowledge structures and motivations. S/U or letter grading.

**235. Evolution of Vocal Communication. (4)** Seminar, three hours. Examination of current research in evolutionary approaches to vocal communication. Topics include introduction to acoustic phonetics, animal signaling, and social communication. S/U or letter grading.

**236. Humans and Machines. (4)** Seminar, three hours. Examination of communication in human-machine interactions, exploring idea that well-established psychological processes play critical roles in interactions with non-social objects. Examination of social psychology of perception across distinct sensory modalities (shape, motion, voice, touch). Study of social psy-

chological processes between humans and non-human entities (objects, computers, robots). S/U or letter grading.

**237. Prediction and Conjecture in Communicative Behavior. (4)** Seminar, three hours. Examination of range of domain-specific communicative conjectures. In advertising, conjectural dimensions of communication play central role in structuring historical development of strategies and innovations. Examination of phenomenon of resistance and introduction of concept of communicative potential. In entertainment, examination of cognitive processes of viewpoint projection, playful exploration of new forms of interaction, and investigation of development of heuristics for creatively constraining searches in infinite possibility spaces. In education, consideration of dynamics of student and instructor dialogically developing conjectural plans for guiding student cost-effectively into productive new spaces of learning. In context of television news and other forms of broadcast communication, examination of role of verbal and non-verbal signals in opening and closing conjectural discursive spaces. S/U or letter grading.

**250. Political Communication. (4)** Seminar, three hours. Consideration of determinants of media content and degree to which Americans' political opinions and actions are influenced by that content. Specific topics include history of news media, recent media trends, theories of attitude formation and change, media bias, role of sources in construction of news, economics of news production and consumption, ways in which media shape public perceptions of political world, campaign communication, and general role of mass media in democratic process. S/U or letter grading.

**251. Presidential Communication. (4)** Seminar, three hours. Examination of one vital source of presidency's burgeoning power: president's unmatched communication power. Study of historical evolution of president's communication environment, resources, and strategies. Exploration of how presidential campaign communication has evolved over time, and implications of this evolution for how presidents govern. S/U or letter grading.

**252. Political Parties and Strategic Partisan Communication. (4)** Seminar, three hours. Examination of theories about how political parties operate in countries around world. Covers topics including normative role of parties in modern democracies, reasons why parties exist, party competition, electoral systems, variation in number and types of parties across countries, party identification, voting, and internal party dynamics. S/U or letter grading.

**253. Affective Political Communication. (4)** Seminar, three hours. Consideration of role that affect plays in production and consumption of political news, and in political communication, behavior, and psychology. S/U or letter grading.

**270. Computational Communication. (4)** Seminar, three hours. New computational methods developed and applied for communication research along with massive datasets and computing infrastructure enable large-scale quantitative analyses on human communication and activities at scale. Introduction to state-of-art methods in computational social science and how they can apply in communication research. S/U or letter grading.

**271. Networks. (4)** Seminar, three hours. Covers theory and applications from scientific study of networks. Students learn to use network analysis and visualization software and collect and analyze original network data. S/U or letter grading.

**272. Cognitive Artificial Intelligence. (4)** Seminar, three hours. Study demonstrates how to build artificial intelligence by following principles of human intelligence revealed by cognitive science. These principles include learning from small data; capturing causality of physical world; inferring others' mental states for intuitive cooperation and communication. To achieve this goal, tools are drawn from cognitive science, social sciences, artificial intelligence, computer vision, and robotics. S/U or letter grading.

**273. Big Data Analysis with Machine Learning. (4)** Seminar, three hours. Preparation: familiarity with coding (Python or R) and basic statistical analysis. Introduction to advanced machine learning methods that can apply to large-scale datasets in text, audio, and visual data modalities. Students learn how to develop, train, and validate machine learning models and apply methods to their own research. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Limited to Communication graduate students. Directed study on variable topics in consultation with faculty member. S/U or letter grading.

**597. Preparation for PhD Qualifying Examination. (2 to 12)** Tutorial, to be arranged. Limited to Communication PhD graduate students. Reading and preparation for PhD qualifying examination. Mandatory and supplemental reading lists approved by student advisory committee. May be repeated for credit as necessary with consent of adviser. S/U grading.

**599. Research for PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Preparation: successful completion of qualifying examinations. Limited to Communication PhD graduate students. May be repeated for credit. S/U grading.

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## COMMUNITY ENGAGEMENT AND SOCIAL CHANGE

*Interdisciplinary Minor  
College of Letters and Science*

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Los Angeles, CA 90095-1571

**Community Engagement and Social Change**

310-825-7867

**E-mail contact**

Andrew G. Atkeson, PhD, *Chair*

## Faculty Committee

Andrew G. Atkeson, PhD (*Economics*)  
Jennifer A. Jay, PhD (*Civil and Environmental Engineering, Environment and Sustainability*)  
Rashmita S. Mistry, PhD (*Education*)  
Amy E. Ritterbusch, PhD (*Social Welfare*)  
Rafael Romero, PhD (*Biomedical Research*)  
Ananya Roy, PhD (*Geography, Social Welfare, Urban Planning*)  
David Delgado Shorter, PhD (*Anthropology, Gender Studies, World Arts and Cultures/Dance*)

## Overview

The Community Engagement and Social Change minor is designed to provide students with a core analytical, experiential, and theoretical framework for understanding three intersecting dimensions of civic engagement at the local level: issues of social inequality, modes of social change, and the community in which the

engagement takes place. The minor can be paired with any major as an applied and active way of putting disciplinary tools to use, and is intended for highly motivated students of any ideological perspective who are committed to education among a broader community of learners.

Students complete a core curriculum, elective courses, a course on a strategy of social change, and a community-engaged capstone research project examining a social issue in a specific Los Angeles community context.

## Undergraduate Minor Community Engagement and Social Change Minor

The minor is an interdisciplinary program that creates a unique opportunity for students to examine social inequality and strategies for social change through sustained community engagement in Los Angeles and beyond. It complements any major.

Students have a lower-division or upper-division option for their gateway community-engaged course in the minor, then choose two additional community-engaged learning experiences, a strategy for social change course, and an upper-division elective.

### Capstone

Students complete a two-quarter capstone course series in which they learn about different forms of community-engaged research that is conducted with and to benefit a community partner. Working in collaboration with a non-profit organization, students prepare a community-engaged research proposal and then complete a research paper. Integrated into the capstone course, students develop an e-Portfolio that conveys their journey through the minor.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better, submit a completed application, and submit a written statement describing how civic engagement relates to their academic interests or career goals. [Digital applications](#) are available.

### The Minor

*Required Core Courses (17 to 20 units):* Community Engagement and Social Change 50XP or 100XP with a grade of B or better; two additional community-engaged courses (at least one of which must be upper division) from American Indian Studies C122XP, Anthropology 116XP, Arts Education M192XP, Asian American Studies 104A, 104B, 140XP, M166A, M166B, M166C, Chicana/o and Central American Studies 100XP, M122, M134XP, M156A, M156B, M156C, Community Engagement and Social Change 100XP, 105XP, 108XP, M110XP, 133XP, M134XP, 163SL, 165XP, M170XP, M175SL, M188XP, Economics 173AX, 173BX, M188XP, Education 130AX, European Languages and Transcultural Studies C101XP, Gender Studies 120SL, History M181SL, Hon-

ors Collegium 127, Labor Studies M122, M134XP, M166A, M166B, M166C, Lesbian, Gay, Bisexual, Transgender, and Queer Studies 180XP, Mathematics 73XP, 74XP, 75XP, Science Education 100XP, Spanish M165XP, Statistics 140XP, 141XP, M171, Urban Planning M171, 185XP, World Arts and Cultures 177XP, any 195CE course, or other courses that include a substantive community-engagement experience; and one upper-division elective course from the community-engaged options above or from African American Studies M167, M173, American Indian Studies C121, Anthropology 138P, M138Q, Asian American Studies M108, 141AX, 141BX, M143A, Chicana/o and Central American Studies CM106, M122, 123, M127, M128, 129, M144, 172, C179, Community Engagement and Social Change M115, 145, 180, Economics 131, M135, 137, Education 165, English Composition 130D, 134, Gender Studies M186B, History M146B, Labor Studies 181, 182, Philosophy 150, C156, 157A, 157B, Political Science M105, 112A, Psychology 129C, 133G, 175, Public Affairs 114, Public Policy 105, Sociology 113, M115, 143, 156, 158, Urban Planning M122, M171, World Arts and Cultures 100A, 100B, 144, 160 or courses that meet requirements for the UCLA Quarter in Washington program or the UC Center Sacramento program.

*Required Strategy of Social Change Course (4 to 5 units):* One course from African American Studies M167, American Indian Studies C120, C130, Art M186A, Asian American Studies M163, Chicana/o and Central American Studies M127, M130, M186A, Community Engagement and Social Change M122XP, 150, 152, M188XP, Disability Studies 111, Economics M135, 173AX, 173BX, Education 156, Labor Studies M117, M127, 152, M167, M175, 179B, Political Science M105, 141B, 171D, 172, Public Policy 105, C115, Social Welfare 102, 132, World Arts and Cultures 100A, M125A, or other by petition.

*Required Capstone (8 units):* Community Engagement and Social Change 191AX, 191BX, with grades of B or better.

### Policies

Students may petition to apply one lower-division community-engaged course, one upper-division community-engaged course, or one upper-division elective not listed above toward the minor. Transfer students may petition to have a community-engaged course taken at a prior institution applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 3.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Capstone

Community Engagement and Social Change 191AX and 191BX must be completed with grades of B or better. Students must have completed the core courses requirement, and at

least one other community-engaged course prior to enrolling in the Community Engagement and Social Change 191AX. Students that are a part of the Astin Scholars program may have the courses Community Engagement and Social Change M180A, M190B, and M190C satisfy the capstone requirement. Students may petition to have a capstone sequence completed for their major satisfy the minor's capstone requirement. Petitions are reviewed on a base-by-case basis, and are assessed by how closely the major capstone requirements align with desired learning outcomes associated with the minor's capstone requirement. Students may also petition to complete the capstone under the guidance of a faculty sponsor through independent research, Community Engagement and Social Change 199, after completing 191AX. The faculty mentor approves proposed readings as well as length and scope of the final paper or project based on guidelines developed by the faculty committee.

## Community Engagement and Social Change Lower-Division Courses

**10. Introduction to Engaged Scholarship. (2)** Seminar, two hours. Limited to students participating in preapproved UCLA civic engagement programs. Introduction to history, research, and philosophy of general University/community partnerships, as well as specific opportunities for active engagement by undergraduate students at UCLA. Offered in summer only. P/NP grading.

**18. Bruin Leaders: Model for Social Change. (1)** Lecture, two hours; fieldwork, one hour. Introduction to leadership development and civic engagement through community service. Based on nonhierarchical mode of leadership developed by UCLA Graduate School of Education and Information Studies. Topics include diversity issues, organizational skills and team-building development, and personal growth and community service goals. Participation in first-week orientation session required. Consult Schedule of Classes for topics to be offered in specific term. May not be repeated for credit. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**50XP. Engaging Los Angeles. (5)** (Formerly numbered 50SL.) Lecture, two hours; discussion, two hours. Community-engaged learning course with focus on diverse communities of Los Angeles. Analysis of general shared history of Los Angeles. Comparing or contrasting of experiences of several different racial/ethnic groups. Engagement in meaningful work off campus to reflect on assets, injustices, and inequities that have shaped experiences of native or immigrant communities. Analysis of Los Angeles in which residents coexist and interact while managing tensions and social justice issues inherent in minority/majority city. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental read-



ings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**95A-95B. Introduction to Community-Based Internships. (2-4)** Tutorial, one hour; fieldwork, four hours (course 95A) and 10 hours (course 95B). Course 95A is not requisite to 95B. Introduction to community-based work for students in specialized UCLA scholarship programs. Platform for preplanned, organized, structured, and supervised off-campus experiences with academic context. Acceptable placements include corporate, nonprofit, and governmental organizations that meet criteria for undergraduate internships as established by Center for Community Engagement. Individual contract with supervising faculty member required. P/NP or letter grading.

**95CE. Introduction to Community-Based Internships. (2)** Tutorial, one hour; fieldwork, four hours. Introduction to community-based work for third-term freshman/sophomore students who have not completed 90 units. Platform for preplanned, organized, structured, and supervised off-campus experiences with academic context. Acceptable placements include corporate, nonprofit, and governmental organizations that meet criteria for undergraduate internships as established by Center for Community Engagement. May be repeated once for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**98A. Leadership and Social Change. (2)** Seminar, two hours. Exploration of different modes of leadership and consideration of how effective leadership can bring about positive social change. We live in period of extraordinary opportunity and challenge—in which breathtaking technological advances sit alongside breathtaking cynicism and corruption. Examination of how effective and inspiring leaders can lead in such environment, if it is possible to make difference and effect change in face of deep structural inequality, criteria that make effective leader, and if each of us bears within ourselves leadership potential. Exploration of past models of successful leadership and different models of present-day leadership, drawing on inspiring examples from social activism, politics, religion, law, philanthropy, and education. Students are encouraged to formulate their own models of leadership. Three to four day experiential learning opportunity in leadership development off campus. P/NP grading.

**98B. Organizational Analysis and Workforce Readiness. (2)** Seminar, two hours. Requisite: course 98A. Analytic training on how to study institutions and organizations. Students identify, contact, and interview practitioner from work area of interest. Site visits to various working environments in Los Angeles area. Analytics training on how to study institutions and organizations and prepare research briefs on organizations/institutions to be visited. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100XP. Perspectives on Civic Engagement for Social Justice. (5)** (Formerly numbered 100SL.) Seminar, three hours. Community-based learning course. Examination of theories and concepts of civic engagement as means to achieve social justice. Exploration of what informs and influences student theories of change. Reflection on these concepts through work in collaboration with select community-based organizations dedicated to changing status quo with regard to power and opportunity in Los Angeles. Letter grading.

**102. Reflections on Alternative Spring Break. (2)** Seminar, two hours. Limited to students who have participated in USAC Community Service Commission Alternative Spring Break immediately prior to Spring Quarter. Discussion of role of higher education initia-

tives in civic identity formation, with specific attention to reflection on Alternative Spring Break experiences. P/NP or letter grading.

**105XP. Client-Based Program Evaluation and Research. (4)** (Formerly numbered 105SL.) Seminar, three hours; fieldwork, 10 hours. Limited to juniors/seniors. Service learning course for undergraduate students and community partners through which students learn theory and practice of program evaluation. Evaluation of nonprofit organizations in Los Angeles by research teams. Offered in summer only. Letter grading.

**107. Counseling Multicultural Communities. (2)** Seminar, six hours. Prospective AAP peer counselors are equipped to understand unique challenges that students from historically underrepresented communities may face during their transition to UCLA. Participants also gain deeper understanding of cultural capital with which those students enter UCLA while reflecting on their own experiences. Participants define their roles as UCLA peer counselors, and reflect on how students' cultural backgrounds and educational experiences empower them to achieve academic and personal development. P/NP grading.

**108XP. Introduction to Early Childhood Education: Civic Engagement Perspectives. (4)** (Formerly numbered 108SL.) Lecture, three hours; fieldwork, eight hours. Limited to students who are participating members of Jumpstart AmeriCorps literacy program. Service learning course on early childhood development and civic engagement. Overview of child development theory as well as examination of policies and systems that impact practice of preschool education. Discussion about history and future of civic engagement movement designed to engage diverse groups of committed stakeholders in reaching common goal. P/NP or letter grading.

**M110XP. Community-Based Studies of Popular Literature. (5)** (Formerly numbered M110SL.) (Same as English M115XP) Lecture, four hours; discussion, one hour (when scheduled); fieldwork, two hours. Enforced requisite: English Composition 3. Service learning course that examines history and development of one or more genres of popular literature, with attention to contemporary communities of readers and writers and formation of civil society. Topics vary and may include children's literature and childhood literacy, mass market fiction and book club culture, or science fiction and science policy. Service-learning component includes meaningful work with local nonprofit organizations selected in advance by instructor. May be repeated for credit with topic change. P/NP or letter grading.

**M115. Citizenship and Public Service. (4)** (Same as Political Science M115C.) Lecture, three or four hours; discussion, one hour (when scheduled). Recommended requisite: Political Science 10. Designed for juniors/seniors. Study of ways in which political thinkers have conceived of ideas of citizenship and public service, how these ideas have changed over time, and frameworks for thinking about citizenship in era of markets and globalization. P/NP or letter grading.

**M121. Race, Gender, and Data. (4)** (Same as Digital Humanities M121.) Seminar, three hours. Requisite: Digital Humanities 101. Data plays a crucial role in political representation, governmental resource allocation, and policy decisions. Investigation of how data does or does not ascribe a quantitative value to a human life by employing a community-engaged emphasis to study how emerging digital models link data with social justice organizing. Students learn to read datasets produced by governmental entities such as the U.S. Census Bureau, Bureau of Labor Statistics, and Department of Health and Human Services. Assignments include working on a community-engaged data project that evaluates and addresses key concerns facing communities-of-color. Introduction to critical data studies and applied data ethics. Studio sessions include lessons on finding and analyzing datasets relevant to racial and gender justice themes; and to generating data visualizations, digital stories, and maps using the latest software tools. No prior knowledge of statistics or quantitative analysis is required. P/NP or letter grading.

**M122XP. Philanthropy as Civic Engagement. (5)** (Formerly numbered M122.) (Same as Honors Collegium M123XP) Seminar, three hours. Limited to juniors/seniors; application required. Study of history, philosophy, and practice of philanthropy. Practical experience in setting priorities and making philanthropic investments in Los Angeles-based nonprofit organizations. Letter grading.

**130. Intercultural Communication in Global Workplace. (4)** Seminar, three hours. Students enrolled in international summer internships draw on their own and each other's experiences to critically think about intercultural communication, and to draw insights from that academic literature to define and build intercultural communication competencies in context of workplace environment. P/NP or letter grading.

**133XP. Topics in Community-Engaged Research: Theory and Practice. (5)** (Formerly numbered 133SL.) Seminar, three hours; fieldwork, two hours. Service learning course that examines variable topics related to theory and practice of community-based research. Service learning component includes meaningful work with community partners selected in advance by instructor and Center for Community Learning. May be repeated for credit with topic or instructor change. Letter grading.

**M134XP. Engaging Immigrants and Their Families. (5)** (Formerly numbered M134SL.) (Same as Chicana/o and Central American Studies M134XP and Labor Studies M134XP) Lecture, two hours; discussion, two hours; field placement, two hours. Survey and exploration of immigrant landscape in Los Angeles—truly global city acting in part to buffer, settle, and incorporate immigrants in daily life. Focus on civil society to explore multiple forms of interventions and impacts that take place in multiple communities across Los Angeles basin. Service learning partnerships focus on organizations addressing immigration concerns. Letter grading.

**145. Conflict, Power, Inequality, and Change. (4)** Lecture, four hours. Broad historic trend of systems in conflict since beginnings of colonialism, including capitalism, urbanism, liberalism, and neoliberalism. Examination of modalities and theories of conflict and transformation, with emphasis on three primary forms of societal conflict: social movements, war, and terrorism. Study of resource scarcity through two specific dimensions: how it is leveraged to meet political ends, and how it can be harnessed for conflict intervention, resolution, transformation, and prevention. P/NP or letter grading.

**M147. Critical Analysis of Strategies toward Environmental Justice. (4)** (Same as Environment M147.) Lecture, three hours. Exploration of and engagement in critical analyses of strategies toward environmental justice including environmental education, civic ecology, environmental stewardship, policy advocacy campaigns, citizen science, community engagement, community planning, and urban tree canopy. Strategies are interwoven across four interconnected modules: community exposure to harm; access to ecosystem benefits and services; lack of diversity and engagement; and utilization of social-ecological systems approach. Students conduct case study analysis of strategies employed in efforts to move toward environmental justice, and develop collective course resource on environmental justice strategies. P/NP or letter grading.

**150. Social Innovation Theory and Application. (4)** Seminar, three hours. Limited to students in UCLA Summer Social Innovation Research Program. Study of social innovation as theory of civic engagement, with particular emphasis on how social innovators have transformed way we address entrenched social issues. Study of elements of existing social innovation models and strategies for employing methods of social change on campus and in communities. Offered in summer only. Letter grading.

**151. Documentary Film Making as Strategy for Social Change. (4)** Lecture, two hours; discussion, two hours. Survey of selection of documentary films diverse in genre (advocacy, observational, essayistic, ego document, archival) and subject (war, exploitation, incarceration, ecosystem collapse, revolution, genocide). Discussion of films in their historical and artistic



context, and in way they are vehicles for community engagements and social change. P/NP or letter grading.

**152. Exploring Social Change: Critical Analysis through Lens of Community Organizing. (4)** Lecture, four hours. Exploration of theories driving social change and how visions and agendas get organized toward common efforts. Analysis of organizing frameworks through specific movements for social, economic, and political change. Introduction to praxis, defined by Paulo Freire in *Pedagogy of the Oppressed* as “reflection and action directed at the structures to be transformed.” P/NP or letter grading.

**163SL. Civic Engagement and Public Use of Knowledge: Special Topics. (5)** Seminar, three hours; fieldwork, three hours. Limited to juniors/seniors. Service learning course that examines variable topics related to University/community partnerships and role of civic education in higher education. May be repeated for credit with topic or instructor change. Letter grading.

**165XP. Storytelling for Social Justice: Research and Writing with Nonprofit Organizations. (5)** (Formerly numbered 165SL.) Seminar, three hours; fieldwork, two hours. Limited to juniors/seniors. Exploration of how nonprofit organizations use storytelling strategies to advance social justice. Offers opportunity to use research and writing skills telling stories of social justice through print and online media. Students collaborate with nonprofit organizations to complete research and communication projects. Special focus on how storytelling can empower individuals and communities and advance equity in diverse urban centers like Los Angeles. Letter grading.

**M170XP. Food Studies and Food Justice in Los Angeles. (4)** (Formerly numbered M170SL.) (Same as Food Studies M170XP.) Seminar, three hours; fieldwork, two hours. Interdisciplinary service learning course that provides general understanding of access and equity issues related to food chain in Los Angeles. Exploration of social justice issues faced by residents of lower-income communities. Reading of research from multiple disciplines, including but not limited to public health, environmental justice, and public policy. Service-learning component includes meaningful work with off-campus community partners selected in advance by instructor and Center for Community Learning. Letter grading.

**172XP. Community-Engaged Research to Address Health Disparities. (4)** Lecture, three hours; fieldwork, three hours. Examination of use of community-engaged research to understand and address health disparities in minority communities. Focus on chronic disease disparities: inequities in risk and outcomes from conditions such as hypertension, diabetes, obesity, heart disease, chronic pulmonary diseases, autoimmune disorders, and HIV. Examination also of role these conditions play in COVID-19 risk and disparities, and role that community-engaged strategies can play in preventing or reducing health disparities. Includes case studies, discussions with community partners and researchers, and assignments to explore impact of community engagement on chronic disease disparities and to mitigate inequitable impact of COVID-19. Student teams partner with community organizations and develop partnered project, with deliverable to community partner due at end of course. P/NP or letter grading.

**M175SL. Addressing Social Determinants in Racial/Ethnic Minority Communities to Reduce and Prevent Health Disparities. (4)** (Same as Psychology M175SL.) Seminar, two hours; fieldwork, 10 hours. Examination of how addressing social determinants in racial/ethnic minority communities can reduce or eliminate physical and mental health disparities. Currently in racial and ethnic minority communities, health status of individuals can be function of built environment, exposure to pollutants and toxins, scarcity of supermarkets or stores with fresh produce and nutritional food, noise levels, and variety of other stressors and unhealthy conditions. Health interventions are often focused on individual-level change or increases in access to healthcare with little in way of changing risk environments. Designed to identify and provide opportunities to understand how to address social determinants related to negative health outcomes in ra-

cial/ethnic minority neighborhoods and communities and to experience how to use social determinants literature in service of collaborative activities with community organizations. P/NP or letter grading.

**M176XP. Making Films about Food. (5)** (Formerly numbered M176SL.) (Same as Food Studies M176XP and Public Affairs M176XP) Lecture, three hours. Introduction to documentary video production and distribution. Students work on assignments in pairs and small groups to create 8- to 10-minute video about one of several Los Angeles partner organizations that advocate for healthy, local, sustainable food. Consideration, through video production, of challenges posed by existing farming, ranching, and distribution methods, and strategies these groups are pursuing to create more sustainable food pathways. Students look at social media communication strategies to help think through intervention in face of historically entrenched industrial food production and regulations that remain favorable to mass-produced, processed food items. P/NP or letter grading.

**180. Access to Justice: Hope and Reality. (4)** Seminar, three hours. Limited to UCLA students who are members of JusticeCorps program through AmeriCorps. JusticeCorps was established as innovative approach to solving one pressing issue faced by courts around country today: providing equal access to justice. Examination of promise of justice system in America to provide meaningful access to courts for all who seek it. What premises underlie structure of U.S. legal system? Exploration of sociopolitical context for current legal system, including origins and current status of legal services and self-help movements, including role of JusticeCorps. Were these strategies designed to make promise of equal justice a reality or have they inadvertently, or intentionally, resulted in two-tiered legal system—one for those with means and another for those without? P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**M188XP. Practicum in Social Entrepreneurship. (4)** (Formerly numbered M188.) (Same as Economics M188XP) Seminar, three hours. Enrollment by consent of instructor. Offers students full-scale immersion into challenges of launching social enterprise. Students work in teams alongside staff of local nonprofit organizations in 10-week social enterprise accelerator program aimed at helping participating organizations secure financial and operational resources they need to implement social enterprise for which viable business plan has already been constructed. Students meet assigned organization, study its business plan, and work with instructors of course and staff of nonprofit organization to develop tailored plan of work for 10-week accelerator program. Students carry out work in conjunction with staff of organization under supervision of instructors and with assistance of experienced entrepreneur volunteer mentors. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor.

May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**M190A. Introduction to Community-Engaged Research. (4)** (Same as Labor Studies M190A.) Seminar, three hours. Enrollment by consent of instructor. Designed for students participating in Astin Community Scholars Program. Introduction of principles of community-engaged research. Exploration of intentions behind doing research with community residents and organizations, our responsibilities when conducting research in historically disenfranchised communities, and relationship between socially-just research outcomes and methodologies. P/NP or letter grading.

**M190B. Community-Engaged Research in Practice: Community Scholars. (4)** (Same as Labor Studies M190B.) Seminar, three hours. Requisite: course M190A. Enrollment by consent of instructor. Designed for students participating in Astin Community Scholars Program. Students learn from faculty, community stakeholders, graduate students, and key academic experts about emerging organizing models, best practices, and changing landscape in chosen topic. Provides students with opportunity to work with leaders from key community and labor organizations across Los Angeles on six-month dynamic participatory research project. Focus on current topic affecting Angelenos and neighboring communities. Key outcomes may include production of policy reports, popular education materials, and/or book publication by UCLA Labor Center and collaborative partners. Primary focus on engaging policy makers and other change agents. P/NP or letter grading.

**M190C. Community-Engaged Research in Practice: Community Scholars. (4)** (Same as Labor Studies M190C.) Seminar, three hours. Requisites: courses M190A, M190B. Enrollment by consent of instructor. Designed for students participating in Astin Community Scholars Program. Students learn from faculty, community stakeholders, graduate students, and key academic experts about emerging organizing models, best practices, and changing landscape in chosen topic. Provides students with opportunity to work with leaders from key community and labor organizations across Los Angeles on six-month dynamic participatory research project. Focus on current topic affecting Angelenos and neighboring communities. Key outcomes may include production of policy reports, popular education materials, and/or book publication by UCLA Labor Center and collaborative partners. Primary focus on engaging policy makers and other change agents. P/NP or letter grading.

**191AX. Capstone Research Seminar. (4)** (Formerly numbered 191A.) Seminar, three hours. Provides students with analytical and applied framework for process of researching historical and contemporary social issues and efforts to bring about change in local communities. Letter grading.

**191BX. Capstone Research Seminar: Projects. (4)** (Formerly numbered 191B.) Seminar, three hours. Provides students with analytical and applied framework for process of researching historical and contemporary social issues and efforts to bring about change in local communities. Culminates in capstone research project, typically length required of publishable journal articles (15-25 pages). Students' research should be implementation of design completed in course 191A, and should be informed by their coursework in the minor. Letter grading.

**195CE. Community and Corporate Internships in Community Engagement and Social Change. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend bi-

weekly meetings with graduate student instructor, and write final research paper. Faculty mentor and graduate student instructor construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Engagement. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195DC. Quarter in Washington, DC, Internships. (4)** (Same as History M195DC, Political Science M195DC, Public Affairs M195DC, and Sociology M195DC.) Tutorial, four hours. Limited to junior/senior Quarter in Washington program students. Internships in Washington, DC, through Center for American Politics and Public Policy. Students meet on regular basis with instructor and provide periodic reports of their experience. Individual contract with supervising faculty member required. P/NP grading.

**198. Honors Research in Civic Engagement. (4)** Tutorial, one hour. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Civic Engagement. (4)** Tutorial, to be arranged. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated once for credit. Individual contract required. Letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# COMMUNITY HEALTH SCIENCES

*Jonathan and Karin Fielding School of Public Health*

36-071 Center for Health Sciences  
Box 951772  
Los Angeles, CA 90095-1772

**Community Health Sciences**

310-825-5308

Gilbert C. Gee, PhD, *Chair*

May Sudhinaraset, PhD, *Vice Chair*

## Faculty Roster

### Professors

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Chandra L. Ford, PhD, MPH, MLIS  
Gilbert C. Gee, PhD  
Jessica D. Gipson, MPH, PhD (*Fred H. Bixby Professor of Population Policy*)  
Kimberly D. Gregory, MD, MPH, *in Residence*  
Robert J. Kim-Farley, MD, MPH, *in Residence*  
Randall S. Kuhn, PhD  
James A. Macinko, PhD  
Michael L. Prelip, DPA, MPH, CHES  
Michael A. Rodriguez, MD, MPH  
Dawn M. Upchurch, PhD, LAC  
Ondine S. von Ehrenstein, MPH, MS, PhD  
May C. Wang, MPH, DrPH

### Professors Emeriti

Deborah C. Glik, ScD  
Michael S. Goldstein, PhD  
Isabelle F. Hunt, DrPH, RD  
Marjorie Kagawa-Singer, PhD, MA, MN, RN  
Virginia C. Li, MPH, PhD  
Donald E. Morisky, ScD, MSPH, ScM  
Alfred K. Neumann, MD, MA, MPH, FABPM  
Charlotte G. Neumann, MD, MPH  
Anne R. Pebley, PhD (*Fred H. Bixby Professor Emerita of Population Policy*)  
Kimberly I. Shoaf, DrPH  
Judith M. Siegel, PhD, MSHyg

### Associate Professors

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Philip M. Massey, PhD, MPH  
May Sudhinaraset, PhD  
Courtney S. Thomas Tobin, PhD  
Jennifer A. Wagman, PhD, MHS

### Assistant Professor

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### Lecturer

Bonnie Taub, PhD

### Adjunct Professors

Diana M. Bontá, DrPH, RN  
Elizabeth D'Amico, PhD  
Sheba M. George, PhD  
Ronald J. Halbert, MD  
Ilan H. Meyer, PhD  
Wendelin M. Slusser, MD, MS  
Samuel J. Stratton, MD, MPH  
Paula A. Tavrow, PhD  
Deborah R. Young, PhD

### Adjunct Associate Professors

Alina H. Dorian, PhD  
Dena R. Herman, MPH, PhD, RD  
Cathy M. Lang, MPH, PhD  
Shira C. Shafir, MPH, PhD

### Adjunct Assistant Professors

Matthew R. Beymer, MPH, PhD  
Dana E. Hunnes, MPH, PhD, RD  
Natalie D. Muth, MD, MPH, RDN, FAAP  
Elizabeth Yzquierdo, MPH, EdD

### Academic Administrator

Sarah R. Blenner Uzan, JD, MPH

## Overview

The Department of Community Health Sciences is concerned with health equity and well-being for all individuals and communities. To understand and foster optimal health among diverse communities, the mission of the department is to prepare students to be interdisciplinary global leaders who can effectively address persistent and emerging public health issues, conduct and disseminate innovative research on the social determinants of health, translate the findings for public health practice, and collaborate with communities in research and training.

## Graduate Study

The department offers schoolwide professional (MPH) and academic (MS and PhD) de-

gree programs. Graduates of the professional programs assume positions in the planning, administration, and evaluation of public health programs and policies in the U.S. and abroad. Graduates of the academic programs assume teaching, research, and managerial positions in universities, government agencies, nongovernmental organizations, international health agencies, and research centers.

## Graduate Majors

### Community Health Sciences MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Public Health for Health Professionals

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Community Health Sciences

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**48. Nutrition and Food Studies: Principles and Practice. (5)** Lecture, three hours; discussion, one hour. Overview of nutritional sciences and public health nutrition. Examination of basic science concepts of nutrition and application of them to student lives and real-world issues through lectures, videos, diet analysis, activities, reports, discussion of video and reading assignments, and reviews of community programs that apply nutrition and behavior theory to improve health of public. Students use observational research methods to create and answer questions about nutrition question in their cohort. P/NP or letter grading.

**60. Intergroup Dialogue: Peer Dialogue. (2)** Seminar, two hours. Discussion on issues of difference, conflict, and community to facilitate understanding between social/cultural groups. Student participation in semi-structured face-to-face meetings with students from other social identity groups to learn from each others' perspectives, read and discuss relevant reading material, and explore their own and other groups' experiences in various social and institutional contexts. Exploration of ways of taking action to create change and bridge differences at interpersonal and social/community levels. P/NP or letter grading.

**80. FITTED: Fitness Improvement Training through Exercise and Diet. (1)** Lecture, one hour; activity, two hours. Success in undergraduate experience is very much influenced by attributes beyond intellectual competence. Examination of personal, social, and environmental factors that influence college students' eating behaviors, physical activity patterns, and body image. Development of individualized student plans for eating well, being active, and feeling good about their bodies. Learning of practical skills with application to nutrition, physical activity, positive body image, stress management, and other aspects of wellness as students participate in critical evaluation of popular diets, healthy body weights, fitness, supplements, media body ideals, and self-destructive thoughts. P/ NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**91. Peer Health Counselor Training. (4)** Lecture, four hours. Limited to students in Peer Health Counselor Program. Analysis of student healthcare issues as related to campus healthcare delivery system and to healthcare consumer. Identification of health needs, determination of appropriate resources, delivery of preventive and self-care education, and delineation of peer health counselor's role. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Introduction to Community Health Sciences. (4)** Lecture, four hours. Limited to junior/senior non-majors and graduate students, with preference given to undergraduates in Public Health minor. Not open for credit to students with credit for course 120. Introductory course to provide students with broad and comprehensive overview of concepts, empirical research, and public health practice in community health sciences, with emphasis on social context and determinants of population health, and principles of planning interventions to protect and improve public health. Includes ways to define and measure health and illness, social construction of illness, social and behavioral determinants of health, and health disparities. Discussion also of social and behavioral theories of health-related behavior change, health promotion strategies and methods, advocacy, and public policy. Letter grading.

**120. Promoting Healthy Communities. (5)** Lecture, four hours; discussion, one hour. Prerequisite: Public Health 50B. Limited to Public Health majors. Not open for credit to students with credit for course 100. Comprehensive overview of concepts, empirical research, and public health practice in community health sciences, with emphasis on social context and determinants of population health and principles of planning interventions to protect and improve public health. Ways to define and measure health and illness, social construction of illness, social and behavioral determinants of health, and health disparities, including socioeconomic status, race/ethnicity, gender, and age. Social and behavioral theories of health-related behavior

change, health promotion strategies and methods, and public policy. Case studies of evidence-based health promotion programs provided. Letter grading.

**130. Nutrition and Health. (4)** Lecture, three hours; laboratory, one hour. Preparation: one biology course, one chemistry course. Basic and clinical nutrition theory and practice for students in health sciences curricula. P/NP or letter grading.

**131. Healthy Food Access in Los Angeles: History and Practice of Urban Agriculture. (4)** Lecture, three hours; laboratory, 90 minutes. History and recent revival of urban agriculture (gardening) in Los Angeles area. Exploration of how urban gardening is response to crises such as U.S. obesity epidemic and resulting health problems. Critiques of industrial agriculture in California and elsewhere in U.S. Exploration of how urban agriculture springs from healthy food/active living and consumer movements that advocate access to locally grown, in-season, affordable food. Biweekly hands-on gardening laboratory in Sunset Canyon Recreation Center Organic Garden. P/NP or letter grading.

**132. Health, Disease, and Health Services in Latin America. (4)** Lecture, four hours. Introduction to health, disease, and health services in Latin America, with emphasis on epidemiology, health administration, medical anthropology, and nutrition. P/NP or letter grading.

**M140. Health Issues for Asian Americans and Pacific Islanders: Myth or Model? (4)** (Same as Asian American Studies M129.) Lecture, three hours; fieldwork, one hour. Introductory overview of mental and physical health issues of Asian Americans and Pacific Islanders; identification of gaps in health status indicators and barriers to both care delivery and research for these populations. Letter grading.

**160. Intergroup Dialogue: Theory and Practice of Peer Facilitation. (4)** Lecture, four hours. Recommended prerequisite: course 60. Discussion on issues of difference, conflict, and community to facilitate understanding between social/cultural groups. Peer facilitator training course to develop understanding of theoretical and research foundations of intergroup dialogue, peer-facilitated discussions involving relationship building (and coalition building) through thoughtful engagement around different social identity issues. Study of variety of techniques, tools, and strategies to support students in their capacity to implement sustained dialogues with students from other social identity groups. Letter grading.

**161. Intergroup Dialogue: Training Practicum. (4)** Seminar, four hours. Enforced prerequisite: course 160. Application and further development of content and skills learned in course 160. Co-facilitation of weekly dialogues with students on specific identity theme and further development of knowledge and techniques in areas of group dynamics, conflict intervention, communication and community, and mental health effects of structural inequality as they relate to discussions of social justice and multicultural issues. Readings in these areas and discussions of ongoing dialogue dynamics. May be repeated once for credit. Letter grading.

**CM170. Improving Worker Health: Social Movements, Policy Debates, and Public Health. (4)** (Same as Labor Studies M170.) Lecture, three hours; fieldwork, two hours. Examination of intersection between work, health, and environment, analysis of social causes of health disparities, investigation of historical trends and social movements, interpretation of current policy debates, and development of innovative interventions. Concurrently scheduled with course CM470. P/NP or letter grading.

**179. Life Skills for College Students. (4)** Seminar, four hours. Multidisciplinary exploration of student development in undergraduate experience, with focus on processes of identity formation and emotional and social development. Emphasis on variability associated with gender, race, ethnicity, culture, and sexual orientation. Testing of real-life relevance of theory and research. P/NP or letter grading.

**180. Field Studies in Cancer Control. (4)** Lecture, two hours; discussion, one hour; fieldwork, four hours. Prerequisite: Molecular, Cell, and Developmental Biology

50. Designed for juniors/seniors. Opportunity for students to become involved in cancer control through classroom discussion, lectures, service in field, and guided research. Biology of cancer, its prevention, early detection, treatment, and rehabilitation. Letter grading.

**181. Campus/Community Health and Wellness Promotion: From Theory to Practice. (4)** Lecture, two hours; discussion, two hours. Limited to juniors/seniors. Theory, training, and experience in health/wellness promotion and health/wellness education in selected campus communities. Participation in supervised small-group program planning project. Letter grading.

**187A-187B. Introduction to Interventions for At-Risk Populations. (4-4)** Lecture, three hours; committee meetings/community service, two to six hours. Course 187A is requisite to 187B. Designed for juniors/seniors. Health and social needs/services from primarily public health perspective, drawing on related academic/professional disciplines. Community-based service learning strategy used to enhance knowledge of concepts covered. As part of service portion, students trained as caseworkers and committee members. Letter grading.

**188A-188B. Special Courses in Community Health Sciences. (4-2)** Lecture, two hours (188B) and three hours (188A). Examination of current topics or particular subfields or experimental or temporary courses in community health sciences. Specific topic areas vary with instructor. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Community or Corporate Internships in Community Health Sciences. (4)** Tutorial, six hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Further supervision provided by public health organization for which students do internship. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising placement sponsor required. P/NP or letter grading.

**197. Individual Studies in Community Health Sciences. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Community Health Sciences. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Entry-level research apprenticeship under guidance of faculty mentor with affiliated research interests. Collaboration with faculty mentors on their research in area related to community health sciences. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**200. Global Health Problems. (4)** Lecture, two hours; discussion, two hours. Overview of health profile of world in the century. Global health problems and methods by which they have been dealt in context of Alma Ata goal of health for all by year 2000. Letter grading.

**205. Immigrant Health. (4)** Lecture, two hours; discussion, one hour. Limited to graduate students. Overview of key topics in public health for documented and undocumented immigrants and refugees in U.S. Demographics, health status, behavioral risk factors, and social determinants, health and human rights, and access to healthcare and prevention services. Analysis of public policy across topics. Builds skills necessary to develop integrated approach to health of immigrant populations. Letter grading.

**M208. Introduction to Demographic Methods. (4)** (Same as Biostatistics M208, Economics M208, and Sociology M213A.) Lecture, four hours. Preparation: one introductory statistics course. Introduction to methods of demographic analysis. Topics include demographic rates, standardization, decomposition of differences, life tables, survival analysis, cohort analysis, birth interval analysis, models of population growth, stable populations, population projection, and demographic data sources. Letter grading.

**M209. Population Models and Dynamics. (4)** (Same as Sociology M213C.) Lecture, three hours. Requisite: course M208. Population models and their dynamics in population processes. How demographic models are used in estimation of population size, age structure, and associated dynamics. Computer simulations of demographic processes to gauge conclusions from demographic models. Estimation of demographic models in human population and broader relevance of demographic analysis to study of any population or system, including health and social systems. S/U or letter grading.

**210. Community Health Sciences. (4)** Lecture, three hours; discussion, one hour. Preparation: one social sciences course. Basic concepts, relationships, and policy issues in field of community health, variability in definitions of health and illness, correlates of health and illness behavior, impact of social and community structure on health status, major contemporary approaches to health promotion and health education at community level. Use of comparative international perspective. Letter grading.

**211A-211B. Program Planning, Research, and Evaluation in Community Health Sciences. (4-4)** Lecture, three hours; discussion, one hour; outside assignments, eight hours. Course 211A is requisite to 211B. Development, planning, and administration of public health programs in community settings. Introduction to range of research methods and techniques used in designing and conducting health research, with particular emphasis on evaluation of community-based public health programs. Course organized into three modules. Letter grading. **211A.** Requisite: course 210; **211B.** Requisites: courses 210, 211A, and Biostatistics 100B or Epidemiology 100 or Public Health 200A and 200B.

**212. Advanced Social Research Methods in Health. (4)** Lecture, four hours; laboratory, two hours; outside assignments, eight hours. Requisites: courses 211A, 211B, Biostatistics 100B, 406. Problems of health survey design and data collection; measurement issues in data analysis and interpretation; use of computer for analysis of large-scale survey data using various statistical techniques. Letter grading.

**213. Research in Community and Patient Health Education. (4)** Lecture, three hours; discussion, two hours. Requisite: course 210. Application of conceptual, theoretical, and evaluation skills to community-based health education risk-reduction programs. Computer applications, data management, and research methodologies taught through microcomputer and mainframe computer management and analysis of program databases. Letter grading.

**214. Issues in Program Evaluation. (4)** Discussion, three hours; reading and research paper, one hour. Requisite: course 212. Advanced seminar that explores problems of planning and implementing evaluation research in context of local demonstration projects. Letter grading.

**M216A. Qualitative Research: Design and Data Collection. (4)** (Formerly numbered M216.) (Same as Anthropology M285A.) Seminar, three hours; laboratory, one hour. Intensive seminar/field course in qualitative

research methodology. Emphasis on using qualitative methods and techniques in research and evaluation related to health care. Letter grading.

**M216B. Qualitative Research: Analysis and Dissemination. (4)** (Same as Anthropology M285B.) Lecture, three hours. Hands-on approach to qualitative data analysis. Students learn how to conduct all steps of thematic analysis, including developing codes and coding schemes, analytic techniques to compare and categorize data, assessing validity and quality of data, as well as summarizing and presenting qualitative findings. Lectures, discussion of readings, and practical exercises by hand and with Dedoose computer software. S/U or letter grading.

**M217. Current Issues in Food Studies. (4)** (Same as Urban Planning M216.) Seminar, three hours. Limited to Food Studies Graduate Certificate Program students. Food is complex subject given that production, procurement, preparation, consumption, and exchange of edible matter is biologically vital to human growth, development, and function and critical to many aspects of society and culture. Food studies is growing cross-disciplinary field of research, teaching, and advocacy that encompasses and draws from cultural anthropology and geography, food law and policy, urban planning, sociology, literature, history, public health, nutrition, environmental science, molecular and cell biology, science and technology studies (STS), agronomy, and other disciplines. Survey of some of these wide-ranging topics and disciplines that define food studies. Letter grading.

**M218. Questionnaire Design and Administration. (4)** (Same as Epidemiology M218.) Lecture, four hours. Requisites: courses 211A and 211B, or Epidemiology 200B and 200C. Design, testing, field use, and administration of data collection instruments, with particular emphasis on questionnaires. Letter grading.

**219. Theory-Based Data Analysis. (4)** Seminar, three hours. Enforced requisites: courses 270A, 270B, Biostatistics 100B, 406, Public Health 200A, 200B, or permission of instructor. Limited to Community Health Sciences PhD students. Translation of theory into data analytic plan, its application to real data, and interpretation of results obtained through multivariate analysis. Analysis of quantitative data using range of multivariate techniques, such as linear multiple regression and logistic regression. Analysis of theoretical problem using student quantitative data or public use data. Letter grading.

**220. Racism and Public Health: Social Epidemiologic Approaches. (4)** Seminar, two hours; discussion, one hour. Requisite: Biostatistics 100B. Integration of social epidemiologic methods and critical approaches to study of racial stratification and public health, with focus on (1) conceptualizing racism-related factors as social determinants of health, (2) building methodological competence for conducting research on racism as social determinant of health, and (3) developing critical self-consciousness to better understand how persons' racial- or racism-related perspectives and experiences might inform their research. Letter grading.

**221. African American Health across Life. (4)** Seminar, two hours. Requisite: course 210. Critical examination of social, psychological, and biological pathways to health and longevity among African Americans through engagement with empirical research from multiple disciplines (public health, sociology, psychology, medicine). Guided by social stress theory and other theoretical perspectives, consideration of health impact of historical and contemporary racial inequality. Application of this critical lens to examine current events and propose potential public health solutions and avenues for intervention. Study of African American health is often characterized by deficit approach, which defines well-being of this population only in terms of their health risks relative to majority. Discussion of risk factors associated with adverse health outcomes, but also identification of numerous resources used by African Americans to promote resilience and preserve health. Letter grading.

**M222. Understanding Fertility: Theories and Methods. (4)** (Same as Sociology M206.) Lecture, three hours. Preparation: one formal or social demography course. Requisite: Biostatistics 100A. Application of demographic theories and methods to describe fer-

tility trends and differentials and social and proximate determinants of fertility, with emphasis on understanding key proximate determinants. For advanced students interested in population, demography of health, and social demography. Letter grading.

**224. Social Determinants of Nutrition and Health. (4)** Lecture, three hours. Preparation: one basic nutrition course. Health promotion strategies aimed at reducing chronic disease risk through lifestyle changes have not been particularly successful in addressing needs of socioeconomically disadvantaged groups. Overview of literature supporting relationship between socioeconomic disadvantage and food-related health conditions such as obesity, diabetes, and osteoporosis. Critical examination of plausible pathways from perspectives of multidisciplinary (economics, nutrition, sociology, and more), with focus on linkages between social and physical environment (including built environment) and food equity/access; discussion of how food may be catalyst for improving social capital and health. Discussion of examples of local and international efforts to improve access to healthy foods and/or limit access to unhealthy foods. Exploration of methods for assessing social capital and food-related aspects of neighborhood environments. S/U or letter grading.

**225. Writing for Publication in Public Health. (4)** Seminar, four hours. Requisites: course 219, two graduate biostatistics courses, one graduate epidemiology course. Development of skills for advanced doctoral students in producing peer-review-quality research papers, with focus on theoretically informed empirical research papers. Examination of other types of manuscripts (e.g., reviews) included. Letter grading.

**226. Women's Health and Well-Being. (4)** Lecture, four hours. Limited to graduate students. Interdisciplinary perspective critically examining research on women's health. Overview of scientific inquiry and methods; gender roles; status attainment and medical sociology. Review of current data on women's health. Letter grading.

**227. Conceptualizing and Measuring Structural Racism. (4)** Lecture, three hours. Limited to graduate students. How structural racism and other forms of systematic inequality may contribute to health inequities. Moves beyond interpersonal experiences of racism to focus on ways to conceptualize, measure, and investigate racism perpetuated and maintained by social institutions. Letter grading.

**M228. Introduction to Mixed Methods Research. (4)** (Same as Health Policy and Management M228.) Seminar, three hours; discussion, one hour. Limited to graduate students. Highly recommended: Health Policy and Management 225A and 225B, or completion of coursework in basic research design and methods. Introduction to mixed methods research, with emphasis on its application to public health research. Equips students with skills to critique mixed method research designs and to design mixed methods research investigation for health issue of interest. Study of different mixed methods research designs commonly used in public health and health services research, including feasibility studies, convergent parallel design, sequential mixed methods, and multiphase studies. Use of combination of didactic and applied techniques. S/U or letter grading.

**229. Policy and Public Health Approaches to Violence Prevention. (4)** Lecture, four hours. How policies relate to violence and development of skills to transmit this knowledge. Examination of wide range of policy topics and how each might be associated with reduction/increase in violence/violent injury. Letter grading.

**230. Family and Sexual Violence. (4)** Lecture, three hours; community, three to four hours. Examination of rape, incest, and spouse and elder abuse. Presentation of definitions, causes, outcomes of research on family and sexual violence, as well as response of social service, medical, and criminal justice systems. Letter grading.

**231. Maternal and Child Nutrition. (4)** Lecture, four hours. Nutrition of mothers, infants, and children in countries at various levels of socioeconomic development; measures for prevention and treatment of protein/calorie malnutrition; relationship between nutrition

and mental development; impact of ecological, socio-economic, and cultural factors on nutrition, nutrition education, and service. Letter grading.

**M232. Determinants of Health. (4)** (Same as Health Policy M242.) Lecture, three hours; discussion, one hour. Designed for graduate students. Critical analysis of models for what determines health and evidence for social, economic, environmental, genetic, health system, and other factors that influence health of populations and defined subgroups. Letter grading.

**233. Hunger and Food Insecurity as Public Health Issues. (4)** Lecture, three hours. Designed for graduate students. Public health aspects of hunger and food insecurity in historical and international perspectives, including measurement and identification of vulnerability, prevention, and options for relieving acute food shortage. Letter grading.

**M234. Obesity, Physical Activity, and Nutrition Seminar. (4)** (Same as Health Policy M255.) Seminar, three hours; outside study, one hour. Designed for graduate students. Multidisciplinary introduction at graduate level to epidemiology, physiology, and current state of preventive and therapeutic interventions for obesity in adults and children, including public health policy approaches to healthy nutrition and physical activity promotion. S/U or letter grading.

**235. Influence of Social and Physical Environment on Racial Health Disparities. (4)** Seminar, three hours. Preparation: at least one biostatistics or epidemiology course. Limited to graduate students. Examination of how community stressors and neighborhood resources may contribute to health disparities. Discussion of multiple factors that contribute to environmental injustice and their potential solutions. Do health disparities arise because minorities and low-income populations live in harmful environments? Is relationship between environment and health disparities merely one of potential exposure to chemical/physical hazards, or are there psychosocial mechanisms at community level that act above or beyond effects of physical environment? Letter grading.

**M237. Evolving Paradigms of Prevention: Interventions in Early Childhood. (4)** (Same as Health Policy M290.) Seminar, three hours; fieldwork, one hour. Designed for graduate students. Introduction to use of early childhood interventions as means of preventing adverse health and developmental outcomes. Concepts of developmental vulnerability, approaches to assessment, models of service delivery, evaluation and cost-benefit issues, funding, and other policy issues. Letter grading.

**238. Evolving Paradigms of Prevention: Interventions in Adolescence. (4)** Seminar, three hours. Adolescent health and interventions, with focus on sex, alcohol, and drug use. Focus on adolescent identity development, adolescent sexuality, discussion of gay, lesbian, bisexual, and transgender issues, components of sexual risk-taking behavior, and alcohol and drug use (e.g., peer influence, changes in brain activity) and interventions that have been developed to address these behaviors. Building of skills to work with adolescent populations and in community-based settings. Letter grading.

**M239. Race, Ethnicity, and Culture as Concepts in Practice and Research. (4)** (Same as Asian American Studies M239.) Seminar, three hours. Integration of cross-cultural findings in healthcare with current American (U.S.) healthcare system paradigms to facilitate designing culturally based public health programs and train culturally competent practitioners. Letter grading.

**240. Child and Reproductive Health in Communities: Global Environmental Perspective. (4)** Lecture, three hours. Limited to graduate students. Examination of global issues of child and reproductive health in relation to environmental factors in interplay with socio-economic and biological factors. Environmental influences are responsible for one quarter of total burden of disease worldwide, and for more than one third of burden among children—most of them living in resource-poor countries and communities. Discussion of impacts of qualitatively different, and potentially modifiable, factors such as access to safe water or urbanization, as well as environmental contribution to high-burden outcomes in childhood and reproduction.

Focus on lower income settings and discussion of relevant population-based approaches to assessment and intervention. Letter grading.

**246. Women's Roles and Family Health. (4)** Lecture, two hours; discussion, one hour. Rapidly changing roles of women throughout world are having important effects on women's own health and that of their families. Analysis of multidisciplinary research from both developing and industrialized countries to provide basis for in-depth discussion of programmatic and policy implications. Letter grading.

**247. Population Change and Public Policy. (4)** Lecture, four hours. Examination of international population change, population-related policies, and public health implications of demographic processes. Letter grading.

**M248. Primary Health Care. (4)** (Same as Health Policy and Management M248.) Lecture, four hours. Strongly recommended requisite: Public Health 200A, 200B. Recommended requisite: course 200 or Health Policy and Management 240. Primary Health care (PHC) is considered to be foundation of all health systems and should be able to resolve 80 percent or more of population's health problems. Overview of organization, structure, and functions of primary health care with emphasis on low- and middle-income country settings. Study of history and origins of PHC, roles and functions of PHC in health systems, different organizational and managerial approaches to organizing and delivering health care within PHC framework, and tools for measuring how well PHC programs and services are functioning. Review and critical analysis of evidence-based on PHC effectiveness and impact and present detailed case studies of PHC programs in diverse settings around world. Letter grading.

**M249L. Ethical Theory and Applications in Public Health. (4)** (Same as Health Policy M285.) Lecture, four hours. Requisites: Health Policy 200A, 200B. Introduction to ethical theories and critical ethical issues pertaining to healthcare policy and healthcare management. Research, writing, and discussion on variety of topics related to health and human rights to enhance professionalism, leadership, and systems thinking and improve student sensitivity to needs of patients, coworkers, and fiduciary shareholders. How ethics are foundation of leadership. Letter grading.

**M250. HIV/AIDS and Culture in Latin America. (4)** (Same as Latin American Studies M262.) Seminar, three hours. Exploration of cultural, political, and public health context for people living with and at risk for HIV/AIDS and their families in Latin America. Public health aspects, including epidemiology, comorbidity concerns and community interventions, medical anthropological study of experience of those impacted, and grass-roots responses, as well as political/economic context addressing poverty and structural violence. Letter grading.

**M251. Nutritional Epidemiology I. (4)** (Same as Epidemiology M254.) Lecture, two hours; discussion/laboratory exercise, one hour. Preparation: introductory biostatistics and epidemiology courses. Review of all aspects of contemporary nutrition sciences that require application of epidemiologic principles and methods, ranging from food-borne outbreak investigation to evidence-based regulatory assessment of health claims for foods. Experience in actual world of collecting, analyzing, and interpreting data related to nutrition and health or disease outcomes. S/U or letter grading.

**M252. Health Policy Analysis. (4)** (Same as Health Policy M233.) Lecture, three hours. Requisites: courses M276, Health Policy 200A, M236. Conceptual and procedural tools for analysis of health policy, emphasizing role of analysis during various phases of life-cycle of public policy. Letter grading.

**254. Intentional Disasters: War and Refugees. (2)** Lecture, two hours. Recommended requisites: courses 211A, 211B, 295, Epidemiology 100, one survey methods course. Previous international experience strongly encouraged. Overview of intentional disasters, with focus on technically underdeveloped areas and consequent population migration. Principal focus on health consequences of these events and strategies to address health issues. Letter grading.

**M256. Interdisciplinary Response to Infectious Disease Emergencies: Public Health Perspective. (4)** (Same as Medicine M256, Nursing M298, and Oral Biology M256.) Lecture, three hours; discussion, one hour. Designed to instill in professional students ideas of common emergency health problems and coordinated response, with specific attention to bioterrorism. Examination of tools to help students prevent, detect, and intervene in infectious disease emergencies. Interdisciplinary sessions also attended by students in Schools of Dentistry, Medicine, and Nursing during weeks two through five. Letter grading.

**257. Program Planning in Community Disaster Preparedness. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 211A, 211B, 295. Health education and emergency management principles combined to design, plan, implement, and evaluate community disaster preparedness programs, including needs assessment, identification of target population, objective writing, program planning, and process, outcome, and impact evaluation. Letter grading.

**258. Cooperative Interagency Management in Disasters. (4)** Lecture, four hours. Recommended requisite: course 295. Designed for graduate students. Broad overview of how different agencies involved in disaster responses work together to handle impact of mass population emergencies. Identification of role of local, state, and federal governments, nonprofit and private sector organizations, media, and healthcare facilities in disaster situations. Students meet with representatives of different agencies involved in disaster responses and visit one of area's state-of-art emergency management operations facilities. Letter grading.

**M259. Smoking, Drinking, Shooting, and Driving: Understanding Public Health Policy in U.S. (4)** (Same as Health Policy and Management M259.) Lecture, two hours; discussion, two hours. Recommended requisite: Community Health Sciences 286. Overview of essential theories regarding development, implementation, and impact of public health policies in U.S. with emphasis on state and local governments. Students develop skills in public health policy research (laws, regulations, statutes, ordinances) and engage in critically analyzing evidence for different approaches currently used to address some of main causes of death and disability in U.S. including tobacco, alcohol, firearms, food and nutrition, and motor vehicle safety. Readings, case studies, exploration of public use data, group discussions, and directed individual research. Students engage in discussion and debate regarding contemporary challenges and emerging trends. S/U or letter grading.

**M260. Health and Culture in Americas. (4)** (Same as Anthropology M233R and Latin American Studies M260.) Lecture, three hours. Recommended requisite: course 132. Health issues throughout Americas, especially indigenous/Mestizo Latin American populations. Holistic approach covering politics, economics, history, geography, human rights, maternal/child health, culture. Letter grading.

**M263. Social Demography of Los Angeles. (4)** (Same as Sociology M263.) Lecture, three hours. Designed for graduate students. Use of city of Los Angeles to examine major social and demographic factors that characterize cities in U.S. Examination of role of these factors in affecting health outcomes. Letter grading.

**M264. Latin America: Traditional Medicine, Shamanism, and Folk Illness. (4)** (Same as Anthropology M233Q and Latin American Studies M264.) Lecture, three hours. Recommended preparation: course 132, bilingual English/Spanish skills. Examination of role of traditional medicine and shamanism in Latin America and exploration of how indigenous and mestizo groups diagnose and treat folk illness and Western-defined diseases with variety of health-seeking methods. Examination of art, music, and ritual and case examples of religion and healing practices via lecture, film, and audiotape. Letter grading.

**270A-270B. Foundations of Community Health Sciences. (4-4)** Lecture, four hours. Enforced requisite: course 210. Course 270A is enforced requisite to 270B. Limited to departmental doctoral students. In-



depth analysis of theories, methods, and research on which community health sciences are based. Letter grading.

**271. Health-Related Behavior Change. (4)** Lecture, four hours. Requisite: course 210. Unified behavioral science approach to natural determinants of change, as foundation for planned change in health-related behavior at community, group, and individual levels. Letter grading.

**M272. Social Epidemiology. (4)** (Same as Epidemiology M272.) Lecture, two hours; discussion, one hour. Requisite: Epidemiology 100 or Public Health 200A and 200B. Relationship between sociological, cultural, and psychosocial factors in etiology, occurrence, and distribution of morbidity and mortality. Emphasis on lifestyles and other socioenvironmental factors associated with general susceptibility to disease and subsequent mortality. Letter grading.

**276. Complementary and Alternative Medicine. (4)** Lecture, three hours. Requisite: course 210. Analysis of use and acceptance of complementary and alternative medicine (CAM) by clients and providers. Core beliefs of CAM, relationship of CAM and spirituality, licensure and certification of CAM providers, relationship of CAM and conventional medicine, impact of CAM on client identity. Letter grading.

**277. Advanced Community Health Education. (4)** Lecture, two hours; discussion, two hours. Requisite: course 210. Before planning educational components of health program, one must assess behaviors and factors influencing health problem. Conceptual, theoretical, and evaluative skills developed and applied in constructing community-based educational program. Letter grading.

**M278. Work and Health. (4)** (Same as Environmental Health Sciences M270.) Lecture, three hours; practicum, one hour. Recommended preparation: graduate-level methods/statistics course, basic epidemiology. Designed for graduate students. Exploration of impact of work on physical and psychological health in context of newly emerging discipline. Focus on psychosocial models, measurement (including hands-on experience), contextual factors (gender, ethnicity, social class), and how work stressors can be ameliorated. S/U or letter grading.

**281A. Capstone Seminar: Health Promotion and Education. (4)** Seminar, 90 minutes; discussion, 90 minutes. Enforced requisite: course 210. Current problems and findings in health promotion and education (e.g., nutrition, family health, AIDS/HIV, minority health); learning from presentations and critical discussions of master's project reports completed under faculty supervision. Letter grading.

**281B. Capstone Seminar: Health Promotion and Education. (2)** Seminar, one hour; discussion, one hour. Current problems and findings in health promotion and education (e.g., nutrition, family health, AIDS/HIV, minority health); learning from presentations and critical discussions of master's project reports completed under faculty supervision. Letter grading.

**282. Social Marketing for Health Promotion and Communication. (4)** Lecture, three hours; fieldwork, one hour. Requisite: course 210. Planning, creating, implementation, and evaluation of comprehensive health communication campaigns, including use of social marketing practices and strategies of audience research, marketing psychology, creative message development, branding, comprehensive media use for dissemination, transmedia. Competencies: conducting focus group interviews, creating and evaluating effective health campaigns, critical assessment of existing campaigns. Letter grading.

**283. Evidence-Based Health Promotion Programs for Older Adults. (4)** Seminar, three hours. Requisite: course 210. Graduate seminar intended to explore sociocultural determinants of health-related behaviors among aged. Letter grading.

**284. Sociocultural Aspects of Mental Health. (4)** Seminar, three hours. Requisite: course 210. Designed for graduate students. Examination of how society shapes mental health of its members and lives of those who have been identified as mentally ill. Group differences (e.g., gender, ethnicity) in disorder and how it is socially constructed. Letter grading.

**286. Doctoral Roundtable in Community Health Sciences. (4)** Seminar, two hours. Designed for departmental doctoral students who must enroll every term until they are advanced to candidacy. Interactive seminar with focus on research process and social mechanisms in science. May be repeated for credit. S/U grading.

**M287. Politics of Health Policy. (4)** (Same as Health Policy and Management M287 and Public Policy M266.) Lecture, three hours; discussion, one hour. Examination of politics of health policy process through analysis of case studies such as environmental protection, pandemic preparedness and response, preventive health services for women, and racial and income inequality and health. Examination of framework for assessing evidence-based policy making and effects of political structure and current political divisions, including efforts such as to repeal and dismantle Affordable Care Act. Letter grading.

**288. Health Communication in Popular Media. (4)** Lecture, three hours; discussion, one hour. Requisites: course 210 or prior social sciences courses. Media utilization, media effects, media content, media advocacy, media literacy, health journalism, video and audio storytelling techniques, new media, entertainment education, and transmedia. Competencies: media content analysis, writing popular nonfiction (blogs, journalism), creating and evaluating effective communications using popular media. Letter grading.

**290. Race, Class, Culture, and Aging. (4)** Lecture, three hours; discussion, one hour. Experience of aging for African American, Latino, and Asian elderly examined in context of their families, communities, and nation. Exploration of cultural and structural influences on health and lived experiences of those elders. Letter grading.

**291. Health Policy and Aged. (4)** Lecture, three hours; discussion, one hour. Examination of political, economic, and social forces that shape health policy for aged, identifying failings in those policies within framework of broader health policy problems. Letter grading.

**292. Information Technology for Health Promotion and Communication. (4)** Lecture, three hours; field practice, one hour. Requisites: course 210 or prior social sciences courses. Health literacy, Internet use and health communication, design of health communication materials using digital media that integrates practice and theory and includes websites, print materials, short videos, curricula, and training materials. Laboratory sessions for materials production. Competencies: creating health communication materials for diverse audiences using new media information technology applied to website, social media, print media, video, and audio platforms. Letter grading.

**293. Social and Behavioral Research in AIDS: Roundtable Discussion. (2 to 4)** Discussion, two hours; individual consultation, two hours. Review and discussion of research programs directed toward identification of psychosocial, biobehavioral, environmental, and community factors related to prevention and control of AIDS/HIV. Letter grading.

**M294. Social and Behavioral Factors of HIV/AIDS: Global Perspective. (4)** (Same as Psychiatry M288.) Lecture, four hours. Requisites: course 100 and Epidemiology 100, or prior social sciences courses. Overview of social and behavioral factors that influence both transmission and prevention of HIV/AIDS throughout world. Letter grading.

**295. Overview of Emergency Public Health. (4)** Lecture, four hours. Designed for graduate students. Overview of issues involved in disaster preparedness and response for public health agencies. Introduction to theoretical and practice aspects of field of emergency public health. Examination of disaster cycle and various natural and human-induced hazards from public health perspective. Letter grading.

**296. Advanced Research Topics in Community Health Sciences. (2 to 4)** Discussion, two to four hours. Advanced study and analysis of current topics in community health sciences. Discussion of current research and literature in research speciality of faculty member teaching course. May be repeated for credit. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Field Studies in Public Health. (4)** Fieldwork, to be arranged. Field observation and studies in selected community organizations for health promotion or medical care. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward MS minimum course requirement; 4 units may be applied toward 60-unit minimum total required for MPH degree. Letter grading.

**M411. Issues in Cancer Prevention and Control. (4)** (Same as Health Policy M411.) Lecture, four hours. Designed for juniors/seniors and graduate students. Introduction to causes and characteristics of cancer epidemic, cancer control goals for nation, and interventions designed to encourage smoking cessation/prevention, cancer screening, and other dietary, psychosocial, and lifestyle changes. Letter grading.

**M420. Children with Special Healthcare Needs: Systems Perspective. (4)** (Same as Health Policy M420 and Social Welfare M290I.) Lecture, three hours; fieldwork, one hour. Examination and evaluation of principles, policies, programs, and practices that have evolved to identify, assess, and meet special needs of infants, children, and adolescents with developmental disabilities or chronic illness and their families. Letter grading.

**427. Reproductive Health in Sub-Saharan Africa. (4)** Lecture, four hours. Recommended requisite: course 247. In-depth understanding of reproductive health challenges facing sub-Saharan Africa and main programs designed to address them. Topics include family planning, STIs, abortion, adolescents, HIV/AIDS, and refugees. Letter grading.

**M428. Child and Family Health Program Community Leadership Seminar. (2)** (Same as Health Policy M428.) Seminar, two hours. Designed for graduate students. Examination of characteristics of community-based organizations (CBOs) and role of leadership in decision-making process involved in major issues facing maternal and child health in Los Angeles County. Focus on specific leadership competencies that are or should be employed by organizations effective in shaping maternal and child health programs and policies (or any population-level policies and programs). Leaders from CBOs in Los Angeles meet with students, comment on their practicum experiences, and underscore community leadership concepts demonstrated by those CBOs. S/U or letter grading.

**M430. Building Advocacy Skills: Reproductive Health Focus. (4)** (Same as Health Policy M434.) Seminar, three hours. Recommended requisite: one prior health policy course such as Community Health Sciences 247 or Health Policy 235. Designed for School of Public Health graduate and doctoral students. Skills-building course to develop competency in assessing, developing, and implementing advocacy strategies for reproductive health initiatives. Introduction to legislative and community advocacy initiatives and to policymaking process, including policy analysis and development of resources necessary for legislative advocacy. Identification of advocacy goals and objectives, development of advocacy plan, coalition building, organizational capacity building, media relations, and message development for various audiences. Students learn about range of former and current reproductive health advocacy campaigns. Letter grading.

**431. Foundations of Reproductive Health. (4)** Lecture, three hours. Limited to graduate students. Understanding reproductive technologies and practices is critical for public health students interested in designing programs to address problems such as unwanted pregnancy, family planning, sexually transmitted diseases, and inadequate preventive services. Examination of foundations of reproductive health from medical perspective, with particular attention to implications for public health programs, health services, and policy. Topics include anatomy and physi-

ology of male and female reproductive health tracts, methods of birth control, medical and surgical abortion, infertility, maternal care, and sexual violence and trauma. S/U or letter grading.

**432. Perinatal Healthcare: Principles, Programs, and Policies.** (4) Lecture, three hours; discussion, one hour. Comprehensive examination of perinatal health-care, including perinatal epidemiology, outcome measures, public programs, controversies surrounding new technology, regionalization, organization of services at federal, state, and county levels, and medical/legal issues. S/U or letter grading.

**434A. Maternal and Child Health in Developing Areas.** (4) Lecture, four hours. Requisite: course 231. Major health problems of mothers and children in developing areas, stressing causation, management, and prevention. Particular reference to adapting programs to limited resources in cross-cultural milieus. S/U or letter grading.

**435. Seminar: Advanced Issues in Women's Health.** (4) Seminar, three hours. Preparation: at least one prior women's health course, one to two biostatistics courses, one research methods course. Provides more advanced and in-depth understanding of ways in which scientists know; and considerations of women's place in scientific discourse. Examination of series of case studies as starting point for discussion. Letter grading.

**M436A-M436B. Child Health, Programs, and Policies.** (4-4) (Same as Health Policy M449A-M449B.) Lecture, four hours. Requisite: Health Policy 100. Course M436A is requisite to M436B. Examination of history of child health policy trends and determinants of health, structure, and function of health service system; needs, programs, and policies affecting especially at-risk populations. Letter grading.

**440. Public Health and National Security at U.S.-Mexico Border.** (4) Lecture, two hours; discussion, one hour; research and literature review, one hour. Designed for graduate students. Exploration of community and environmental health and health services issues that are present along U.S.-Mexico and coastal California borders. Integrated within public health framework are issues and mitigation of national security and disaster/terrorist risks and hazards. Letter grading.

**441. Planning and Evaluation of Global Health Programs.** (4) Lecture, four hours. Theory, guidelines, and team exercise for planning community health/family planning projects in U.S. and in developing countries. Phases include community needs identification; goal setting; budget and work plan development; funding; staffing; evaluation design; data and cost analysis; and project presentation. Letter grading.

**444. Anthropometric and Dietary Aspects of Nutritional Assessment.** (4) Lecture, two hours; discussion, one hour; laboratory, two hours. Practical skills in anthropometric and dietary assessment, including selection of appropriate methods, data gathering and handling, and analysis and presentation. Letter grading.

**446. Nutrition Education and Training: Third World Considerations.** (4) Lecture, two hours; discussion, one hour; student participation, one hour. Requisite: course 434A. Problems and priorities in nutrition education and training for families and health workers in Third World countries, including new concepts in primary healthcare services, mass media, communications, and governmental and international interventions. S/U or letter grading.

**447. Health and Social Context in Middle East.** (4) Lecture, four hours. Recommended preparation: background in Islamic or Middle Eastern studies. Requisite: course 200 or 231 or 434A. Current health issues and problems of countries in Middle East and implications for socioeconomic development. Review of economic, demographic, and cultural variation of region to provide background for discussion of trends and patterns of health and nutritional status of population in area. Letter grading.

**448. Nutrition Policies and Programs: Domestic and International Perspectives.** (4) Lecture, two hours; discussion, two hours; field visits. Preparation: one nutrition sciences course and/or nutrition program ex-

perience. Nutrition programs and policies in U.S. and developing countries compared and contrasted. Analysis of role of major international, governmental, and nongovernmental agencies. Emphasis on meeting needs of vulnerable populations. Letter grading.

**449. Nutrition and Chronic Disease.** (4) Lecture, four hours. Requisite: course 130 or one introductory nutrition or biology course. Advanced-level seminar on nutritional needs of healthy individuals, current knowledge of role of nutrition in disease prevention, nutritional and metabolic responses to disease, and role of nutritional therapy in management of disease. Letter grading.

**451. Post-Disaster Community Health.** (4) Lecture, four hours. Examination of how public health research and practices can be combined to address post-disaster community health needs. Identification of disaster-related health problems, data collection strategies, and service delivery approaches in post-disaster environment. Letter grading.

**452. Management of Food and Nutrition in Major Emergencies.** (4) Lecture, three hours. Designed for second-year master's or doctoral students interested in humanitarian relief. Basic principles required to design rational and cost-effective food and nutrition emergency relief approaches and programs. Letter grading.

**CM470. Improving Worker Health: Social Movements, Policy Debates, and Public Health.** (4) (Same as Environmental Health Sciences M471 and Urban Planning M470.) Lecture, three hours; fieldwork, two hours. Examination of intersection between work, health, and environment, analysis of social causes of health disparities, investigation of historical trends and social movements, interpretation of current policy debates, and development of innovative interventions. Concurrently scheduled with course CM170. S/U or letter grading.

**477. Health Disparities, Health Equity, and Sexual Minority Populations.** (4) Lecture, two hours; discussion, one hour. Limited to graduate students. Examination of health disparities affecting sexual minority populations, category that includes lesbians, gay men, bisexuals, and transgender (LGBT) persons. Use of Healthy People 2010 Companion Document for LGBT Health to outline key health issues and national recommendations for achieving reductions in each area. Discussion of considerations for providing clinical care and public health practice in this population, unique social and contextual factors influencing LGBT health, and methodological issues for conducting research among LGBT persons. S/U or letter grading.

**482. Practicum: Community Health Sciences.** (4) Discussion, two hours; fieldwork, up to 20 hours. Requisites: courses 210, 211A, 211B. Understanding of professional practice in health-related organizations. Letter grading.

**484. Risk Communications.** (4) Lecture, three hours; fieldwork, one hour. Requisites: courses 210, 211A, and 211B, or prior public health and behavioral sciences courses. Risk communication theory, research, and practice, including social and psychological bases of population risk perceptions, media theories, and how risk is portrayed in media. Environmental, product safety, food-borne and infectious diseases, disasters, and bioterrorism communication. Competencies: understanding everyday and emergency risk communication principles, creating valid risk communication messages and materials, working proactively with new media. Letter grading.

**485. Resource Development for Community Health Programs.** (4) Lecture, three hours; fieldwork, one hour. Enforced requisites: courses 211A, 211B, Public Health 200A, 200B, or permission of instructor. Designed for graduate students. Overview course of fund and resource development for public health and community-based programs. Lectures and workshops include developing grant proposals, researching funding sources, evaluating proposals, developing volunteer and in-kind resources, and implementing capital campaigns. Letter grading.

**487. Community Organization for Health.** (4) Lecture, three hours; fieldwork, four to six hours. Preparation: three public health, sociology, or anthropology

courses. Requisite: course 210. Theory and practice of community organizations, including models and strategies of community organization and their application to health problems and health policy. Particular attention to use of community organization for health promotion and to change public policy. Letter grading.

**501. Cooperative Program.** (2 to 8) Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than 8 units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**596. Directed Individual Study or Research.** (2 to 12) Tutorial, to be arranged. Limited to graduate students. Individual guided studies under direct faculty supervision. Only 4 units may be applied toward MPH and MS minimum total course requirement. May be repeated for credit. S/U or letter grading.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations.** (2 to 12) Tutorial, to be arranged. Limited to graduate students. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research.** (2 to 8) Tutorial, to be arranged. Only 4 units may be applied toward MPH and MS minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research.** (2 to 12) Tutorial, to be arranged. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

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## COMPARATIVE LITERATURE

*College of Letters and Science*

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Box 951536  
Los Angeles, CA 90095-1536

[Comparative Literature](#)

310-825-7650

[Department e-mail](#)

Michael Rothberg, PhD, *Chair*

Nouri Gana, PhD, *Director, Undergraduate Studies*

Tamara J.M. Levitz, PhD, *Director, Graduate Studies*

## Faculty Roster

### Professors

Ali Behdad, PhD (*John Charles Hillis Professor of Literature*)

Massimo Ciavolella, PhD (*Franklin D. Murphy Professor of Italian Renaissance Studies*)

Nouri Gana, PhD

Eleanor K. Kaufman, PhD

Kathleen L. Komar, PhD

Efraim Kristal, PhD

Tamara J.M. Levitz, PhD

David W. MacFadyen, PhD

Saree Makhdisi, PhD

Kirstie M. McClure, PhD

Aamir R. Mufti, PhD

Anjali Prabhu, PhD (*Edward W. Said Professor of Comparative Literature*)

Todd S. Presner, PhD (*Michael and Irene Ross Endowed Professor of Yiddish Studies*)  
 Michael P. Rothberg, PhD (*1939 Society Samuel Goetz Professor of Holocaust Studies*)

Jennifer A. Sharpe, PhD

Shu-mei Shih, PhD (*Irving and Jean Stone Professor*)

Zrinka Stahuljak, PhD

### Professors Emeriti

Katherine C. King, PhD

Françoise Lionnet, PhD

Kenneth Reinhard, PhD

Ross P. Shideler, PhD

Samuel Weber, PhD

### Associate Professors

Elizabeth A. Marchant, PhD

Yasemin Yildiz, PhD

### Assistant Professors

Whitney L. Arnold, PhD, *in Residence*

Stephanie B. Santana, PhD

### Adjunct Professor

Romy Sutherland, PhD

## Overview

Standing at the forefront of innovative work in literary, theoretical, and cultural studies, comparative literature is one of the most exciting fields in the humanities. As a multifaceted discipline, it promotes linguistic proficiency in more than one language, fosters cultural knowledge of more than one culture, and empowers students with the critical and theoretical tools necessary for them to achieve success in a quickly globalizing world. The UCLA program offers students the opportunity to work with the diverse faculty members of the Department of Comparative Literature as well as with the vast number of faculty members in any language and literature departments.

Interdisciplinary and multilingual in scope, the department is committed to continuing its pioneering work in defining new literary paradigms and fostering new directions for exploration in literary and critical studies from around the globe, with particular focus on lesser-known literatures, cultures, and languages. Its diverse class offerings allow students the unique opportunity to explore and grasp new ventures in the humanities (such as health humanities, global south studies, decolonial studies, and memory studies) as well as continuing pursuits of the relationship between translation and transnationalism, literary theory and emerging media, the future of national literatures in an era of globalization, gender and sexuality studies, East-West cultural encounters, human rights, critical race studies, and experimental approaches to literature and culture.

Focusing on elements that preoccupy literary and critical studies in general, such as genre, narrative, form, period, theme, language, and theory, comparative literature also extends its range to questions that concern other disciplines such as anthropology, art history, film and media studies, gender studies, history, and philosophy. Courses are designed to provide students with both a historical and theoretical

understanding of literary, visual, and cultural forms, themes, and movements. Given its focus on interdisciplinary research and pedagogy, comparative literature is the ideal site around which to explore and expand the boundaries of national cultures, modern languages, and literary studies.

## Undergraduate Major

### Comparative Literature BA

#### Learning Outcomes

The Comparative Literature major has the following learning outcomes:

- Ability to analyze literary texts
- Ability to situate literary texts in their aesthetic, historical, and cultural contexts
- Knowledge of different methods of analyzing literature
- Understanding of the importance of reading texts in their cultural context
- Ability to read literary texts in two languages
- Ability to write clearly-written, structured analytic essays

#### Entry to the Major

#### Transfer Students

Transfer applicants to the Comparative Literature major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one English composition course, two literature survey courses, at least one of which must be world literature, and the equivalent of at least one year of foreign language.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Requirements

#### Preparation for the Major

*Required:* (1) Two courses from the Comparative Literature 1, 2, or 4 series (with approval of the director of undergraduate studies, a comparable and appropriate lower-division course in another department may be substituted for one of the courses), (2) completion of the College Writing requirement, and (3) literary proficiency in at least one language other than English, to be demonstrated by admission into one upper-division literature course in the original language.

#### The Major

*Required:* Ten courses, of which (1) five must be from comparative literature offerings, including Comparative Literature 100 and at least four additional comparative literature courses selected from M101 through 197, (2) three upper-division literature courses using original language texts in the primary language area, and (3) two upper-division literature courses using original language texts in the secondary language area (students may petition the student services adviser to take two upper-division literature courses in translation if their

primary literature area is in a language other than English).

#### Honors Program

The departmental honors program is open to Comparative Literature majors with a 3.5 departmental and a 3.25 overall grade-point average. Eligible interested students should contact the student services adviser to enter the program.

Departmental honors candidates must complete all requirements for the major and an honors research paper (in addition to regular course requirements) in two of the four required upper-division comparative literature courses. These two honors research papers must be completed during the quarter in which the student is enrolled in the course. Candidates must also complete a fourth course in the primary literature area and Comparative Literature 198 with a core faculty member in which they write an independent research paper of approximately 25 pages.

## Undergraduate Minor

### Comparative Literature Minor

The Comparative Literature minor offers students interested in literature and the humanities the opportunity to gain insight into the critical problems and theories addressed by comparative literature and to apply that knowledge in literature and comparative literature courses.

#### Admission

To enter the minor students must have fulfilled the College Writing requirement, have completed 40 units with an overall grade-point average of 2.0 or better, have taken at least one year or equivalent of a language other than English, and contact the student services adviser, 350B Kaplan Hall, 310-825-7650.

#### The Minor

*Required Courses (28 units minimum):* (1) Four upper-division comparative literature courses (one course from Comparative Literature 1A through 4DW may be substituted), (2) two upper-division courses in one literature (e.g., Arabic, Chinese, English, French, German, Korean, Russian, Spanish) in the original language, and (3) one upper-division course in a second literature in the original language (one level-six foreign language course may be substituted).

#### Policies

If students complete two upper-division courses in a language other than English, they may petition to take one upper-division course taught in English translation to fulfill the third requirement.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.



Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Comparative Literature MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Comparative Literature Lower-Division Courses

**1A. World Literature: Antiquity to Middle Ages. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to students with credit for course 2AW or 4AW. Study of major texts in world literature, with emphasis on Western civilization. Texts include major works and authors such as *Iliad* or *Odyssey*, Greek tragedies, portions of Bible, Virgil, Petronius, St. Augustine, and others such as *Gilgamesh* or *Tristan and Iseult*. P/NP or letter grading.

**1B. World Literature: Middle Ages to 17th Century. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to students with credit for course 2BW or 4BW. Study of world literature, with emphasis on Western civilization as it grapples with its past and with other civilizations. Examination of works such as Dante's *Divine Comedy*, Cervantes' *Don Quixote*, Shakespeare's *King Lear*, and Sor Juana's Mexican poetry. P/NP or letter grading.

**1C. World Literature: Age of Enlightenment to 20th Century. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to students with credit for course 2CW or 4CW. Study of major texts in world literature, with emphasis on Western civilization. Authors include Swift, Voltaire, Diderot, Rousseau, Goethe, Flaubert, Ibsen, Strindberg, Dostoevsky, Kafka, Joyce, Woolf, and Stevens. P/NP or letter grading.

**1D. Great Books from World at Large. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to students with credit for course 2DW or 4DW. Study of major literary texts usually overlooked in courses that focus only on canon of Western literature. Texts from at least three of following areas read in any given term: African, Caribbean, East Asian, Latin American, and Middle Eastern literature. P/NP or letter grading.

**1E. Social Media and Storytelling: Comparing Cultures. (5)** Lecture, two hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Study of ways in which social media construct increasingly diverse and decentered narratives—with which we make localized sense of world. Equal emphasis on textual, visual, and sonic networks in arts, politics, and health care. P/NP or letter grading.

**2AW. Survey of Literature: Antiquity to Middle Ages. (5)** Lecture, two hours; discussion, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to

students with credit for course 1A or 4AW. Study of selected texts from antiquity to Middle Ages, with emphasis on literary analysis and expository writing. Texts include works and authors such as *Odyssey*, *Gilgamesh*, Sappho, Greek tragedies, *Aeneid*, Petronius, *Beowulf*, Marie de France, *Tristan and Iseult*, *One Thousand and One Nights*, *Popul Vuh*. Satisfies Writing II requirement. Letter grading.

**2BW. Survey of Literature: Middle Ages to 17th Century. (5)** Lecture, two hours; discussion, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 1B or 4BW. Study of selected texts from Middle Ages to 17th century, with emphasis on literary analysis and expository writing. Texts may include works by authors such as Chaucer, Dante, Cervantes, Marguerite de Navarre, Shakespeare, Calderón, Molière, and Racine. Satisfies Writing II requirement. Letter grading.

**2CW. Survey of Literature: Age of Enlightenment to 20th Century. (5)** Lecture, two hours; discussion, two hours. Enforced requisite: English Composition 3. Not open for credit to students with credit for course 1C or 4CW. Study of selected texts from Age of Enlightenment to 20th century, with emphasis on literary analysis and expository writing. Diderot, Dostoevsky, Flaubert, Goethe, Ibsen, James Joyce, Kafka, Jamaica Kincaid, Garcia Marquez, Rousseau, M. Shelley, Strindberg, Swift, Voltaire. Analysis of texts includes focus on structures, processes, and practices that generate inter-group inequities or conflicts as well as those that support fairness and inclusiveness. Satisfies Writing II requirement. Letter grading.

**2DW. Survey of Literature: Great Books from World at Large. (5)** Lecture, two hours; discussion, two hours. Enforced requisite: English Composition 3. Not open for credit to students with credit for course 1D or 4DW. Study of major literary texts usually overlooked in courses that focus only on canon of Western literature, with emphasis on literary analysis and expository writing. Texts from at least three of following areas read in any given term: African, Caribbean, East Asian, Latin American, and Middle Eastern literature. Analysis of texts includes focus on structures, processes, and practices that generate inter-group inequities or conflicts as well as those that support fairness and inclusiveness. Satisfies Writing II requirement. Letter grading.

**4AW. Literature and Writing: Antiquity to Middle Ages. (5)** Discussion, four hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 1A or 2AW. Study and discussion of selected texts from antiquity to Middle Ages, with emphasis on literary analysis and expository writing. Texts include works and authors such as *Iliad*, *Odyssey*, *Gilgamesh*, Sappho, Greek tragedies, *Aeneid*, Petronius, *Beowulf*, or Marie de France. Satisfies Writing II requirement. Letter grading.

**4BW. Literature and Writing: Middle Ages to 17th Century. (5)** Discussion, four hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 1B or 2BW. Study and discussion of selected texts from Middle Ages to 17th century, with emphasis on literary analysis and expository writing. Texts may include works and authors such as Chaucer, Dante's *Divine Comedy*, Cervantes' *Don Quixote*, Shakespeare, *One Thousand and One Nights*, Christine de Pizan, *Popul Vuh*, Molière, and Racine. Satisfies Writing II requirement. Letter grading.

**4CW. Literature and Writing: Age of Enlightenment to 20th Century. (5)** Discussion, four hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 1C or 2CW. Study and discussion of selected texts from Age of Enlightenment to 20th century, with emphasis on literary analysis and expository writing. Texts may include works by authors such as Swift, Voltaire, Diderot, Rousseau, Goethe, M. Shelley, Flaubert, Ibsen, Strindberg, Dostoevsky, Gogol, Kafka, Joyce, Beckett, L. Hughes, and Garcia Marquez. Satisfies Writing II requirement. Letter grading.

**4DW. Literature and Writing: Great Books from World at Large. (5)** Seminar, four hours. Enforced requisite: English Composition 3. Not open for credit to students with credit for course 1D or 2DW. Study and discussion of major literary texts usually overlooked in courses that focus only on canon of Western literature, with emphasis on literary analysis and expository writing. Texts from at least three of following areas read in any given term: African, Caribbean, East Asian, Latin American, and Middle Eastern literature. Texts may include works by authors such as Achebe, Can Xue, Desai, Emecheta, Kincaid, Neruda, Ngugi, Pak, Rushdie, and El Saadawi. Analysis of texts includes focus on structures, processes, and practices that generate inter-group inequities or conflicts as well as those that support fairness and inclusiveness. Satisfies Writing II requirement. Letter grading.

**10. Virtual Realities: Introduction to Humanities. (5)** Lecture, two hours; discussion, two hours. What exactly are humanities? Position of humanities as not science is becoming unclear as human communication, thought, and culture are increasingly tied to technology. Examination of various disciplines within humanities at UCLA to define their place in today's society, contemplate their possible function in tomorrow's world, and determine to whom humanities will and will not cater in future. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Blockchain: Future of Absolutely Everything. (5)** Lecture, three hours; discussion, one hour. Interdisciplinary examination of social, cultural, and scientific workings of blockchain. Critical exploration of ethical, legal, and cultural effects of blockchain's potential to improve human behavior and impact our sense of individuality. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Introduction to Literary and Critical Theory. (5)** Lecture, four hours. Preparation: satisfaction of Entry-Level Writing and College Writing requirements. Requisites: two courses from Comparative Literature 1 or 2 series or English 10 series or Spanish 60 series, etc. Seminar-style introduction to discipline of comparative literature presented through series of texts illustrative of its formation and practice. Letter grading.

**M101. Hebrew Literature in English—Literary Traditions of Ancient Israel: Bible and Apocrypha. (4)** (Same as Jewish Studies M150A.) Lecture, three hours. Study of literary culture of ancient Israel through examination of principal compositional strategies of Hebrew Bible and Apocrypha (read in translation). P/NP or letter grading.

**102. Classical Tradition: Epic. (4)** Seminar, three hours. Designed for upper-division literature majors. Analysis of *Iliad*, *Odyssey*, *Aeneid*, *Gerusalemme Liberata*, and

*Paradise Lost* both in relation to their contemporary societies and to literary traditions. Emphasis on how poets build on work of their predecessors. P/NP or letter grading.

**103. People on Run: Migrants, Minorities, and Multiculturalism in Europe.** (4) Seminar, three hours. Problem of migrants and refugees in ongoing crisis of European Union. Examination of contemporary crisis of European Union and of European multiculturalism in particular. Overview of history of European integration since World War II, as well as more focused examination of ways in which culture and migration have come to dominate discussions of future of what had primarily been conceived of as one economic union. Offered in summer only. P/NP or letter grading.

**104. Art of Film Adaptation.** (4) Seminar, three hours. Engagement with current debates and key theoretical texts about film adaptation. Exploration of art of film adaptation in broad sense, including transformation of short stories, plays, novels, historical accounts, biographies, paintings, musical compositions, or philosophical concepts into multilayered medium of cinema. Adaptations addressed include selection of films from range of cultural and linguistic traditions by directors such as Kiarostami, Varda, Kurosawa, Babenco, Rossellini, Hitchcock, Antonioni, Kieslowski, and Taymor. Specific directors, films, and cinematic traditions vary year to year. P/NP or letter grading.

**C105. Comic Vision.** (4) Lecture, three hours. Designed for upper-division literature majors. Literary masterpieces, both dramatic and nondramatic, selected to demonstrate varieties of comic expression. May be concurrently scheduled with course C205. Undergraduate students read all works in translation. P/NP or letter grading.

**106. Archetypal Heroes in Literature.** (4) Seminar, three hours. Designed for juniors/seniors. Survey and analysis of function and appearance of such archetypal heroes as Achilles, Ulysses, Prometheus, Oedipus, and Orpheus in literature from antiquity to modern period. All works read in translation. P/NP or letter grading.

**107. Film on Brain.** (4) Seminar, three hours; discussion/analysis, two hours; film laboratory, one hour. Designed for juniors/seniors. Survey and analysis of intersections between film analysis and neuroscience. Exploration of questions such as how do cues on screen prompt emotions in mind; what are viewers' neurological responses to comedy; what are potential affective impacts of color; how do brains respond to screen violence. Investigation of emotional contagion that occurs between certain screen characters and certain viewers, including in narrative structures acknowledged to be fictitious. Analysis of filmic strategies and techniques employed by directors to elicit emotional responses from audiences. Students learn to produce five- to eight-minute film on relevant topic in film laboratory. P/NP or letter grading.

**108. Autobiography in Francophone and Anglophone Worlds.** (5) Seminar, three hours. Designed for juniors/seniors. Focus on number of narratives that use autobiographical mode to situate self in relation to history of nations and biography of family members. Introduction to theories of subjectivity and to genre of self-writing in France, Africa, and Caribbean. Comparison of serial autobiographies of Assia Djebar, Annie Ernaux, and Jamaica Kincaid to better understand limits of genre. Texts represent different limit cases of autobiography and can be read as biography, auto/ethnography, and auto/historiography. Examination of differences that emerge between autobiographical pact (Lejeune) that some authors create with their readers and liberties that others take with history. Attention to way visual culture (painting, photography, film) helps authors make their point, access memory, or create metaphors of self. P/NP or letter grading.

**M110. One Thousand and One Nights/Alf Layla Wa-Layla.** (4) (Same as Arabic M110.) Lecture, three hours. Knowledge of Arabic not required. Since its appearance in Europe in 1704, *One Thousand and One Nights* is most well-known work of Arabic literature in West. Examination of cycle of tales more commonly known as *Arabian Nights*, including history of its translation, contemporary oral performances of tales in Arabic-speaking world, literary emergence of vernacular

language in relation to classical Arabic, and Western appropriations of tales in music, film, and novels (Ravel, Rimsky-Korsakov, Barth, Poe, and Walt Disney). P/NP or letter grading.

**111. Histories and Methodologies of Comparative Literature.** (5) Seminar, three hours. Preparation: satisfaction of Entry-Level Writing and College writing requirements. Prerequisites: two courses from Comparative Literature 1 or 2 series or English 10 series or Spanish 60 series. Recommended: course 100. Exploration of history of comparative literature discipline and variety of central methodological past and present debates concerning nature of discipline. Introduction to several key theoretical texts from early 20th century to present, addressing these and other related questions: what does it mean to read comparatively? What is significance of reading literature across existing national and linguistic borders? What are criteria for conducting such comparative readings? Is comparative reading more concerned with finding similarities or differences? P/NP or letter grading.

**112. Poetics of Hip-Hop.** (4) Seminar, three hours. Exploration of poetics of hip-hop within tradition of comparative literature. Examination of rhythm, rhymes, flow, wordplay, traditions of signifying, beats, samples, production, and hermeneutics of music videos within historical framework. Historical and current hip-hop criticism and scholarship from comparative perspective, with goal of developing methods, approaches, and strategies for interpreting and writing about hip-hop. P/NP or letter grading.

**113. Opera in LA Live.** (4) Seminar, three hours; field trips. Interpretation of operas currently being performed in Los Angeles from critical perspective of comparative literature studies. Content varies to match changing repertoire. Critical exploration and relation of every aspect of opera as literary and musical form. Analysis and interpretation of original literary source and libretto, music, singing, staging, dramaturgy, reception, and live performance. Two or more field trips to LA Opera, UCLA Opera, and/or Long Beach Opera to experience opera. P/NP or letter grading.

**M119. Al-Andalus: Literature of Islamic Spain.** (4) (Same as Arabic M155.) Lecture, three hours. Study of literature of Islamic Spain to learn about interaction of Arabic and Western and Arabic and Jewish cultures and to recognize Islamic culture as vital force in European life and letters. P/NP or letter grading.

**M120. Women and Literature in Southeastern Europe.** (4) (Same as Central and East European Studies M120.) Seminar, three hours. Examination of changing roles of women in Balkan countries (Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Greece, Macedonia, Montenegro, Romania, Serbia, Slovenia, Turkey) in last forty years. Emphasis on cultural, social, political, and economic factors affecting women's roles during countries' transition from agricultural to industrial economy and from communism to post-communism (in former communist countries). Sensitizes students to complexity of issues in region and helps them better understand multiplicity of causes of present situation. Interdisciplinary study, drawing on sociological/women's studies, articles, and short fiction by women writers for analysis. Discussion of topics covered in articles, positions taken by authors, and ways in which aspects of Southeast European realities are rendered in fictional form by women writers from region. P/NP or letter grading.

**C122. Renaissance Drama.** (4) Lecture, three hours. Designed for upper-division literature majors. Broad introduction to subject matter and types of plays in Renaissance, with consideration of historical and literary influences on plays. Readings include works of such dramatists as Tasso, Machiavelli, Lope de Vega, Racine, Jonson, Shakespeare. May be concurrently scheduled with course C222. Undergraduate students read all works in translation. P/NP or letter grading.

**M123. Oral Literature and Performance of Arab World.** (4) (Same as Arabic M123.) Lecture, three hours. Knowledge of Arabic not required. Introduction to study of living oral traditions of troubadours, storytellers, oral poets, and performers in Arabic-speaking Middle East. P/NP or letter grading.

**M132. Comparative Media Studies.** (4) (Same as Russian M132.) Lecture, three hours. History, form, and function of various media. Grounded in political and commercial experience of eastern Europe, comparative investigation of media technologies, today's burgeoning markets, and yesterday's tragic abuses. Development of media form(s) and content across various times, places, and cultures, with special attention to Slavic phenomena. Letter grading.

**M142. Travel Narratives, Testimony, Autobiography.** (4) (Same as Portuguese M142C.) Lecture, four hours. Taught in English. Exploration of travel, memory, and narrative in Portuguese-speaking world. Primary and secondary texts depict issues of displacement, cultural contact, and assimilation. Overview of connections among Portuguese-speaking cultures. May be repeated for credit with topic change. P/NP or letter grading.

**M148. Contemporary Arab Film and Song.** (4) (Same as Arabic M148.) Seminar, three hours. Exploration of conjunctions between contemporary Arab film and song and between popular cultures and cultures of commitment (Itizam), with possible focus on specific genres such as realist/neorealist Arab film; feminist Arab film or popular Arab film and song; topics such as nation, gender, and representation or democracy and human rights or censorship, reception, and resistance. Possible examination of various national cinemas such as Tunisian, Egyptian, Moroccan, Algerian, and Palestinian. Various musical genres such as Rai, Mizoued, and Hip-hop also examined in relation to emergence not only of national cinemas, national music industries, and iconic singers but also of video clip, satellite TV, star academy, and reality shows—all products of transnational and pan-Arab mass media. P/NP or letter grading.

**C152. Symbolism and Decadence.** (5) Seminar, four hours. Designed for upper-division literature majors. Study of symbolist and decadent movements in 19th- and 20th-century English and French poetry and prose, including authors such as Baudelaire, Rimbaud, Verlaine, Mallarmé, Wilde, Yeats, and Eliot. May be concurrently scheduled with course C252. Undergraduate students may read all required French texts in translation. P/NP or letter grading.

**C153. Post-Symbolist Poetry and Poetics.** (5) Seminar, four hours. Designed for upper-division literature majors. Study of specific poets and poetics related to them during first half of 20th century. Texts may include poets such as W.B. Yeats, Ezra Pound, T.S. Eliot, Paul Valéry, R.M. Rilke, Gunnar Kjelöf, and Wallace Stevens. May be concurrently scheduled with course C253. Undergraduate students may read all works in translation. P/NP or letter grading.

**154. Adventures of Avant-Garde.** (5) Seminar, four hours. Designed for upper-division literature majors. Interdisciplinary study of avant-garde literature and art, including futurism, Dadaism, Expressionism, Surrealism, new avant-gardes. Works by Marinetti, Boccioni, Picasso, Stein, Malevich, Popova, Mayakovsky, Brecht, Fritz Lang, Duchamp, Breton, Buñuel, Lispector, Warhol, Orhan. Emphasis on cross-fertilization among different kinds of aesthetic expression. P/NP or letter grading.

**C156. Fantastic Fictions.** (4) Seminar, three hours. Designed for upper-division literature majors. Time and again in modern literature, corpses become conduits or catalysts for revelation. What are ghosts that fiction frequently cannot put to rest, and what is their connection to national history or nation language or narrative? Readings from James Joyce, John Banville, Henry James, Toni Morrison, Adolfo Bioy Casares, Juan Carlos Onetti, Juan Rulfo, and Carlos Fuentes, with films by Alejandro Amenabar, Andrei Tarkovsky, and Kenji Mizoguchi. May be concurrently scheduled with course C256. Undergraduate students read all works in translation. P/NP or letter grading.

**C160. Literature and Visual Arts.** (4) Lecture, three hours. Designed for juniors/seniors. Knowledge of art history valuable but not required. Assuming that literature and visual arts are in some degree expressions of cultural and philosophical patterns of eras, study of relationships between writers and movements in painting, architecture, and sculpture. Interdisciplinary investigation of similarities and differences between



plastic and verbal arts in comparative study. May be repeated for credit with instructor and/or topic change. May be concurrently scheduled with course C260. Undergraduate students read all works in translation. P/NP or letter grading.

**C161. Fiction and History. (4)** Seminar, three hours. Designed for upper-division literature majors. Analysis of use of historical events, situations, and characters in literary works of Renaissance and/or modern period. Texts and individual assignments range from Renaissance historical narratives (Italian humanists, Machiavelli) to 19th- and 20th-century novels by authors such as Stendhal, Verga, Tomasi di Lampedusa, Carpentier, and Kundera. Use of fictional methods by historians. Emphasis on how aesthetic, ideological, and political factors influence authors' choice and use of historical material. May be concurrently scheduled with course C261. P/NP or letter grading.

**M162. Israel Seen through Its Literature. (4)** (Same as Jewish Studies M162.) Lecture, three hours. Attempt to impart profound understanding of Israel as seen through its literature. Examination of variety of literary texts—stories, novels, and poems—and reading of them in context of their historical backgrounds. P/NP or letter grading.

**C163. Crisis of Consciousness in Modern Literature. (5)** Seminar, three hours. Designed for upper-division literature majors. Study of modern European and American works that are concerned both in subject matter and artistic methods with growing self-consciousness of human beings and their society, with focus on works of Kafka, Rilke, Woolf, Sartre, and Stevens. May be concurrently scheduled with course C263. Undergraduate students may read all works in translation. P/NP or letter grading.

**C164. Modern European Novel. (5)** Seminar, three hours. Designed for upper-division literature majors. Study of modern European novel's development from 19th to 21st century. Use of authors such as Hardy, Strindberg, Lagerkvist, Gide, Proust, Mann, Joyce, Kafka, Woolf, Nabokov, Grass, Christa Wolf, and Enquist to focus on development of themes such as shifting authority, gender conflicts, change versus stability, formal experimentation, and self-consciousness in narrative. May be concurrently scheduled with course C264. Undergraduate students may read all works in translation but are encouraged to read in original language whenever possible. P/NP or letter grading.

**M165. Holocaust in Literature. (4)** (Same as Jewish Studies M187.) Lecture, three hours. Investigation of how Holocaust informs variety of literary and cinema works and raises wide range of aesthetic and moral questions. P/NP or letter grading.

**M166. Modern Jewish Literature in English: Diaspora Literature. (4)** (Same as Jewish Studies M151A.) Lecture, three hours. Study of literary responses of Jews to modernity, its challenges, and threats. Readings in texts originally written in English or translated from Hebrew, Yiddish, German, Russian, French, and Italian. Analysis of formal aspects of each work. P/NP or letter grading.

**M167. Modern Arabic Literature in English. (4)** (Same as Arabic M151.) Lecture, three hours. Designed for upper-division literature majors. Topics may include constructions of otherness in modern Arab culture; East-West debate; memory, trauma, and mourning; violence, narrative, and ethics; globalization, oil, and cultural insurgency; Arab culture in transnational context or questions of reception, exoticism, translation, and marketing. Genres may include prison narratives; novel of terror; memoirs by women and/or by refugees and exiles; 19th- and 20th-century travel narratives; Arabic romantic poetry; literature of pre-1948; rise of Arab novel. Areas may range from generic look at Arab world to narrow focus on Maghreb or one country such as Algeria, Palestine, Iraq, Lebanon, or Egypt. May also be organized around Arab literatures written in one specific language, namely English, Arabic, or French. Letter grading.

**169. Continental African Authors. (4)** Lecture, three hours. Prerequisite: one course from 1A, 1B, 1C, 2AW, 2BW, 2CV, or English Composition 3 or 3H. Introduction to new set of African authors and attempt to discern

similarities or differences they may have with major authors such as Achebe, Ngugi, Armath, Soyinka, etc. P/NP or letter grading.

**CM170. Alternate Traditions: In Search of Female Voices in Contemporary Literature. (5)** (Same as Gender Studies CM170.) Seminar, three hours. Designed for upper-division literature majors. Investigation of narrative texts by contemporary French, German, English, American, Spanish American, African, and Asian women writers from cross-cultural perspective. Common themes, problems, and techniques. Concurrently scheduled with course CM270. P/NP or letter grading.

**M171. Chinese Immigrant Literature and Film. (4)** (Same as Asian American Studies M130B and Chinese M153.) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. In-depth look at Chinese immigrant experience by reading literature and watching films. Theories of diaspora, gender, and race to inform thinking and discussion of relevant issues. P/NP or letter grading.

**C172. Postmodern Novel. (4)** Seminar, three hours. Designed for upper-division literature majors. Study of postmodern novel as it developed out of modernism. Postmodernism defined in three different ways—philosophically, scientifically, and economically. Emphasis on relationship of recent novels to theories of structuralism and poststructuralism. Readings include authors such as Borges, Beckett, Nabokov, Pynchon, Fuentes, Grass, Böll, and Calvino. Concurrently scheduled with course C272. Undergraduate students read all works in translation. P/NP or letter grading.

**M175. Race, Gender, Class. (5)** (Same as Asian American Studies M165.) Seminar, three hours. Theoretical and literary readings combined to explore three main aspects of social and cultural experience (race, gender, class) as separate but interconnected spheres affecting both minority and majority populations in U.S. Examination of these issues from comparative perspectives. P/NP or letter grading.

**M176. Literature and Technology. (4)** (Same as Japanese M156.) Lecture, three hours. Knowledge of Japanese not required. Examination of representation of technology in 20th-century fiction. Discussion of impact of technology on shifting images of gender, subjectivity, and national identity. P/NP or letter grading.

**177. Comparative Literature of Francophone and Anglophone Caribbean. (5)** Seminar, three hours. Designed for juniors/seniors. Introduction to literature and culture of Caribbean basin from New Orleans to Haiti, Martinique, Guadeloupe, Jamaica, Antigua, or Trinidad. Topics include history of French and English colonial influences and rivalries, Haitian revolution and its literary legacies, emergence of nationalist discourses, search for cultural identity, rhetoric of negritude, global poetics of relation, créolité movement, and literary achievements of African diaspora. P/NP or letter grading.

**C178. India Ink: Literature and Culture of Modern South Asia. (5)** Seminar, three hours. Survey of significant issues in history of 20th-century Indian literature and culture. Great works of modern Indian culture by such figures as Rabindranath Tagore, Satyajit Ray, Faiz Ahmed Faiz, and U.R. Anantha Murthy, including novels, short stories, poetry, films, music, and works in cultural criticism and historical scholarship. Central and defining issue for 20th-century Indian culture is experience of British colonial rule and massive cultural and material changes that accompanied it. Exploration of manner in which literature and culture have developed in interaction with powerful social forces, such as struggle for national independence from Britain under leaders like Mahatma Gandhi and expansion of Indian diaspora. Concurrently scheduled with course C278. P/NP or letter grading.

**M179SL. Movement in Art, Philosophy, and Daily Life. (5)** (Same as Middle Eastern Studies M179SL.) Seminar, three hours; fieldwork, three hours. Exploration of relation between humans and world. Only relevant output of brain, irrespective of what may or may not go on inside it, is control over movements. In living animals, sentience or consciousness exists to integrate often complex input and decide on course of action. Similarly, ownership and agency are inseparably associated with biological systems that control our

movements. Movements play vital part in constructing psychosocial environment that permeates and surrounds us. Exploration of how humans and animals move, and how movement, as well as limitations of mobility, relate to personal and community identity. P/NP or letter grading.

**180. Variable Topics: Medical Humanities in Comparative Contexts. (4)** Seminar, three hours. Designed for juniors/seniors. Study and discussion of defined periods and approaches in medical humanities, giving pride of place to literary and cultural expressions in dialogue with other disciplines such as anthropology, history, linguistics, philosophy, psychology, or sociology. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**180SL. Variable Topics: Medical Humanities in Comparative Contexts and Community-Based Learning. (4)** Seminar, three hours; fieldwork, three hours. Exploration of topics in medical humanities with community service component, giving pride of place to literary and cultural expressions with other disciplines such as art, philosophy, or sociology. Ways in which medical humanities can make contributions to Los Angeles community through service learning. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**186. Undergraduate Research Seminar: Comparative Literature. (4)** Seminar, three hours. Preparation: satisfaction of Entry-Level Writing and College Writing requirements. Designed for undergraduate students interested in learning more about research and/or writing honors thesis. Introduction to research in comparative literature, with focus on critical and theoretical methodologies and approaches to analyzing literary texts. Students complete final paper on topic of their own design. P/NP or letter grading.

**C187. Reading across Culture. (5)** Seminar, three hours. What is it we do when we try to understand words, habits, gestures, and beliefs not our own? Do we understand something foreign to us by immersing ourselves in it or by standing apart? Does ability to understand something foreign imply taking universal standpoint? Can we make judgments about beliefs other than our own? Questions of cultural interpretation have long history in both Western and non-Western cultures. Discussion of history of questions about cross-cultural interpretation and comparative interpretation of cultures in both comparative literature and cultural anthropology. Reading of some very complex and influential works by such writers as Claude Lévi-Strauss, Amitav Ghosh, James Clifford, Edward Said, Gayatri Spivak, and Erich Auerbach. Concurrently scheduled with course C287. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor.

May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Comparative Literature. (2)** Seminar, three hours. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for credit. P/NP grading.

**191. Variable Topics in Comparative Literature. (4)** Seminar, three hours. Designed for juniors/seniors. Study and discussion of limited periods and specialized issues and approaches in literary theory, especially in relation to other modes of discourse such as history, philosophy, psychology, linguistics, anthropology. Development of culminating project required. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**M191P. Careers in Humanities. (4)** (Same as English M191P) Seminar, three hours. Challenges misassumptions regarding humanities majors and their practical applications to life after graduation. Exploration of wide range of careers, with hands-on practice in crafting professional narrative. Guest lectures from UCLA professionals and alumni—all experts in career planning and local industry. Students engage with workplace leaders, and simultaneously build professional dossier—on paper or online—in preparation for life after UCLA with a humanities degree. P/NP or letter grading.

**197. Individual Studies in Comparative Literature. (2 to 4)** Tutorial, three hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198. Honors Research in Comparative Literature. (2 to 4)** Tutorial, three hours. Limited to senior comparative literature honors students. Development and completion of honors thesis or comprehensive project on comparative topic selected by student and written under supervision of core faculty member. Students expected to meet regularly with supervisor throughout term. No more than one course may be used to fulfill four-course requirement for Comparative Literature majors. May be repeated once for maximum of 8 units. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Comparative Literature. (2 to 4)** Tutorial, three hours. Requisite: course 100. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with consent of chair. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Theory of Comparative Literature. (6)** Seminar, three hours. Study of theory of literature, with emphasis on genealogy of theoretical problems. S/U or letter grading.

**200B. Methodology of Comparative Literature. (6)** Seminar, three hours. Requisite: course 200A. Study of methodology of comparative literature, with emphasis on its history. S/U or letter grading.

**202. Classical Tradition: Epic, Tragedy, or Comedy. (4)** Seminar, three hours. Preparation: reading knowledge of Greek, Latin, or Italian. Analysis of Greek and Roman works and their re-creations in Renaissance and modern periods. Emphasis on how poets build on

work of their predecessors. Reading may range from *Iliad* or *Odyssey* to tragedies by Sophocles and Euripides or satires by Aristophanes. S/U or letter grading.

**C205. Comic Vision. (4)** Lecture, three hours. Preparation: reading knowledge of one appropriate foreign language. Literary masterpieces, both dramatic and nondramatic, selected to demonstrate varieties of comic expression. May be concurrently scheduled with course C105. Graduate students required to prepare papers based on texts read in original languages and to meet as group one additional hour each week. S/U or letter grading.

**206. Archetypal Heroes in Literature. (4)** Seminar, three hours. Preparation: reading knowledge of one appropriate foreign language. Survey and analysis of function and appearance of such archetypal heroes as Achilles, Ulysses, Prometheus, Oedipus, and Orpheus in literatures from antiquity to modern period. S/U or letter grading.

**210. Comparative Studies in Autobiography. (5)** Seminar, three hours. Limited to graduate students. Introduction to theories of autobiography and subjectivity and to genre of autobiography in literatures in French and English and across centuries. Topics include early modern approaches to self-writing, Rousseau and emergence of modern self, women's autobiography, postcolonial autobiography, cultural studies and turn to personal, fictions of self-representation, serial autobiography, and virtual selves. Theorists may include Georges Gusdorf, Philippe Lejeune, Paul de Man, Jacques Derrida, Helene Cixous, Michel Foucault, Pierre Bourdieu, and Toril Moi. S/U or letter grading.

**220. Topics in Medieval Studies. (4)** Seminar, four hours. Preparation: reading knowledge of one appropriate foreign language. Examination of nature of cross-cultural, cross-linguistic, and cross-confessional exchange in known medieval worlds of Europe, Asia, and Africa, with focus on communication and translation. Drawing on literary, social, cultural, economic, art history, and manuscript studies to trace formation of discourses produced by diverse encounters. Choice of bilingual texts. May be repeated for credit with topic change. S/U or letter grading.

**C222. Renaissance Drama. (4)** Lecture, three hours. Preparation: reading knowledge of one appropriate foreign language. Broad introduction to subject matter and types of plays in Renaissance, with consideration of historical and literary influences on plays. Readings include works of such dramatists as Tasso, Machiavelli, Lope de Vega, Racine, Jonson, Shakespeare. May be concurrently scheduled with course C122. Graduate students required to prepare papers based on texts read in original languages and to meet as group one additional hour each week. S/U or letter grading.

**250A-250B. Seminar in Experimental Critical Theory. (4-4)** Seminar, three hours. Advanced course in critical theory, drawing on wide range of approaches and methods, from anthropology, art, history, literature, performance, philosophy, and political theory. Variable topics are set annually. Includes canonical thinkers (e.g., J. Butler, J. Derrida, M. Detienne, G. Dumézil, F. Héritier, B. Latour, C. Lévi-Strauss, A. Mbembe, E. Renan, M. Strathern) and contemporary critics (e.g., E. Apter, B. Cassin, E. Coccia, S. Bachir Diagne, W. Chi Dimock, P. Frankopan, S. Hartman, L. Lowe, J. Osterhammel, J.-F. Schaub, G. Spivak, E. Viveiros de Castro). S/U or letter grading. **250A.** Enforced requisite: course 200A. **250B.** Enforced requisite: course 250A.

**M251. Literatures and Cultures of Maghreb. (4)** (Same as Arabic M255.) Seminar, three hours. Limited to graduate students. Examination of traditionally diverse literatures of Maghreb in their multiple and competing contexts of language and gender politics, religious and cultural formations, Pan-Arabism and postcolonial nationhood, Third-Worldism and economic development, modernity and globalization, immigration and citizenship, soccer industry and Rai music, mass media and Star Academy Maghreb, and more. Readings of literatures in English and in English translations from different Maghreb languages (particularly Arabic and French) in conjunction with theories of language and linguistic pluralism, cultural translation,

deconstruction, and host of other relevant theories of gender, globalization, and postcolonial cultural studies. S/U or letter grading.

**C252. Symbolism and Decadence. (5)** Seminar, four hours. Preparation: reading knowledge of French. Study of symbolist and decadent movements in 19th- and 20th-century English and French poetry and prose, including authors such as Baudelaire, Rimbaud, Verlaine, Mallarmé, Wilde, Yeats, and Eliot. May be concurrently scheduled with course C152. Graduate students required to prepare papers based on texts read in original languages and may meet as group one additional hour each week. S/U or letter grading.

**C253. Post-Symbolist Poetry and Poetics. (5)** Seminar, four hours. Study of specific poets and poetics related to them during first half of 20th century. Texts may include poets such as W.B. Yeats, Ezra Pound, T.S. Eliot, Paul Valéry, R.M. Rilke, Gunnar Ekelöf, and Wallace Stevens. May be concurrently scheduled with course C153. Graduate students may meet as group one additional hour each week. S/U or letter grading.

**C256. Fantastic Fictions. (4)** Seminar, three hours. Time and again in modern literature, corpses become conduits or catalysts for revelation. What are ghosts that fiction frequently cannot put to rest, and what is their connection to national history or nation language or narrative? Readings from James Joyce, John Banville, Henry James, Toni Morrison, Adolfo Bioy Casares, Juan Carlos Onetti, Juan Rulfo, and Carlos Fuentes, with films by Alejandro Amenabar, Andrei Tarkovsky, and Kenji Mizoguchi. May be concurrently scheduled with course C156. Graduate students have additional meetings and theoretical readings by Benjamin, Freud, Barthes, Derrida, Rabate, Rickels, and Caruth. S/U or letter grading.

**C260. Literature and Visual Arts. (4)** Lecture, three hours. Knowledge of art history valuable but not required. Assuming that literature and visual arts are in some degree expressions of cultural and philosophical patterns of eras, study of relationships between writers and movements in painting, architecture, and sculpture. Interdisciplinary investigation of similarities and differences between plastic and verbal arts in comparative study. May be repeated for credit with instructor and/or topic change. May be concurrently scheduled with course C160. Graduate students required to read works in original languages. S/U or letter grading.

**C261. Fiction and History. (4)** Seminar, three hours. Analysis of use of historical events, situations, and characters in literary works of Renaissance and/or modern period. Texts and individual assignments range from Renaissance historical narratives (Italian humanists, Machiavelli) to 19th- and 20th-century novels by authors such as Stendhal, Verge, Tomasi di Lampedusa, Carpentier, and Kundera. Use of fictional methods by historians. Emphasis on how aesthetic, ideological, and political factors influence authors' choice and use of historical material. May be concurrently scheduled with course C161. Graduate students required to prepare papers based on texts read in original languages. S/U or letter grading.

**C263. Crisis of Consciousness in Modern Literature. (5)** Seminar, three hours. Preparation: reading knowledge of one appropriate foreign language. Study of modern European and American works that are concerned both in subject matter and artistic methods with growing self-consciousness of human beings and their society, with focus on works of Kafka, Rilke, Woolf, Sartre, and Stevens. May be concurrently scheduled with course C163. Graduate students required to prepare papers based on texts read in original languages and to meet as group one additional hour each week. S/U or letter grading.

**C264. Modern European Novel. (5)** Seminar, three hours. Preparation: reading knowledge of at least one appropriate foreign language. Study of modern European novel's development from 19th to 21st century. Use of authors such as Hardy, Strindberg, Lagerkvist, Gide, Proust, Mann, Joyce, Kafka, Woolf, Nabokov, Grass, Christa Wolf, and Enquist to focus on development of themes such as shifting authority, gender conflicts, change versus stability, formal experimentation, and self-consciousness in narrative. May be concur-

rently scheduled with course C164. Graduate students required to prepare papers based on texts read in original languages whenever possible and to meet one additional hour each week. S/U or letter grading.

**266. Writing and Photographic Image. (4)** Seminar, three hours. Preparation: knowledge of one appropriate foreign language. Designed for graduate students. Investigation of intertextual relations between writing and photography in American and European contexts. Study rests on premise that photograph enters public domain framed by writing and discourse and that, in turn, some forms of writing are framed by photographic modes of representation. S/U or letter grading.

**267. Comparative Arab Studies. (5)** Seminar, three hours. Limited to graduate students. Investigation of ways in which Arab *littérateurs*, artists, and intellectuals have perseveringly sought to imagine and construct viable structures of cultural empowerment on pyre of political project of Arab nationalism and in growing response to globalization and consolidation of Western colonial and imperial ideologies in Arab world. Particular attention to technical and experimental modes of expression through which Arab artists working in different genres have engaged with some persistent and recurrent questions related to their mission, vocation, and commitment (*iltizam*) to fundamental concerns of Arab world, to responsible mimetic urgency, and to general uses/potencies of rhetoric and poetics within contexts of profound asymmetries of power, temporalities, and actualities. S/U or letter grading.

**CM270. Alternate Traditions: In Search of Female Voices in Contemporary Literature. (5)** (Same as Gender Studies CM270.) Seminar, four hours. Designed for graduate students. Investigation of narrative texts by contemporary French, German, English, American, Spanish American, African, and Asian women writers from cross-cultural perspective. Common themes, problems, and techniques. Concurrently scheduled with course CM170. S/U or letter grading.

**271. Imaginary Women. (4)** Seminar, three hours. Preparation: reading knowledge of one appropriate foreign language. Examination of archetypal female figures in classical/traditional literatures and their incarnations in modern African American, Anglo-American, Asian American, European, Native American, and Spanish-American literatures. Particular emphasis on position of women in cultures and ideology of authors. S/U or letter grading.

**C272. Postmodern Novel. (4)** Seminar, three hours. Preparation: reading knowledge of one appropriate foreign language. Study of postmodern novel as it developed out of modernism. Postmodernism defined in three different ways—philosophically, scientifically, and economically. Emphasis on relationship of recent novels to theories of structuralism and poststructuralism. Readings include authors such as Borges, Beckett, Nabokov, Pynchon, Fuentes, Grass, Böll, and Calvino. Concurrently scheduled with course C172. Graduate students required to meet as group one additional hour each week. S/U or letter grading.

**M274. Theorizing Third World. (4)** (Same as Asian American Studies M261.) Seminar, three hours. Investigation of politics of power, gender, and race in complex relationships between so-called First World and Third World, using both theoretical and textual approaches. S/U or letter grading.

**275. Nationalism and Immigration Today. (4)** Seminar, three hours. Preparation: knowledge of one appropriate foreign language. Designed for graduate students. Literary and social discourses on issues of nationalism, immigration, and politics of identity in our postcolonial era, with consideration of broad range of texts (aesthetic representations, theoretical reflections, and legal documents). S/U or letter grading.

**M276. Reading Modern Bodies. (4)** (Same as Japanese M276.) Seminar, three hours. Designed for graduate students. Exploration of construction of human body through various modern technologies and discourses, including those of disease, diet, race, gender, and sexuality. Examination of texts from variety of locales, with particular emphasis on Japan. S/U or letter grading.

**277. Caribbean Literature from Negritude to Diaspora. (4)** Seminar, three hours. Historical approach to modern Anglophone and Francophone Caribbean literature, retracing search for cultural identity, beginning with negritude movement's claim to Africa as expressed in Aimé Césaire's classic poem *Cahier d'un retour au pays natal* and ending with consideration of dispersion of identities in work of writers and intellectuals who contend with problem of diasporic Caribbean culture. S/U or letter grading.

**C278. India Ink: Literature and Culture of Modern South Asia. (5)** Seminar, three hours. Survey of significant issues in history of 20th-century Indian literature and culture. Great works of modern Indian culture by such figures as Rabindranath Tagore, Satyajit Ray, Faiz Ahmed Faiz, and U.R. Anantha Murthy, including novels, short stories, poetry, films, music, and works in cultural criticism and historical scholarship. Central and defining issue for 20th-century Indian culture is experience of British colonial rule and massive cultural and material changes that accompanied it. Exploration of manner in which literature and culture have developed in interaction with powerful social forces, such as struggle for national independence from Britain under leaders like Mahatma Gandhi and expansion of Indian diaspora. Concurrently scheduled with course C178. S/U grading.

**279. Subaltern Studies: Colonial Histories and Cultural Critique. (5)** Seminar, three hours. Examination of certain links between practice of cultural criticism and problems in historiography of colonial and post-colonial societies. Use of key texts by members of Subaltern Studies collective of Indian historians to explore some central issues arising from this relationship. What kind of interdisciplinary space is produced by dialog of history and literary and cultural theory? Attention to literary texts to practice such interdisciplinary criticism. Nature of modernity in colonial setting. What is nature of bourgeoisie in colonial society? What kind of modernization does it seek? What is relationship of modern metropolitan bourgeoisie to indigenous one? S/U or letter grading.

**280. Latin American Literature in Comparative Contexts. (4)** Seminar, three hours. Preparation: reading knowledge of one foreign language. In-depth study of one topic of Latin American literature in comparative context. May be repeated for credit. S/U or letter grading.

**M281. Studies in Contemporary Spanish-American Literature. (4)** (Same as Spanish M280B.) Seminar, three hours. Preparation: reading knowledge of one foreign language. In-depth study of topic of Latin American literature in comparative context. May be repeated for credit. S/U or letter grading.

**284. Theories of Translation. (4)** Seminar, three hours. Examination of various approaches to concept of translation and to its significance for literary studies. Readings include authors such as Matthew Arnold, Walter Benjamin, George Steiner, and Susan Bassnett. S/U or letter grading.

**285. Translation Workshop. (4)** Seminar, three hours. Preparation: solid reading knowledge of at least one foreign language. Open to qualified undergraduates with proper language preparation. Introduction to principles of literary translation heuristically, that is, on basis of texts participating students translate, and presentation of student work for discussion. Opportunity for students to determine whether they have desire and talent to pursue literary translation as part of their professional lives. S/U or letter grading.

**286. Workshop: Social Sciences Translation. (4)** Seminar, three hours; tutorial, one hour. Preparation: solid reading knowledge of at least one foreign language. Designed for graduate social sciences students. Techniques students need to render scholarly texts in their fields from language they use in their research into English and to advance their knowledge of language to stage where they can use it more effectively in all aspects of their research, as well as take advantage of translation techniques they have learned. S/U or letter grading.

**C287. Reading across Culture. (5)** Seminar, three hours. What is it we do when we try to understand words, habits, gestures, and beliefs not our own? Do we understand something foreign to us by immersing our-

selves in it or by standing apart? Does ability to understand something foreign imply taking universal standpoint? Can we make judgments about beliefs other than our own? Questions of cultural interpretation have long history in both Western and non-Western cultures. Discussion of history of questions about cross-cultural interpretation and comparative interpretation of cultures in both comparative literature and cultural anthropology. Reading of some very complex and influential works by such writers as Claude Lévi-Strauss, Amitav Ghosh, James Clifford, Edward Said, Gayatri Spivak, and Erich Auerbach. Concurrently scheduled with course C187. S/U or letter grading.

**M288. Modern Arab Thought. (4)** (Same as Arabic M288.) Seminar, three hours. While much has been written and said about resurgence and spread of political Islam after collapse of ideology of secular nationalism and failure of Arab left to apprehend exigencies of postrevolutionary/postcolonial moment, little has been devoted to less sensational topic of modern Arab thought despite unmistakable proliferation of critical output produced by Arab thinkers and artists in aftermath of 1967. Course addresses and redresses this glaring imbalance by considering new cultural material—literary, critical, philosophical, artistic, and journalistic—produced before and after al-Nahda but mostly before and after 1967 and fosters insightful approaches to unlikely coexistence in Arab contemporaneity of ever-deepening and generalized crisis and of steady and consolidated development (if not effervescence) of cultural and artistic production. S/U or letter grading.

**289. Theory of Film and Literature. (5)** Seminar, three hours; film screening, two hours. Study of redefinition and aims of theories of film and literature. Approaches vary by instructor (e.g., postcoloniality, psychoanalysis, semiotics, transnationalism, gender theory). S/U or letter grading.

**290. Contemporary Theories of Criticism. (4)** Seminar, three hours. Prerequisite: course 200A. Advanced course in theory of literature focusing on structuralist, psychoanalytic, and Marxist approaches. S/U or letter grading.

**291. Problems in Theory of Literature. (4)** Seminar, three hours. Preparation: reading knowledge of French or German. Prerequisite: course 290. Study of specific topics in theory of literature for advanced students in criticism and literary theory. May be repeated for credit. S/U or letter grading.

**292. Theories of Empire. (4)** Seminar, three hours. History of theorizations of modern imperialism and colonialism since relevant writings of Karl Marx and Friedrich Engels. Examination of number of landmark theories of empire and consideration of whether or not they may be said to constitute coherent tradition or line of theoretical development. Question of resistance to imperial rule and role it plays in these theoretical accounts. S/U or letter grading.

**299. Aesthetics and Literature. (4)** Seminar, three hours. Preparation: reading knowledge of one appropriate foreign language. Study of literary theory through exploration of approaches to literature by philosophers grounded on analytic tradition. Careful attention to concepts of truth, meaning, expression, representation, metaphor, fiction, and literature. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Preparation for Teaching Literature and Composition. (4)** Seminar, three hours. Seminar on problems and methods of presenting literary texts as exemplary materials in teaching of composition. Deals with theory and classroom practice and involves individual counseling and faculty evaluation of teaching assistants' performance. May not be applied toward MA course requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor,

department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research. (2 to 12)** Tutorial, to be arranged. Limited to graduate comparative literature students. Necessary for students in comparative literature who need additional individual study and research. May be repeated for credit. S/U or letter grading.

**596X. Directed Individual Study. (2 to 4)** Tutorial, to be arranged. Preparation for foreign language examination. S/U grading.

**597. Preparation for MA and PhD Examinations. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. Preparation for MA comprehensive examination or PhD qualifying examinations. May be repeated for credit. S/U grading.

**599. Research for PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Limited to PhD students. Research for and preparation of PhD dissertation. May be repeated for credit. S/U grading.

## COMPUTATIONAL AND SYSTEMS BIOLOGY

*Interdepartmental Program  
College of Letters and Science*

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**Matteo Pellegrini, PhD, Chair**  
**Xia Yang, PhD, Vice Chair**

### Faculty Committee

Abigail W. Bigham, PhD (*Anthropology*)

Eric J. Deeds, PhD (*Integrative Biology and Physiology*)

Alexander Hoffmann, PhD (*Microbiology, Immunology, and Molecular Genetics*)

Shantanu H. Joshi, PhD (*Bioengineering, Neurology*)

James O. Lloyd-Smith, PhD (*Computational Medicine, Ecology and Evolutionary Biology*)

Aaron S. Meyer, PhD (*Bioengineering*)

Matteo Pellegrini, PhD (*Human Genetics; Molecular, Cell, and Developmental Biology*)

Van M. Savage, PhD (*Computational Medicine, Ecology and Evolutionary Biology*)

Roy Wollman, PhD (*Chemistry and Biochemistry, Integrative Biology and Physiology*)

Xinshu Grace Xiao, PhD (*Integrative Biology and Physiology*)

Xia Yang, PhD (*Integrative Biology and Physiology*)

### Overview

The major in Computational and Systems Biology is designed primarily for highly motivated undergraduate students interested in interdisciplinary studies in life sciences, behavioral sciences, and engineering and computer sciences. Preparation for the major consists of a broad foundation in basic sciences—chemistry,

biology, physics, and mathematics, plus an introduction to computing. The major itself provides students with foundations in mathematical modeling, information processing, and control and system analysis, with an emphasis on quantitative ideas and methodologies. Mathematical and other analytical skills are essential in the major.

Computational and Systems Biology majors have several options for in-depth studies: a coherent integration of courses selected from one of three tracks in bioinformatics, biological data sciences, or dynamical modeling. The major is appropriate preparation for employment or for graduate studies in any of these areas, with emphasis on interdisciplinary activities. It is also appropriate preparation for professional school studies in dentistry, engineering, management, medicine, and public health.

### Undergraduate Major

#### Computational and Systems Biology BS

Computational and Systems Biology majors select a coherent integration of courses from one of three designated tracks: bioinformatics, biological data sciences, or dynamical modeling. The synergy for all tracks is integrative systems, information, and computational systems modeling sciences in biology. The focus is primarily quantitative, as mastery of advanced quantitative skills is essential for multidisciplinary understanding. Each track emphasizes different systems or modalities, and modeling or other computational approaches. Students choose one of the three tracks when they declare the major. Well-justified customized tracks may also be approved by the faculty.

#### Bioinformatics Track

The bioinformatics track is designed for students interested in computational discovery and management of biological data, primarily genomic, proteomic, or metabolomic data. Bioinformatics emphasizes computational, statistical, and other mathematical approaches for mining, modeling, and analyzing high-throughput biological data and the inherent structure of biological information. Example research problems include finding statistical patterns that reveal genomic or evolutionary or developmental information, studying how regulatory sequences give rise to programs of gene expression, or researching how the genome encodes the capabilities of the human mind.

#### Biological Data Sciences Track

The biological data sciences track addresses a diverse set of biological questions—ranging from medicine, to genomics, physiology, pharmacology, neuroscience, ecology, and evolution—using recent tools and advances in mathematics and computation—specifically machine learning, statistical data sciences, and informatics. Biological data sciences leverages new and developing courses within computational and systems biology and across UCLA, and greatly aids students who aim to go di-

rectly into industry—biotech, pharmaceuticals, and more—as well as computational biology graduate school. The track has a strong focus and deep integration with life sciences.

### Dynamical Modeling Track

The dynamical modeling track seeks to provide students a strong foundation in the use of mathematical and computational models for analyzing biological systems. The modeling approaches are based on a varied set of approaches such as partial differential equations, stochastic equations, dynamical systems theory, stability theory and linear algebra, network theory, cellular automata, and numerical methods. Dynamical models are the heart of evolution that underpin all of biology and can be applied to disease spread, tumor growth and treatment, wound healing, cell migration, blood flow, ecology, climate change biology, population genetics, evolutionary theory, game theory, and scaling theory. Models are tailored based on the biological and physical details of the system and can often be simplified or used to build intuition based on the associated timescales and spatial dimensions—from cellular signaling and transcriptional regulation to communication between organs through hormones to consumer-resource interactions among species. The track allows students to develop quantitative approaches to interpret complex biological systems and is a gateway towards careers in biotechnology and academia.

### Capstone Major

The Computational and Systems Biology major is a designated capstone major. The capstone experience is a senior-level sequence of two courses integrating the discipline via mathematical modeling, simulation, and active research and report writing. Students are expected to demonstrate critical thinking skills and familiarity with research techniques needed to successfully pursue a project in computational and systems biology, conceive and execute a project on which they engage current methods and theory, communicate original scholarly findings to peers both in oral and written form, and work productively with others as part of a team. The experience culminates with completion of the senior thesis requirement.

### Learning Outcomes

The Computational and Systems Biology major has the following learning outcomes:

- Demonstrated familiarity with research techniques needed to successfully pursue a research project
- Demonstrated critical thinking skills in mathematics, computation, and quantitative thinking
- Demonstrated critical thinking skills in life science disciplines and biological applications
- Conception and execution of a research project that engages current methods and theory
- Oral and written communication of original scholarly findings to peers
- Productive participation with others as part of a research team



## Entry to the Major

### Pre-major

Students entering UCLA directly from high school or first-term transfer students who declare the Computational and Systems Biology pre-major at the time of application are automatically admitted.

Current students who were admitted as first-year or transfer students (transfer students must have been admitted under the division of life sciences) may request to declare the pre-major once they have met the following criteria: (1) completed one quarter at UCLA, (2) are in good academic standing, (3) have a minimum cumulative grade-point average (GPA) of 2.0, and (4) have established a pre-major GPA of a minimum of 2.7 by taking at least one pre-major course at UCLA for a letter grade.

Requests to declare the pre-major should be sent by e-mail to the [program](#). For more information, see the [program website](#).

All courses taken for the pre-major must be completed with a grade of C or better. Pre-major course Computer Science 32 is required for students following the Biological Data Sciences track, but does not have to be completed prior to applying to the major. Pre-major courses Program in Computing 10B and 10C, or Computer Sciences 32, are required for students following the Bioinformatics track, but do not have to be completed prior to applying to the major.

All students are identified as pre-majors until they satisfy the preparation for the major requirements by achieving (1) a minimum 2.7 GPA in all pre-major courses, and (2) a minimum grade of C in all pre-major courses.

### Transfer Students

Transfer applicants to the Computational and Systems Biology major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one year of general chemistry with laboratory for majors, two years of calculus for majors, one year of calculus-based physics, one year of biology with laboratory for majors, and one programming course using C++, Python, or similar language.

Transfer applicants must meet the same academic requirements as current UCLA students, based on all courses transferred from another institution that satisfy pre-major requirements, and must have completed one 12-unit term of residence in regular session at UCLA.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* A minimum of 66 to 82 units (depending on the calculus series, computer programming courses, and additional requisites for specific concentrations), including Chemistry and Biochemistry 14A, 14B, and 14BL, or 20A, 20B, and 20L; Computer Science 31 or

Program in Computing 10A; Life Sciences 7A, 7B, 7C; Life Sciences 30A, 30B, 40, and Computational and Systems Biology M32 or Mathematics M32T, or Mathematics 31A or 31AL, 31B, and Statistics 10; Mathematics 33A, 33B; Physics 1A, 1B, and 1C, or 1AH, 1BH, and 1CH, or Physics 5A, 5B, and 5C.

Students following the bioinformatics track must also complete Computer Science 32 or Program in Computing 10B and 10C.

Students following the biological data sciences track must also complete Computer Science 32.

Additional lower-division courses may be requisite to desired track courses.

### The Major

The major consists of a methodology core of seven courses (27 units) and a track of five upper-division courses (20 units minimum).

#### Methodology Core

*Required:* (1) Computational and Systems Biology M150, M184, 185, (2) one probability course from: Electrical and Computer Engineering 131A, Mathematics 170E, or Statistics 100A, (3) one statistics course from: Biostatistics 100A or Statistics 100B, and (4) two capstone courses from the following options: Computational and Systems Biology M187 and 195, or M187 and 199, or 198A and 198B.

#### Tracks

*Required:* A minimum of five courses (20 units minimum) from the tracks listed below. No 199 course may be applied toward any track.

*Bioinformatics (at least 20 units):* One course selected from Computer Science CM121, CM122, or CM124; two courses selected from Computer Science CM121, CM122, CM124, Ecology and Evolutionary Biology C135, Molecular, Cell, and Developmental Biology CM156, 187AL, Physiological Science 125, or Statistics M254; two life science courses selected from the list below.

*Note:* Computer Science 32 or Program in Computing 10B and 10C, and Computational and Systems Biology M32 (same as Life Sciences M32 or Mathematics M32T) or Mathematics 32A are completed in the pre-major.

*Biological Data Sciences (at least 20 units):* Three courses selected from Computer Science CM124 (or M226), M146 (or Mathematics 156 or Statistics C161), 161, 168, 180 (or Mathematics 182), Electrical and Computer Engineering C143A, C147, Mathematics 155, 164, Statistics 101A, or 101C; two life science courses selected from the list below. A maximum of two courses may be from mathematics.

*Note:* Computer Science 32 is completed in the pre-major.

*Dynamical Modeling (at least 20 units):* Three courses selected from Computational and Systems Biology M186 (or Computer Science M182), Electrical and Computer Engineering 102, 113, Ecology and Evolutionary Biology C119A, C119B, Mathematics 134 (or 135), 136, 142, 146, 168, or 171; two life science courses selected from the list below. A maximum of two courses may be from mathematics.

*Life Science Courses (for all three tracks):* any two courses selected from the subareas below. Courses may be chosen from different subareas.

*Biochemistry:* Chemistry 153A, 153B.

*Ecology:* Ecology and Evolutionary Biology 100, 116, 120, 129, 161, C172, C174.

*Epidemiology:* Epidemiology 100, Microbiology, Immunology, and Molecular Genetics 101, 102, 168, C185A.

*Genetics and Molecular Biology:* Life Sciences 107, Molecular, Cell, and Developmental Biology 138, M140, 144, 165A (or 100).

*Neurosystems:* Neuroscience M101A (or Psychology 115), M101B, 102, 205, 260, Physiological Sciences C144, Physics C186, Psychology 119M.

*Physiology:* Bioengineering C102, Biomathematics 206, Ecology and Evolutionary Biology 170 (or Physiological Sciences 166), Physiological Sciences 149.

### Honors Program

Students with a grade-point average of 3.5 or better in required major courses and a 3.0 cumulative GPA may apply for admission to the honors program. Honors or highest honors may be granted at the discretion of the faculty sponsor and the faculty committee to students demonstrating exceptional ability on the senior research thesis.

### Policies

#### Preparation for the Major

All courses taken for the Preparation for the Major must be completed with a grade of C or better. Students are allowed to repeat up to two Preparation for the Major courses in which they receive a C– or worse. Students who receive a third grade of C– or worse in Preparation for the Major courses are dismissed from the program.

#### The Major

Each course in the major must be passed with a grade of C or better.

## Undergraduate Minors

### Mathematical Biology Minor

The Mathematical Biology minor introduces undergraduate students to an active interdisciplinary research field at UCLA. The minor core examines biological systems in a holistic and quantitative manner by emphasizing systems and integrative principles in biology. Students who complete the minor have sufficient training to apply the knowledge they learn in graduate school or employment of their choice. Students complete a core curriculum and an elective course. The minor consists of lower-division courses basic to the minor, five core courses, and one elective course that provide the needed background in mathematical biology, molecular and cell biology, statistics and probability, and mathematical modeling and simulation methods for biological systems.



## Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average or better) and have completed Computer Science 31 or Program in Computing 10A with a grade of C or better. Requests to declare the minor must be sent by e-mail to the [program](#). The e-mail should include full name, UID number, request to declare the minor, and a statement indicating whether the student consents to being added to the departmental Common Collaboration and Learning Environment (CCLE) web page.

## The Minor

*Required Lower-Division Courses (8 units):* Mathematics 33A, 33B.

*Required Upper-Division Courses (24 units):* Computational and Systems Biology M184, M186, Mathematics 170A or Electrical and Computer Engineering 131A or Statistics 100A, Molecular, Cell, and Developmental Biology M140 or 144, Statistics 100B, and one elective course selected from Electrical and Computer Engineering 102, Mathematics 134, 136, 171, Molecular, Cell, and Developmental Biology 172, or Physiological Science 125.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Structural Biology Minor

The Structural Biology minor introduces undergraduate students to an active interdisciplinary research field at UCLA. It examines biological systems in a holistic and quantitative manner by emphasizing systems and integrative principles in biology. It consists of lower-division courses basic to the minor, four core courses, and one elective course that provide the needed background in structural biology, biologic microscopy, and biochemistry. Students who complete the minor have sufficient training to apply the knowledge they learn in graduate school or employment of their choice.

## Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average or better) and have completed Computer Science 31 or Program in Computing 10A with a grade of C or better. Requests to declare the minor must be sent by e-mail to the [program](#). The e-mail should include full name, UID number, request to declare the minor, and a statement indicating whether the student consents to being added to the departmental Common Collaboration and Learning Environment (CCLE) web page.

## The Minor

*Required Lower-Division Course (4 units):* Mathematics 33A.

*Required Upper-Division Courses (22 units):* Chemistry and Biochemistry 153A, M230B, Computational and Systems Biology M184, Microbiology, Immunology, and Molecular Genetics 105, and two elective courses selected from Biostatistics 100A, Chemistry and Biochemistry M117, 156, Electrical and Computer Engineering 102, 113, Statistics 100A, 100B.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Systems Biology Minor

The Systems Biology minor introduces undergraduate students to an active, interdisciplinary, quantitative biosciences research and teaching field at UCLA. It offers a coherent course plan encompassing basic foundations of the field. Beside broadening student knowledge in systems biology, the minor provides students with enhanced perspective about computational and systems biology methods and applications and better prepares students to make more informed choices about their future directions and careers. The minor consists of lower-division courses basic to the minor, a survey seminar course, four core courses, and one elective course that provide the needed background in molecular and cell biology, computational and systems engineering, and mathematical modeling and simulation methods for biological systems.

## Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average or better) and have completed Computer Science 31 or Program in Computing 10A with a grade of C or better. Requests to declare the minor must be sent by e-mail to the [program](#). The e-mail should include full name, UID number, request to declare the minor, and a statement indicating whether the student consents to being added to the departmental Common Collaboration and Learning Environment (CCLE) web page.

## The Minor

*Required Lower-Division Courses (8 units):* Mathematics 33A, 33B.

*Required Upper-Division Courses (24 units):* Computational and Systems Biology M184, M186, Electrical and Computer Engineering 102, 141 (or Mechanical and Aerospace Engineering 171A), Molecular, Cell, and Developmental Biology M140 or 144, and one elective course selected from Mathematics 134, 151A, 151B, 170A, 170B, 171, Molecular, Cell, and

Developmental Biology 172, or Physiological Science 125.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Computational and Systems Biology

### Lower-Division Courses

**10. Preparation for Research in Computational Biology. (3)** Lecture, two and one half hours. Provides students with basic understanding of several computational tools used in molecular biology research. Focus on practical application of these tools rather than deep theoretical understanding. Creates more inclusive and accessible experience for learners. Students are introduced to computational tools for carrying out research in computational biology, including basic statistics, Python, R, and UNIX. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M32. Essential Calculus for Mathematical Biologists. (4)** (Same as Mathematics M32T and Life Sciences M32.) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 30A, 30B. Not open to students with credit for Mathematics 31A, 31B, 32A, or 32B. Designed for life sciences students. Methods and results of single and multivariable calculus essential for quantitative training in biology. Limits, differentiation (single and several variables), optimization, integration and methods of integration, Taylor polynomials and applications to approximation, Taylor and other power series, vector valued functions, gradients, and Lagrange multipliers. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M130. Fundamentals of Digital Imaging and Image Processing. (5)** (Same as Molecular, Cell, and Developmental Biology M130.) Lecture, three hours; laboratory, two hours. Requisites: Life Sciences 7A, 7B, 7C,

and Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, and 3C, or Mathematics 31A, 31B, and 32A or 33A. Digital imaging has become integral tool to our everyday lives and to nearly every field of life sciences. Quantitative approach to learning about basic properties of digital signals and surveying fundamental methods for processing and analyzing images. Letter grading.

**M150. Biological Modeling: Mathematical and Computational Approaches.** (5) (Same as Ecology and Evolutionary Biology M159.) Lecture, four hours; laboratory, three hours. Requisites: Life Sciences 7A, 7B, 7C, Mathematics 33A and 33B, with grades of C or better. Recommended Requisites: Physics 1A, 1B, and 1C, or 5A, 5B, and 5C, with grades of C or better. Students learn how to translate their biological knowledge and intuition into mathematical equations and computer simulations, and how to interpret and glean biological insights from quantitative results and predictions. Review and integration of core mathematical and computational approaches in novel ways. Students gain experience translating and intuition about systems through many examples across range of biological levels, such as predator-prey, disease transmission, cancer initiation, cell migration, neural systems, vascular networks, sleep, drug interactions, gene expression, and more. Students learn how to manipulate data, basics of coding, and how to instantiate their mathematical models and biological intuition through numerical solutions and simulations. Letter grading.

**M175. Stochastic Processes in Biochemical Systems.** (4) (Same as Chemistry M186.) Lecture, three hours. Requisites: Life Sciences 1, 2, 3, and 4, or 7A, 7B, and 7C, Mathematics 33B, Electrical and Computer Engineering 131A or Mathematics 170A or Statistics 100A. Covers random and stochastic processes in play in biochemical systems, including ion channels, cytoskeleton, cell migration and mitosis, gene expression networks, and signal transduction. Covers mathematical tools such as continuous and discrete Markov processes, first passage, time escape problems, statistical mechanics, and information theory. Letter grading.

**M178. Quantitative Regulatory Biology and Signal Transduction.** (4) (Same as Microbiology M178 and Physiological Science M178.) Lecture, three hours; laboratory, one hour. Requisites: Life Sciences 7A, 7B, 7C, 30A, 30B. Introduction to key biological regulatory circuit motifs and systems biology concepts that are critical to understanding how cellular responses are controlled. Letter grading.

**M184. Introduction to Computational and Systems Biology.** (2) (Same as Bioengineering M184 and Computer Science M184.) Lecture, two hours; outside study, four hours. Enforced requisites: one course from Civil Engineering M20, Computer Science 31, Mechanical and Aerospace Engineering M20, or Program in Computing 10A; and Life Sciences 30B or Mathematics 3B or 31B. Survey course designed to introduce students to computational and systems modeling and computation in biology and medicine, providing motivation, flavor, culture, and cutting-edge contributions in computational biosciences and aiming for more informed basis for focused studies by students with computational and systems biology interests. Presentations by individual UCLA researchers discussing their active computational and systems biology research. P/NP grading.

**185. Research Opportunities in Computational and Systems Biology.** (4) Lecture, two hours; discussion, two hours. Requisites: course M184, Life Sciences 7C, Mathematics 33A, 33B. Introduction to interdisciplinary laboratory research methods and research opportunities in computational and systems biology to prepare and initiate students for active engagement in research. Presentation of potential projects by faculty members and student visits to individual laboratories and participation in ongoing projects. P/NP or letter grading.

**M186. Computational Systems Biology: Modeling and Simulation of Biological Systems.** (5) (Same as Bioengineering CM186, Computer Science CM186, and Ecology and Evolutionary Biology M178.) Lecture, four hours; laboratory, two hours; discussion, one

hour. Requisites: Life Sciences 30A, 30B, Mathematics 32A or M32T, 33A, and 33B; or Mathematics 31A, 31B, 32A or M32T, 33A, and 33B. Dynamic biosystem modeling and computer simulation methods for studying biological/biomedical processes and systems at multiple levels of organization. Intermediate linear and nonlinear control system, multicompartmental, epidemiological, pharmacokinetic, and other biomodeling methods applied to life sciences problems at molecular, cellular, organ, and population levels. Both theory- and data-driven modeling, with focus on translating biomodeling goals and data into dynamical mathematical models, and implementing them for simulation, quantification, and analysis. Numerical simulation, optimization, and parameter identifiability and search algorithms, with model discrimination and analysis and software exercises in PC laboratory assignments. Letter grading.

**M187. Research Communication in Computational and Systems Biology.** (4) (Same as Bioengineering CM187 and Computer Science CM187.) Lecture, four hours; outside study, eight hours. Requisites: course M150 or M186 or Computer Science M182; and research experience (course 199, Bioengineering, Computer Science 199, or equivalent). Closely directed, interactive, and real research experience in active quantitative systems biology research laboratory. Direction on how to focus on topics of current interest in scientific community, appropriate to student interests and capabilities. Critiques of oral presentations and written progress reports explain how to proceed with search for research results. Major emphasis on effective research reporting, both oral and written. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Community or Corporate Internships in Computational and Systems Biology.** (4) Tutorial, eight hours. Limited to juniors/seniors. Supervised internship under guidance of faculty mentor. Further supervision to be provided by organization for which students are doing internship. Students may be required to meet on regular basis with instructor and provide periodic reports of their experience. Culminating report/project required. May be repeated for credit. Maximum of 4 units of 195 can be applied toward major. Individual contract required. P/NP grading.

**198A-198B. Honors Research in Computational and Systems Biology.** (4-4) Tutorial, 12 hours. Maximum of 8 units of courses 198A and 198B may be applied toward major. Individual contract required. **198A.** Requisite: course M150. Limited to Computational and Systems Biology students. Supervised individual research involving extensive reading and development of honors thesis or comprehensive project under guidance of faculty mentor. In Progress grading (credit to be given on completion of course 198B). **198B.** Requisite: course 198A. Continued reading and research culminating in honors thesis under direct supervision of faculty member. Letter grading.

**199. Directed Research in Computational and Systems Biology.** (4) Tutorial, 12 hours. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating report/thesis required. May be repeated for credit. Four units may be applied toward major requirements. Individual contract required. Letter grading.

## COMPUTATIONAL MEDICINE

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Eleazar Eskin, PhD, *Chair*

Bogdan Pasaniuc, PhD, *Vice Chair*

Eric M. Sobel, PhD, *Vice Chair,  
Education*

## Faculty Roster

### Professors

Douglas S. Bell, MD, PhD, *in Residence*

Thomas Chou, PhD

Jason Ernst, PhD

Eleazar Eskin, PhD

Eran Halperan, PhD

Kenneth L. Lange, PhD (*Maxine and Eugene  
Rosenfeld Endowed Professor of  
Computational Genetics*)

Gang Li, PhD

James O. Lloyd-Smith, PhD

Bogdan Pasaniuc, PhD

Zhilin Qu, PhD, *in Residence*

Marcus L. Roper, PhD

Van M. Savage, PhD

Eric M. Sobel, PhD, *in Residence*

Marc A. Suchard, MD, PhD

Wei Wang, PhD (*Leonard Kleinrock Term  
Professor of Computer Science*)

Hua Zhou, PhD

### Professors Emeriti

Abdelmonem A. Afifi, PhD

Robert I. Jennrich, PhD

Elliot M. Landaw, MD, PhD

### Associate Professors

Valerie Arboleda, MD, PhD, *in Residence*

Jingyi Jessica Li, PhD

Sriram Sankararaman, PhD

Noah A. Zaitlen, PhD

### Assistant Professors

Brunilda Balliu, PhD

Jeffrey N. Chiang, PhD

Harold J. Pimentel, PhD

Daniel J. Tward, PhD

Bolei Zhou, PhD

### Adjunct Professors

David Elashoff, PhD

Jeffrey A. Gornbein, DrPH

### Adjunct Associate Professors

Maria-Rita R. D'Orsogna, PhD

Mary E. Sehl, MD, PhD

### Adjunct Assistant Professor

Elior Rahmani, PhD

## Overview

As biology advances rapidly in quantitative research methods, both the need and potential for closely associated theoretical research increases. On numerous medical science frontiers—such as genetics, molecular biology, oncology, pharmacology, neuroscience, and physiology—the Department of Computational Medicine contributes both in basic research and the development of specialized software to support investigation and health care. UCLA has one of the few departments in this rapidly evolving field.

The department builds from abstract modeling toward research vital to the advancement of current biomedical frontiers. The doctoral program reflects this in requirements for advanced training in a biomedical research specialty and in the mathematical and computing skills required to contend realistically with the complex phenomena encountered in biology and medicine. The art of quantitative research is developed individually from the first year.

The department welcomes both undergraduate and graduate students in other majors to its courses in mathematical modeling, research computing, and biomedical statistics. Pre-medical majors with mathematical and computational interests can receive early guidance toward an MD/PhD joint degree. The department also offers quantitative research training in the medical curriculum and postgraduate medical programs.

## Graduate Majors

### Biomathematics MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Clinical Research MS

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Data Science in Biomedicine MS

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more de-

tailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Biomathematics

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**170A. Introductory Biomathematics for Medical Investigators. (4)** Lecture, three hours; discussion, one hour. Intensive elementary statistics course emphasizing design and applications to observational studies and experiments/clinical trials. Statistical topics include study design, descriptive statistics, elementary probability and distributions, confidence intervals and hypothesis testing, sample size and power, linear regression and correlation, analysis of variance, nonparametric statistics. Applications to biomedical literature and design of clinical trials. Letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190HA-190HB. Honors Research in Biomathematics. (4-4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual research in some aspect of biomathematics designed to acquaint students in depth with mathematical models and computer applications in biology. Must be taken for at least two terms and for total of at least 8 units. Thesis required. P/NP or letter grading.

**197. Individual Studies in Biomathematics. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Biomathematics. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

### Graduate Courses

**200. Research Frontiers in Biomathematics. (2)** Lecture, two hours. Series of presentations by faculty members on research frontiers in biomathematics. S/U grading.

**200B. Frontiers and Methods in Mathematical Systems. (4)** Lecture/seminar, four hours. Introduction to cutting-edge research in mathematical biology. Imparts critical thinking through critique of research. Trains students in scientific writing and presentation skills. Short writing assignments, figure preparation, and slide development. Letter grading.

**201. Deterministic Models in Biology. (4)** Lecture, three hours; laboratory, three hours. Preparation: knowledge of linear algebra and differential equations. Examination of conditions under which deterministic

approaches can be employed and conditions where they may be expected to fail. Topics include compartmental analysis, enzyme kinetics, physiological control systems, and cellular/animal population models. S/U or letter grading.

**202. Biological Systems: Structure, Function, Evolution. (4)** Lecture, four hours. Preparation: knowledge of calculus, differential equations, and partial differential equations. Introduction to concepts, equations, and approximations that describe structure and function of biological systems, evolutionary principles, and network design and dynamics. Topics include cancer initiation and progression, gene expression, epistasis, response to fluctuating environments, network structure, and functional traits. S/U or letter grading.

**M203. Stochastic Models in Biology. (4)** (Same as Human Genetics M203.) Lecture, four hours. Requirement: Mathematics 170A or equivalent experience in probability. Mathematical description of biological relationships, with particular attention to areas where conditions for deterministic models are inadequate. Examples of stochastic models from genetics, physiology, ecology, and variety of other biological and medical disciplines. S/U or letter grading.

**204. Biomedical Data Analysis. (4)** Lecture, four hours. Requirement: at least one course in probability or statistics that included basic probability, elementary distributions, hypothesis testing, and confidence intervals; knowledge of elementary calculus. Familiarity with elementary matrix algebra and previous programming experience are strongly preferred. Modern scientific research and quality and quantity of data have been greatly affected by rapid expansion of statistical computing software. Problem-oriented study of latest methods in applied statistical data analysis and its use arising in laboratory and clinical research. S/U or letter grading.

**205. Top Computational Algorithms. (4)** Lecture, four hours. Recommended preparation: undergraduate calculus, linear algebra, probability. Overview of most important and beautiful algorithms in numerical analysis, statistics, bioinformatics, and computer science. Emphasis on mathematical derivation, practical complexity analysis, significant applications, and coding in Julia programming language. Big data applications particularly stressed. Letter grading.

**206. Introduction to Mathematical Oncology. (4)** Lecture, four hours; computer laboratory, two hours. Preparation: ordinary partial differential equations, one computer programming course. Deterministic and stochastic modeling of cell metabolism, colony growth, and responses to radio-, chemo-, and immuno-therapeutic agents applied to carcinogenesis, therapy, emergence of resistance to therapy. Simulation, optimization methods introduced. Current literature review. S/U or letter grading.

**M207A. Theoretical Genetic Modeling. (4)** (Same as Biostatistics M272 and Human Genetics M207A.) Lecture, three hours; discussion, one hour. Requirements: Mathematics 115A, 131A, Statistics 100B. Mathematical models in statistical genetics. Topics include population genetics, genetic epidemiology, gene mapping, design of genetics experiments, DNA sequence analysis, and molecular phylogeny. S/U or letter grading.

**M207B. Applied Genetic Modeling. (4)** (Same as Biostatistics M237 and Human Genetics M207B.) Lecture, three hours; laboratory, one hour. Requirements: Biostatistics 200B, 202B (may be taken concurrently) or equivalent coursework or consent of instructor. Covers basic genetic concepts (prior knowledge of human genetics not required). Topics include statistical methodology underlying genetic analysis of both quantitative and qualitative complex traits. Laboratory for hands-on computer analysis of genetic data; laboratory reports required. Course complements M207A; students may take either and are encouraged to take both. S/U or letter grading.

**208. Geometric Methods in Medical Imaging. (4)** Lecture, four hours. Recommended preparation: undergraduate calculus, linear algebra, probability. Overview of mathematical and computational techniques to study geometric objects underlying medical images. Includes curves, surfaces, sizes, shapes, and diffusion tensors that describe cells, tissues, and organs. S/U or letter grading.



**209. Mechanisms and Modeling in Bioanalytical Assays. (4)** Lecture, three hours. Preparation: knowledge of basic physical chemistry and ordinary differential equations. Recommended prerequisite: course 201. Review of basic physical mechanisms and mathematical analyses used in common bioanalytical assays. Topics include chromatography, electrophoresis, blotting, DNA sequencing, PCR, SELEX, ChIP-sequencing, FACS, FRAP, and FISH. S/U or letter grading.

**210. Optimization Methods in Biology. (4)** Lecture, four hours. Preparation: undergraduate mathematical analysis and linear algebra; familiarity with programming language such as Fortran or C. Modern computational biology relies heavily on finite-dimensional optimization. Survey of theory and numerical methods for discrete and continuous optimization, with applications from genetics, medical imaging, pharmacokinetics, and statistics. S/U or letter grading.

**M211. Mathematical and Statistical Phylogenetics. (4)** (Same as Biostatistics M239 and Human Genetics M211.) Lecture, three hours; laboratory, one hour. Preparation: undergraduate course in statistics and probability. Theoretical models in molecular evolution focusing on phylogenetic techniques. Topics include evolutionary tree reconstruction methods, studies of viral evolution, phylogeography and coalescent approaches. Examples provided from evolutionary biology and evolutionary medicine, with unique focus on implications for human disease processes. Laboratory for hands-on computer analysis of sequence data. S/U or letter grading.

**M212. Evolutionary Ecology. (4)** (Same as Ecology and Evolutionary Biology M232.) Lecture, two and one half hours. Requisite: Ecology and Evolutionary Biology M200A or 200B, or equivalent. Concepts and topics include fundamental concepts of evolutionary ecology, including life history theory, quantitative genetics and phenotypic evolution, and advances made in field in last decade. May be repeated for credit. Letter grading.

**213. Modeling Vascular Networks. (4)** Lecture, four hours. Recommended preparation: calculus, differential equations, complex analysis, elementary knowledge of partial differential equations. Introduction to equations that describe fluid flow dynamics and branching, and hierarchal networks to provide survey of models for structure and flow of vascular systems. Vascular systems are nearly ubiquitous in nature, occurring across animals, plants, and other organisms. Coverage of applications to tumor growth and angiogenesis, sleep, allometric scaling, and other phenomena. S/U or letter grading.

**M226. Machine Learning in Bioinformatics. (4)** (Same as Bioinformatics M226, Computer Science M226, and Human Genetics M226.) Lecture, four hours; outside study, eight hours. Enforced prerequisite: Computer Science 32 or Program in Computing 10C with grade of C- or better. Recommended: one course from Biostatistics 100A, 110A, Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, or Statistics 100A. Familiarity with probability, statistics, linear algebra, and algorithms expected. Designed for engineering students as well as students from biological sciences and medical school. Biology has become data-intensive science. Bottleneck in being able to make sense of biological processes has shifted from data generation to statistical models and inference algorithms that can analyze these datasets. Statistical machine learning provides important toolkit in this endeavor. Biological datasets offer new challenges to field of machine learning. Examination of statistical and computational aspects of machine learning techniques and their application to key biological questions. Letter grading.

**M232. Statistical Analysis of Incomplete Data. (4)** (Same as Biostatistics M232.) Lecture, three hours; discussion, one hour. Requisites: Biostatistics 200C, 202B or equivalent. Sources of incomplete data, recognizing familiar methods as solutions to missing-data problems, missing-data mechanisms, weighting and imputation strategies, model-based and design-based inference, likelihood-based and Bayesian methods, statistical computing strategies, multivariate models for diverse data types, nonignorable models, review of

available statistical software. Emphasis on incorporating incomplete-data perspective into broader statistical-science framework. S/U or letter grading.

**M234. Applied Bayesian Inference. (4)** (Same as Biostatistics M234.) Lecture, three hours; laboratory, one hour. Requisite: Biostatistics 200B or another substantial regression course. Bayesian approach to statistical inference, with emphasis on biomedical applications and concepts rather than mathematical theory. Topics include large sample Bayes inference from likelihoods, noninformative and conjugate priors, empirical Bayes, Bayesian approaches to linear and nonlinear regression, model selection, Bayesian hypothesis testing, and numerical methods. S/U or letter grading.

**M243. Condensed Matter Physics of Cells. (4)** (Same as Physics M243L.) Seminar, four hours. Designed for graduate students. Basic paradigms of condensed matter physics and applications to biophysical modeling. S/U or letter grading.

**M257. Computational Methods for Biostatistical Research. (4)** (Same as Biomathematics M257.) Lecture, three hours; discussion, one hour. Requisites: Biostatistics 250A or Statistics 100C, Mathematics 115A. Preparation for quantitative research in statistics and data sciences. Numerical analysis and hands-on computing techniques for handling big data. Numerical analysis topics include computer arithmetic, solving linear equations, Cholesky factorization, QR factorization, regression computations, eigenvalue problems, iterative solvers, numerical optimization, and design and analysis of statistical simulation experiments. Computing techniques include basics of R programming, reproducible research using R and RStudio, collaborative research, parallel computing, and cloud computing. No prior knowledge of R assumed. S/U or letter grading.

**259. Controversies in Clinical Trials. (2)** Lecture, one hour; discussion, one hour. Preparation: completion of professional health sciences or MD degree. Required of all MS in Clinical Research students. Discussion and analysis of eight published and well-known trials with students, one invited clinical faculty member, and course director. Development of critical ability to evaluate trial design and pitfalls. S/U or letter grading.

**M260A-M260B. Methodology in Clinical Research I, II. (4-4)** (Same as Medicine M260A-M260B.) Lecture, four hours. Recommended preparation: MD, PhD, or dental degree. Requisites: courses 170A, 265A. Course M260A is requisite to M260B. Presentation of principles and practices of major disciplines underlying clinical research methodology, such as biostatistics, epidemiology, pharmacokinetics. S/U or letter grading.

**M260C. Methodology in Clinical Research III. (4)** (Same as Medicine M260C.) Discussion, four hours. Recommended preparation: MD, PhD, or dental degree. Presentation of principles and practices of major disciplines underlying clinical research methodology, such as biostatistics, epidemiology, pharmacokinetics. S/U or letter grading.

**M261. Responsible Conduct of Research Involving Humans. (2)** (Same as Medicine M261.) Lecture, two hours; discussion, two hours. Preparation: completion of one basic course in protection of human research subjects through Collaborative Institutional Training Initiative. Discussion of current issues in responsible conduct of clinical research, including reporting of research, basis for authorship, issues in genetic research, principles and practice of research on humans, conflicts of interest, Institutional Review Board (IRB), and related topics. S/U or letter grading.

**M262. Communication of Science. (2)** (Same as Psychiatry M230.) Lecture, two hours; discussion, one hour. Presentation of various types of scientific writings and their good practice. Details of writing specific articles: methods, results, discussion. Writing of review article. Grant submissions: aims, background, results, design. Role of appendices. Communication with lay public. S/U or letter grading.

**M263. Clinical Pharmacology. (2)** (Same as Medicine M263 and Psychiatry M263.) Lecture, two hours. Preparation: completion of professional health sciences degree (MD, DDS, DNSc, or PhD). Overview of

principles of clinical pharmacology, especially as they relate to clinical and translational medicine and to advances in contemporary medicine such as targeting, gene therapy, and genomics. Letter grading.

**264. Applied Data Collection and Analysis. (4)** Lecture, four hours. Presentation of research project development, including protocol development, data collection, quality control, clinical/electronic health record (EHR) data, structuring data for analysis, and data archival. Lectures, in-class practicums using actual studies and datasets, and student presentations. Letter grading.

**265A. Data Analysis Strategies I. (4)** Lecture, two hours; laboratory, two hours. Preparation: MD or PhD degree. Requisite: course 170A. Designed to provide students with hands-on experience developing and testing hypotheses using various types of databases. Topics include developing testable hypothesis, data management, and analysis strategies and written presentation of findings. Experience with full process of hypothesis generation, operationalization of variables, selection of analysis techniques, and presentation of findings so students are better prepared to complete data analysis, interpretation of results, and written presentation of their findings (e.g., for master's thesis and subsequent articles). Students encouraged to provide their own data. Databases provided for use in completing exercises for those without available data. Letter grading.

**266A. Applied Regression Analysis in Medical Sciences. (4)** Lecture, three hours; laboratory, one hour. Requisite: course 170A. Proficiency in applied regression analysis, with focus on interpretation of results and performing computation. Primary topics include simple linear regression, multiple regression, regression model selection, analysis of variance, logistic regression, and survival analysis. Letter grading.

**266B. Advanced Biostatistics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 266A. Continuation of course 266A. Some traditional multivariate methods, such as principle components, factor analysis, cluster analysis, and more contemporary methods, including recursive partitioning and missing data. Multilevel and longitudinal analysis. Letter grading.

**M270. Optimal Parameter Estimation and Experiment Design for Biomedical Systems. (4)** (Same as Bioengineering M296B, Computer Science M296B, and Medicine M270D.) Lecture, four hours; outside study, eight hours. Requisite: course 220 or Bioengineering CM286 or M296A. Estimation methodology and model parameter estimation algorithms for fitting dynamic system models to biomedical data. Model discrimination methods. Theory and algorithms for designing optimal experiments for developing and quantifying models, with special focus on optimal sampling schedule design for kinetic models. Exploration of PC software for model building and optimal experiment design via applications in physiology and pharmacology. Letter grading.

**M271. Statistical Methods in Computational Biology. (4)** (Same as Bioinformatics M223 and Statistics M254.) Lecture, three hours; discussion, one hour. Preparation: elementary probability concepts. Requisite: Bioinformatics M221 or Statistics 100A or 200A. Introduction to statistical methods developed and widely applied in several branches of computational biology, such as gene expression, sequence alignment, motif discovery, comparative genomics, and biological networks, with emphasis on understanding of basic statistical concepts and use of statistical inference to solve biological problems. Letter grading.

**M280. Statistical Computing. (4)** (Same as Biostatistics M280 and Statistics M230.) Lecture, three hours. Requisites: Mathematics 115A, Statistics 100C. Introduction to theory and design of statistical programs: computing methods for linear and nonlinear regression, dealing with constraints, robust estimation, and general maximum likelihood methods. Letter grading.

**M281. Survival Analysis. (4)** (Same as Biostatistics M215.) Lecture, three hours; discussion, one hour. Requisite: Biostatistics 202B or Statistics 100C. Statistical methods for analysis of survival data. S/U or letter grading.

**M282. Longitudinal Data. (4)** (Same as Biostatistics M236.) Lecture, three hours; laboratory, one hour. Requisite: Biostatistics 200B or another substantial regression course. Analysis of continuous responses for which multivariate normal model may be assumed. Students learn how to think about longitudinal data, plot data, and how to specify mean and variance of longitudinal response. Advanced topics include introductions to clustered, multivariate, and discrete longitudinal data. S/U or letter grading.

**M284. Methodology of Clinical Trials. (4)** (Same as Biostatistics M238.) Lecture, three hours; discussion, one hour. Requisite: Biostatistics 200B. Introductory material on design and analysis of clinical trials, including adaptive methods for early and late randomized trials. S/U or letter grading.

**285. Introduction to High-Throughput Data Analysis. (4)** Seminar, three hours. Requisites: courses M260A, M260B. Introduction to high-throughput data analysis, including DNA microarray technologies and next-generation sequencing technology. Presentation of statistical methods and software for handling complex data produced by experiments using these technologies. Some hands-on training on data analysis provided. S/U or letter grading.

**299. Special Topics in Clinical Research. (2 to 6)** Seminar, three hours. Requisites: courses M260A, M260B. Advanced study and analysis of current topics in clinical research. Discussion of current research and literature in research specialty of faculty member teaching course. Content varies from term to term and may include lectures from visiting scientists. May be repeated for credit with consent of instructor. S/U or letter grading.

**596. Directed Individual Study or Research in Biostatistics. (2 to 12)** Tutorial, to be arranged. Individual study on topics not yet covered by offerings of department. May be repeated for credit with topic change. S/U or letter grading.

**597. Preparation for MS or PhD Comprehensive Examination or PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. Individual study. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 12)** Tutorial, to be arranged. S/U grading.

## Data Science in Biomedicine

### Graduate Courses

**200. Foundations of Data Science. (4)** Lecture, four hours; discussion, two hours. Preparation: familiarity with programming and algorithms, probability, statistics, linear algebra. Study offers background in mathematical and engineering foundations that are building blocks of data science. Topics include linear algebra, probability, and statistics. Overview of science software engineering and reproducibility fundamentals including working on a compute cluster, pipeline development, virtual notebooks, version control. Letter grading.

**205. Machine Learning Applications in Biomedicine. (4)** Lecture, four hours; discussion, two hours. Requisite: course 200 or equivalent. Introduction to machine learning analysis of biomedical data, with focus on formulating interdisciplinary problems as computational problems and then solving those problems using machine learning techniques and computational interdisciplinary research in genetics. Fundamentals of machine learning and applications to genetics and health records. Letter grading.

**206. Advanced Machine Learning Applications in Biomedicine. (4)** Lecture, four hours; discussion, two hours. Requisite: course 200 or equivalent. Statistical models for analysis of biomedical data that captures the structure of the data and accounts for the constraints. Topics include Bayesian models, probabilistic graphical models, deep learning, time series, dynamical systems, stochastic processes, scalable inference (gradient descent, stochastic gradient descent, expectation-maximization, Markov chain Monte Carlo, variational inference), privacy-preserving inference

(differential privacy, inference over encrypted data), interpretable machine learning, and fairness and bias. Letter grading.

**207. Data Science for Medical Imaging. (4)** Lecture, four hours; discussion, two hours. Requisite: course 200 or equivalent. Overview of medical image modalities and 3D visualization, classical image processing (histogram analysis and filtering), modern deep learning techniques (convolutional networks), image alignment, and statistical analysis of populations. Letter grading.

**208. Recent Research in Machine Learning in Medicine. (4)** Lecture, four hours; discussion, two hours. Requisite: course 200 or equivalent. Overview of recent research in machine learning applied to medicine. Covers recent papers utilizing data science approaches to analyze large amounts of medical data. Topics include analysis of medical imaging data, electronic health records, and waveforms. Students receive instruction on how to read recent research papers, and present these papers in class. Letter grading.

**209. Recent Research in Data Science in Genomic Medicine. (4)** Lecture, four hours; discussion, two hours. Requisite: course 200 or equivalent. Overview of recent research in data science applied to genomic medicine. Covers recent papers that use data science approaches to analyze large amounts of genomic data along with medical data with the goal of improving patient care. Topics include analysis of genomic data to diagnose rare diseases, estimation and utilization of polygenic risk scores in electronic medical records, and integrating novel types of genomic data into clinical care. Students receive instruction on how to read recent research papers, and present these papers in class. Letter grading.

## COMPUTER SCIENCE

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Computer Science  
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Miryung Kim, PhD, *Vice Chair, Graduate Studies*

Glenn D. Reinman, PhD, *Vice Chair, Undergraduate Studies*

Amit Sahai, PhD, *Vice Chair, Academic Advancement*

## Faculty Roster

### Professors

Junghoo (John) Cho, PhD  
Jason (Jingsheng) Cong, PhD (*Volgenau Professor of Engineering Excellence*)

Adnan Y. Darwiche, PhD  
Joseph J. DiStefano III, PhD  
Eleazar Eskin, PhD  
Eran Halperin, PhD  
Miryung Kim, PhD  
Richard E. Korf, PhD  
Songwu Lu, PhD

Todd D. Millstein, PhD  
Stanley J. Osher, PhD  
Rafail Ostrovsky, PhD (*Norman E. Friedmann Professor of Knowledge Sciences*)  
Jens Palsberg, PhD

Miodrag Potkonjak, PhD  
Glenn D. Reinman, PhD  
Amit Sahai, PhD (*Symantec Term Professor of Computer Science*)

Majid Sarrafzadeh, PhD (*Levi James Knight, Jr. Term Professor of Innovation*)

Stefano Soatto, PhD  
Mani B. Srivastava, PhD  
Demetri Terzopoulos, PhD  
George Varghese, PhD (*Jonathan B. Postel Professor of Networking*)

Wei Wang, PhD (*Leonard Kleinrock Term Professor of Computer Science*)

Harry G. Xu, PhD  
Lixia Zhang, PhD (*Jonathan B. Postel Professor of Computer Systems*)

Song-Chun Zhu, PhD

### Professors Emeriti

Algirdas A. Avizienis, PhD  
Rajive L. Bagrodia, PhD  
Alfonso F. Cardenas, PhD  
Jack W. Carlyle, PhD  
Wesley W. Chu, PhD  
Michael G. Dyer, PhD  
Milos D. Ercegovic, PhD  
Eliezer M. Gafni, PhD  
Sheila A. Greibach, PhD  
Leonard Kleinrock, PhD  
Allen Klinger, PhD  
Lawrence P. McNamee, PhD  
Richard R. Muntz, PhD  
Judea Pearl, PhD  
Carlo A. Zaniolo, PhD (*Norman E. Friedmann Professor Emeritus of Knowledge Sciences*)

### Associate Professors

Kai-Wei Chang, PhD  
Jason Ernst, PhD  
Alyson K. Fletcher, PhD  
Quanquan Gu, PhD  
Choi-Jui Hsieh, PhD  
Raghu Meka, PhD  
Anthony J. Nowatzki, PhD  
Sriram Sankararaman, PhD  
Alexander Sherstov, PhD  
Yizhou Sun, PhD  
Yuval Tamir, PhD  
Guy Van den Broeck, PhD

### Assistant Professors

Omid Abari, PhD  
Aditya Grover, PhD  
Achuta Kadambi, PhD  
Baharan Mirzasoleiman, PhD  
Violet (Nanyun) Peng, PhD  
Fabien Scalzo, PhD, *in Residence*  
Bolei Zhou, PhD

### Senior Lecturers SOE

Paul R. Eggert, PhD  
David A. Smallberg, MS

### Adjunct Professors

David E. Heckerman, PhD  
Van Jacobsen, MS  
Alan C. Kay, PhD

### Adjunct Associate Professors

Carey S. Nachenberg, MS  
Giovanni Pau, PhD  
Ramin Ramezani, PhD



**Adjunct Assistant Professor**

Ravi Netravali, PhD

**Overview**

Computer science is concerned with the design, modeling, analysis, and applications of computer systems. Its study at UCLA provides education at the undergraduate and graduate levels necessary to understand, design, implement, and use the software and hardware of computers and digital systems. The programs offer comprehensive and integrated studies of subjects in computer system architecture, computer networks, distributed computer systems, programming languages and software systems, information and data management, artificial intelligence, computer science theory, computational systems biology and bioinformatics, and computer vision and graphics.

The undergraduate and graduate studies and research projects in the Department of Computer Science are supported by significant computing resources. In addition to the departmental computing facility, there are over a dozen research laboratories specializing in areas such as distributed systems, multimedia computer communications, distributed sensor networks, VLSI systems, VLSI CAD, embedded and reconfigurable systems, computer graphics, bioinformatics, and artificial intelligence. Also, the Cognitive Systems Laboratory is engaged in studying computer systems that emulate or support human reasoning. The Biocybernetics Laboratory is devoted to multidisciplinary research involving the application of engineering and computer science methods to problems in biology and medicine.

**Undergraduate Majors****Computer Science and Engineering BS**

The Computer Science and Engineering curriculum at UCLA provides students with the education and training necessary to design, implement, test, and utilize the hardware and software of digital computers and digital systems. The curriculum has components spanning both the Computer Science and Electrical and Computer Engineering departments. The curriculum covers all aspects of computer systems from electronic design through logic design, MSI, LSI, and VLSI concepts; device utilization, machine language design, implementation and programming, operating system concepts, systems programming, networking fundamentals, and higher-level language skills; and their application. Students are prepared for employment in a wide spectrum of high-technology industries.

The computer science and engineering program is accredited by the Computing Accreditation Commission and the Engineering Accreditation Commission of **ABET**.

**Capstone Major**

The Computer Science and Engineering major is a designated capstone major. Computer Sci-

ence and Engineering students complete a major product design course. Graduates are expected to apply the basic mathematical and scientific concepts that underlie modern computer science and engineering; design a software or digital hardware system, component, or process to meet desired needs within realistic constraints; function productively with others as part of a team; identify, formulate, and solve computer software- and hardware-related engineering problems; and demonstrate effective communication skills.

**Learning Outcomes**

The Computer Science and Engineering major has the following learning outcomes:

- Application of basic mathematical and scientific concepts that underlie the modern field
- Design of a software or digital hardware system, component, or process to meet desired needs within realistic constraints
- Function productively with others on a team, including those with different specialties within the field
- Identification, formulation, and solution of computer software- and hardware-related engineering problems
- Effective communication

**Requirements****Preparation for the Major**

*Required:* Computer Science 1, 31, 32, 33, 35L, M51A; Electrical and Computer Engineering 3; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 1A, 1B, 1C, and 4AL or 4BL.

**The Major**

*Required:* Computer Science 111, 118, 131, M151B, M152A, 180, 181, Electrical and Computer Engineering 100, 102, 115C; one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, or Statistics 100A; one capstone design course (Computer Science 152B); a minimum of 4 units and one elective course selected from Electrical and Computer Engineering 101A through M185; a minimum of 12 units and three elective courses selected from Computer Science 111 through CM187, and up to 8 units of Computer Science 188; and 12 units of technical breadth courses selected from an approved list available in the **Office of Academic and Student Affairs**.

Students who want to deepen their knowledge of electrical engineering are encouraged to select that discipline as their technical breadth area.

For information on UC, school, and general education requirements, see the **Samueli school** section in College and Schools.

**Policies****The Major**

Credit is not allowed for both Computer Science 170A and Electrical and Computer Engineering 133A unless at least one of them is applied as part of the technical breadth area. Electrical and Computer Engineering 110,

131A, and CM182 may not satisfy elective credit. A petition may be submitted to consider four units of Computer Science 194 or 199 for an elective. Credit is not guaranteed and subject to vice chair review.

A multiple-listed (M) course offered in another department may be used instead of the same computer science course (e.g., Electrical and Computer Engineering M116C may be taken instead of Computer Science M151B). Credit is applied automatically.

**Computer Science BS**

The Computer Science curriculum is designed to accommodate students who want professional preparation in computer science but do not necessarily have a strong interest in computer systems hardware. The curriculum consists of components in computer science, a minor or technical support area, and a core of courses from the social sciences, life sciences, and humanities. Within the curriculum, students study subject matter in software engineering, principles of programming languages, data structures, computer architecture, theory of computation and formal languages, operating systems, distributed systems, computer modeling, computer networks, compiler construction, and artificial intelligence. Majors are prepared for employment in a wide range of industrial and business environments.

The computer science program is accredited by the Computing Accreditation Commission of **ABET**.

**Capstone Major**

The Computer Science major is a designated capstone major. Students complete either a software engineering or a major product design course. Graduates are expected to apply the basic mathematical and scientific concepts that underlie modern computer science and engineering; design a software or digital hardware system, component, or process to meet desired needs within realistic constraints; function productively with others as part of a team; identify, formulate, and solve computer software- and hardware-related engineering problems; and demonstrate effective communication skills.

**Learning Outcomes**

The Computer Science major has the following learning outcomes:

- Application of basic mathematical and scientific concepts that underlie the modern field
- Design of a software or digital hardware system, component, or process to meet desired needs within realistic constraints
- Function productively with others on a team, including those with different specialties within the field
- Identification, formulation, and solution of computer software- and hardware-related engineering problems
- Effective communication

## Requirements

### Preparation for the Major

Required: Computer Science 1, 31, 32, 33, 35L, M51A; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 1A, 1B, 1C, and 4AL or 4BL.

### The Major

*Required:* Computer Science 111, 118, 131, M151B, M152A, 180, 181; one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, or Statistics 100A; one capstone software engineering or design course from Computer Science 130 or 152B; a minimum of 20 units and five elective courses selected from Computer Science 111 through CM187, and up to 8 units of Computer Science 188; a minimum of 12 units and three science and technology courses (not used to satisfy other requirements) that may include 12 units of upper-division computer science courses or 12 units of courses selected from an approved list available in the [Office of Academic and Student Affairs](#); and 12 units of technical breadth courses selected from an approved list available in the Office of Academic and Student Affairs.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Policies

### The Major

Students must take at least one course from Computer Science 130 or 132. Computer Science 130 or 152B may be applied as an elective only if it is not taken as the capstone course.

Credit is not allowed for both Computer Science 170A and Electrical and Computer Engineering 133A unless at least one of them is applied as part of the science and technology requirement or as part of the technical breadth area. A petition may be submitted to consider four units of Computer Science 194 or 199 for an elective. Credit is not guaranteed and subject to vice chair review.

A multiple-listed (M) course offered in another department may be used instead of the same computer science course (e.g., Electrical and Computer Engineering M116C may be taken instead of Computer Science M151B). Credit is applied automatically.

## Computer Engineering BS

The undergraduate curriculum provides all computer engineering students with preparation in the mathematical and scientific disciplines that lead to a set of courses that span the fundamentals of the discipline in the major areas of data science and embedded networked systems. These collectively provide an understanding of many inventions of importance to our society, such as the Internet of Things, human-cyber-physical systems, mobile/wearable/implantable systems, robotic systems, and more generally smart systems at all scales in diverse spheres. The design of

hardware, software, and algorithmic elements of such systems represents an already dominant and rapidly growing part of the computer engineering profession. Students are encouraged to make use of their computer science and electrical and computer engineering electives and a two-quarter capstone design course to pursue deeper knowledge within one of these areas according to their interests, whether for graduate study or preparation for employment.

### Capstone Major

The Computer Engineering major is a designated capstone major that is jointly administered by the Computer Science, and Electrical and Computer Engineering, departments. Undergraduate students complete a design course in which they integrate their knowledge of the discipline and engage in creative design within realistic and professional constraints. Students apply their knowledge and expertise gained in previous mathematics, science, and engineering coursework. Students identify, formulate, and solve engineering problems and present their projects to the class.

### Learning Outcomes

The Computer Engineering major has the following learning outcomes:

- Application of mathematical, scientific, and engineering knowledge
- Design of a software or hardware system, component, or process to meet desired needs within realistic economic, environmental, social, ethical, health, safety, security, reliability, manufacturability, and sustainability constraints
- Function productively on a team with others
- Identification, formulation, and solution of computer engineering problems
- Effective communication

## Requirements

### Preparation for the Major

*Required:* Computer Science 1 (or Electrical and Computer Engineering 1), 31, 32, 33, 35L, M51A (or Electrical and Computer Engineering M16); Electrical and Computer Engineering 3; Engineering 96I; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 1A, 1B, 1C, and 4AL or 4BL.

### The Major

*Required:* Computer Science 111, 118 (or Electrical and Computer Engineering 132B), M151B (or Electrical and Computer Engineering M116C), M152A (or Electrical and Computer Engineering M116L), 180; Electrical and Computer Engineering 100, 102, 113, 115C; one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, Statistics 100A; 8 units of computer science and 8 units of electrical and computer engineering upper-division electives; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); 8 units capstone design from

either Electrical and Computer Engineering 180DA/180DW or 183DA/183DB.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Undergraduate Minors

### Bioinformatics Minor

The Bioinformatics minor introduces undergraduate students to the emerging interdisciplinary field of bioinformatics, an active area of research at UCLA combining elements of the computational sciences with the biological sciences. The minor organizes the many course offerings in different UCLA departments into a coherent course plan providing students with significant training in bioinformatics in addition to the training they obtain from their major. Students who complete the minor will be strong candidates for admission to PhD programs in bioinformatics as well as have the relevant training to obtain jobs in the biotechnology industry.

Students complete a core curriculum and an elective course and are strongly encouraged to participate in undergraduate research as early as possible in one of the many groups offering research opportunities in bioinformatics.

### Admission

To enter the minor, students must be (1) in good academic standing (2.0 grade-point average or better), (2) have completed at least two of the lower-division requirements with minimum grades of C, and (3) file a petition through Message Center. Steps to apply are outlined on the [Office of Academic and Student Affairs](#) website. Information about the minor and the application are available on the minor website.

### The Minor

*Required Lower-Division Courses (17 units minimum):* Computer Science 32 or Program in Computing 10C, Life Sciences 7A, Mathematics 33A, 61.

*Required Upper-Division Courses (18 units minimum):* Computer Science 180 (or Mathematics 182), M184, two courses selected from Computer Science CM121, CM122, and CM124, and one course selected from Chemistry and Biochemistry C100, 153B, Civil and Environmental Engineering 110, Computer Science CM121, CM122, CM124, 170A, CM186, CM187, Ecology and Evolutionary Biology C135, Electrical and Computer Engineering 102, 131A, 141, Human Genetics C144, Mathematics 170A, 170E, Microbiology, Immunology, and Molecular Genetics 132, Molecular, Cell, and Developmental Biology 144, 187AL, Physiological Science 125, Statistics 100A, 100B.

Students are strongly encouraged to take Computer Science M184 as early as possible to obtain an overview of computational biology.

## Policies

Eight units of either Bioinformatics 199 or Computer Science 194 or 199 may be applied as an elective by petition.

If students apply any of Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, or Statistics 100A toward major requirements or another minor, then no other course from that set may be applied toward the minor requirements.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

All minor courses must be taken for a letter grade (unless not offered on that grading basis), and students must have a minimum grade of C– in each and an overall C (2.0) grade-point average in all courses taken for the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Data Science Engineering Minor

The minor is intended to expose students to the entire data science life cycle from both foundational and application perspectives. The foundational courses provide the engineering skills to collect, cleanse, and store data; analyze and draw inference from data; and take action and make decisions. A wide-ranging list of interdisciplinary courses focuses on various data-science applications using these skills.

## Admission

To apply for the minor, students must have an overall grade-point average of 3.0 or better, have completed or be in the process of completing in the present quarter the two lower-division required courses with the grade B– or better, and file a petition through Message Center. Steps to apply are outlined on the [Office of Academic and Student Affairs](#) website. Information about the minor and the application are available on the minor [website](#).

## The Minor

*Required Lower-Division Courses (8 units):* Computer Science 32, Mathematics 33A.

*Required Upper-Division Courses (12 units minimum):* One course from Civil and Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, or Statistics 100A; Computer Science M148 or Electrical and Computer Engineering M148; Computer Science 145 or M146 or Electrical and Computer Engineering M146.

*Elective Upper-Division Courses (8 units minimum):* Two courses from Computer Science M119, CM121, CM122, CM124, 143, 145 or M146 (if not taken as a required course), 161, 180, M182, Electrical and Computer Engineering 102, 113, 114, M119, 133A, M146 (if not taken as a required course), C147, 183DA and 183DB (both must be taken), Mechanical and

Aerospace Engineering C137, 185, Statistics 100B, 115, 170, or C180.

## Policies

Variable topics courses may be taken as topics apply.

Transfer credit for any of the above is subject to approval; consult with the undergraduate counselors before enrolling in any courses for the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and student must have a minimum grade of C in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major Computer Science MS, PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Computer Science MS/Master of Business Administration

## Bioinformatics

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Course

**199. Directed Research in Bioinformatics. (2 to 4)** Tutorial, six to 12 hours. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. Letter grading.

## Computer Science

### Lower-Division Courses

**1. Freshman Computer Science Seminar. (1)** Seminar, one hour. Introduction to department resources and principal topics and key ideas in computer science and computer engineering. Students create critical summaries of seminar talks. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**30. Principles and Practices of Computing. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Designed for students in computer science and related majors who do not have prior programming experience. Precursor course to introductory computer science sequence (courses 31, 32, 33). Teaches students how to use computers as tool for problem solving, creativity, and exploration through design and implementation of computer programs. Key topics are data types including integers, strings, and lists; control structures, including conditionals and loops; and functional decomposition. Letter grading.

**31. Introduction to Computer Science I. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Introduction to computer science via theory, applications, and programming. Basic data types, operators and control structures. Input/output. Procedural and data abstraction. Introduction to object-oriented software development. Functions, recursion. Arrays, strings, pointers. Abstract data types, object-oriented programming. Examples and exercises from computer science theory and applications. Letter grading.

**32. Introduction to Computer Science II. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 31. Object-oriented software development. Abstract data type definition and use. Overloading, inheritance, polymorphism. Object-oriented view of data structures: stacks, queues, lists. Algorithm analysis. Trees, graphs, and associated algorithms. Searching and sorting. Case studies and exercises from computer science applications. Letter grading.

**33. Introduction to Computer Organization. (5)** Lecture, four hours; discussion, two hours; outside study, nine hours. Enforced requisite: course 32. Introductory course on computer architecture, assembly language, and operating systems fundamentals. Number systems, machine language, and assembly language. Procedure calls, stacks, interrupts, and traps. Assemblers, linkers, and loaders. Operating systems concepts: processes and process management, input/output (I/O) programming, memory management, file systems. Letter grading.

**35L. Software Construction. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 31. Fundamentals of tools and environments for software construction projects, particularly open-source platforms used in upper-division computer science courses. Software practice through collaborative student project. Letter grading.

**M51A. Logic Design of Digital Systems. (4)** (Same as Electrical and Computer Engineering M16.) Lecture, four hours; discussion, two hours; outside study, six hours. Introduction to digital systems. Specification and implementation of combinational and sequential systems. Standard logic modules and programmable logic arrays. Specification and implementation of algorithmic systems: data and control sections. Number systems and arithmetic algorithms. Error control codes for digital information. Letter grading.

**97. Variable Topics in Computer Science. (1 to 4)** Lecture, one to four hours; discussion, zero to two hours. Designed for freshmen/sophomores. Variable topics in computer science not covered in regular computer science courses. May be repeated once for credit with topic or instructor change. Letter grading.



**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**111. Operating Systems Principles. (5)** Lecture, four hours; laboratory, two hours; outside study, nine hours. Enforced prerequisites: courses 32, 33, 35L. Introduction to operating systems design and evaluation. Computer software systems performance, robustness, and functionality. Kernel structure, bootstrapping, input/output (I/O) devices and interrupts. Processes and threads; address spaces, memory management, and virtual memory. Scheduling, synchronization. File systems: layout, performance, robustness. Distributed systems: networking, remote procedure call (RPC), asynchronous RPC, distributed file systems, transactions. Protection and security. Exercises involving applications using, and internals of, real-world operating systems. Letter grading.

**112. Modeling Uncertainty in Information Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisites: course 111 and one course from Civil Engineering 110, Electrical Engineering 131A, Mathematics 170A, or Statistics 100A. Designed for juniors/seniors. Probability and stochastic process models as applied in computer science. Basic methodological tools include random variables, conditional probability, expectation and higher moments, Bayes theorem, Markov chains. Applications include probabilistic algorithms, evidential reasoning, analysis of algorithms and data structures, reliability, communication protocol and queueing models. Letter grading.

**117. Computer Networks: Physical Layer. (4)** Lecture, two hours; discussion, two hours; laboratory, two hours; outside study, six hours. Not open to students with credit for course M171L. Introduction to fundamental computer communication concepts underlying and supporting modern networks, with focus on wireless communications and media access layers of network protocol stack. Systems include wireless LANs (IEEE802.11) and ad hoc wireless and personal area networks (e.g., Bluetooth, ZigBee). Experimental project based on mobile radio-equipped devices (smart phones, tablets, etc.) as sensor platforms for personal applications such as wireless health, positioning, and environment awareness, and experimental laboratory sessions included. Letter grading.

**118. Computer Network Fundamentals. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 111. Designed for juniors/seniors. Introduction to design and performance evaluation of computer networks, including such topics as what protocols are, layered network architecture, Internet protocol architecture, network applications, transport protocols, routing algorithms and protocols, internetworking, congestion control, and link layer protocols including Ethernet and wireless channels. Letter grading.

**M119. Fundamentals of Embedded Networked Systems. (4)** (Same as Electrical and Computer Engineering M119.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 33; 118 or Electrical and Computer Engineering 132B; one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, Statistics 100A. Design trade-offs and principles of operation of cyber physical systems such as devices and systems constituting Internet of Things. Topics include signal propagation and modeling, sensing, node architecture and operation, and applications. Letter grading.

**CM121. Introduction to Bioinformatics. (4)** (Same as Chemistry CM160A.) Lecture, four hours; discussion, two hours. Requisites: course 32 or Program in Computing 10C with grade of C- or better, and one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics

170A, Mathematics 170E, or Statistics 100A. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Introduction to bioinformatics and methodologies, with emphasis on concepts and inventing new computational and statistical techniques to analyze biological data. Focus on sequence analysis and alignment algorithms. Concurrently scheduled with course CM221. P/NP or letter grading.

**C122. Algorithms in Computational Genomics. (4)** (Formerly numbered CM122.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 32 or Program in Computing 10C with grade of C- or better, and one course from Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Course C121 is not requisite to C122. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Databases of genomic sequence data are among the largest datasets in all of science. Assembling, indexing, and querying such tremendous datasets is computationally challenging yet critical for many areas of biomedical research. Focus on development of scalable algorithms for analysis of genomic sequence data, with additional focus on formulating biologically relevant problems as computational problems and then solving these problems by developing new algorithms. Concurrently scheduled with course C222. Letter grading.

**CM124. Machine Learning Applications in Genetics. (4)** (Same as Human Genetics CM124.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 32 or Program in Computing 10C with grade of C- or better, Mathematics 33A, and one course from Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Designed for engineering students as well as students from biological sciences and medical school. Introduction to computational analysis of genetic variation and computational interdisciplinary research in genetics. Topics include introduction to genetics, identification of genes involved in disease, inferring human population history, technologies for obtaining genetic information, and genetic sequencing. Focus on formulating interdisciplinary problems as computational problems and then solving those problems using computational techniques from statistics and computer science. Concurrently scheduled with course CM224. Letter grading.

**130. Software Engineering. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Requisites: courses 111, 131. Recommended prerequisite: Engineering 183EW or 185EW. Structured programming, program specification, program proving, modularity, abstract data types, composite design, software tools, software control systems, program testing, team programming. Letter grading.

**131. Programming Languages. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Enforced prerequisites: courses 33, 35L. Basic concepts in design and use of programming languages, including abstraction, modularity, control mechanisms, types, declarations, syntax, and semantics. Study of several different language paradigms, including functional, object-oriented, and logic programming. Letter grading.

**132. Compiler Construction. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 131. Compiler structure; lexical and syntactic analysis; semantic analysis and code generation; theory of parsing. Letter grading.

**133. Parallel and Distributed Computing. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisites: courses 131, M151B. Distributed memory and shared memory parallel architectures; asynchronous parallel languages: MPI, Maise; primitives for parallel computation: specification of parallelism, interprocess communication and synchronization; design of parallel programs for scientific computation and distributed systems. Letter grading.

**134. Distributed Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 118. Covers fundamental concepts regarding design and implementation of distributed systems. Topics include synchronization (e.g., clock synchronization, logical clocks, vector clocks), failure recovery (e.g., snapshotting, primary-backup), consistency models (e.g., linearizability, eventual, causal), consensus protocols (e.g., Paxos, Raft), distributed transactions, and lock. Students gain hands-on, practical experience through multiple programming assignments that work through steps of creating fault-tolerant, sharded key/value store. Exploration of how these concepts have manifested in several real-world, large-scale distributed systems used by Internet companies like Google, Facebook, and Amazon. Letter grading.

**136. Introduction to Computer Security. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 118. Introduction to basic concepts of information security necessary for students to understand risks and mitigations associated with protection of systems and data. Topics include security models and architectures, security threats and risk analysis, access control and authentication/authorization, cryptography, network security, secure application design, and ethics and law. Letter grading.

**C137A. Prototyping Programming Languages. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 131. How different programming language paradigms provide dramatically different ways of thinking about computation and offer trade-offs on many dimensions, such as modularity, extensibility, expressiveness, and safety. Concrete exploration of three major programming paradigms—functional, object-oriented, and logic programming—by prototyping implementations of languages in each. Analysis of prototypes to shed light on design and structural properties of each language and paradigm and to allow easy comparison against one another. Hands-on experience implementing new abstractions, both as stand-alone languages and as libraries in existing languages. Concurrently scheduled with course C237A. Letter grading.

**C137B. Programming Language Design. (4)** Seminar, four hours; outside study, eight hours. Enforced prerequisite: course C137A. Study of various programming language designs, from computing history and research literature, that attempt to address problems of software systems that are bloated, buggy, and difficult to maintain and extend despite trend in computing toward ever higher levels of abstraction for programming. Hands-on experience designing, prototyping, and evaluating new languages, language abstractions, and/or programming environments. Concurrently scheduled with course C237B. Letter grading.

**143. Data Management Systems. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Enforced prerequisite: course 32 or Program in Computing 10C. Information systems and database systems in enterprises. File organization and secondary storage structures. Relational model and relational database systems. Network, hierarchical, and other models. Query languages. Database design principles. Transactions, concurrency, and recovery. Integrity and authorization. Letter grading.

**144. Web Applications. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 143. Important concepts and theory for building effective and safe Web applications and first-hand experience with basic tools. Topics include basic Web architecture and protocol, XML and XML query language, mapping between XML and relational models, information retrieval model and theory, security and user model, Web services and distributed transactions. Letter grading.

**145. Introduction to Data Mining. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 143. Introductory survey of data mining (process of automatic discovery of patterns, changes, associations, and anomalies in massive databases), knowledge engineering, and wide spectrum of data mining application areas such as

bioinformatics, e-commerce, environmental studies, financial markets, multimedia data processing, network monitoring, and social service analysis. Letter grading.

**M146. Introduction to Machine Learning. (4)** (Same as Electrical and Computer Engineering M146.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 32 or Program in Computing 10C; Civil and Environmental Engineering 110 or Electrical and Computer Engineering 131A or Mathematics 170A or 170E or Statistics 100A; Mathematics 33A. Introduction to breadth of data science. Foundations for modeling data sources, principles of operation of common tools for data analysis, and application of tools and models to data gathering and analysis. Topics include statistical foundations, regression, classification, kernel methods, clustering, expectation maximization, principal component analysis, decision theory, reinforcement learning and deep learning. Letter grading.

**M148. Introduction to Data Science. (4)** (Same as Electrical and Computer Engineering M148.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 31 or Program in Computing 10A, and 10B, and one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. How to analyze data arising in real world so as to understand corresponding phenomenon. Covers topics in machine learning, data analytics, and statistical modeling classically employed for prediction. Comprehensive, hands-on overview of data science domain by blending theoretical and practical instruction. Data science lifecycle: data selection and cleaning, feature engineering, model selection, and prediction methodologies. Letter grading.

**M151B. Computer Systems Architecture. (4)** (Same as Electrical and Computer Engineering M116C.) Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: courses 33, and M51A or Electrical and Computer Engineering M16. Recommended: courses 111, and M152A or Electrical and Computer Engineering M116L. Computer system organization and design, implementation of CPU datapath and control, instruction set design, memory hierarchy (caches, main memory, virtual memory) organization and management, input/output subsystems (bus structures, interrupts, DMA), performance evaluation, pipelined processors. Letter grading.

**M152A. Introductory Digital Design Laboratory. (2)** (Same as Electrical and Computer Engineering M116L.) Laboratory, four hours; outside study, two hours. Enforced requisite: course M51A or Electrical and Computer Engineering M16. Hands-on design, implementation, and debugging of digital logic circuits, use of computer-aided design tools for schematic capture and simulation, implementation of complex circuits using programmed array logic, design projects. Letter grading.

**152B. Digital Design Project Laboratory. (4)** Laboratory, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course M151B or Electrical Engineering M116C. Recommended: Engineering 183EW or 185EW. Limited to seniors. Design and implementation of complex digital subsystems using field-programmable gate arrays (e.g., processors, special-purpose processors, device controllers, and input/output interfaces). Students work in teams to develop and implement designs and to document and give oral presentations of their work. Letter grading.

**161. Fundamentals of Artificial Intelligence. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Enforced requisite: course 180. Introduction to fundamental problem solving and knowledge representation paradigms of artificial intelligence. Introduction to Lisp with regular programming assignments. State-space and problem reduction methods, brute-force and heuristic search, planning techniques, two-player games. Knowledge structures including predicate logic, production systems, semantic nets and primitives, frames, scripts. Special topics in natural language processing, expert systems, vision, and parallel architectures. Letter grading.

**162. Natural Language Processing. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 145 or M146. Recommended requisite: course 35L. Introduction to wide range of natural language processing, tasks, algorithms for effectively solving these problems, and methods of evaluating their performance. Focus on statistical and neural-network learning algorithms that train on text corpora to automatically acquire knowledge needed to perform task. Discussion of general issues and present abstract algorithms. Assignments on theoretical foundations of linguistic phenomena and implementation of algorithms. Implemented versions of some of algorithms are provided in order to give feel for how discussed systems really work, and allow for extensions and experimentation as part of course projects. Letter grading.

**168. Computational Methods for Medical Imaging. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 32 or Program in Computing 10C with grade of C- or better, Mathematics 33A, one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, or Statistics 100A. Theory and practice of image acquisition including angiography, computed tomography (CT), and magnetic resonance (MR). Project-based course covers applied topics in medical imaging including image processing, atlas, predictive modeling, personalized medicine, data driven and machine learning methods. Letter grading.

**170A. Mathematical Modeling and Methods for Computer Science. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Enforced requisites: course 180, Mathematics 33B. Introduction to methods for modeling and simulation using interactive computing environments. Extensive coverage of methods for numeric and symbolic computation, matrix algebra, statistics, floating point, optimization, and spectral analysis. Emphasis on applications in simulation of physical systems. Letter grading.

**M171L. Data Communication Systems Laboratory. (2 to 4)** (Same as Electrical and Computer Engineering M171L.) Laboratory, four to eight hours; outside study, two to four hours. Recommended preparation: course M152A. Limited to seniors. Not open to students with credit for course M117. Interpretation of analog-signaling aspects of digital systems and data communications through experience in using contemporary test instruments to generate and display signals in relevant laboratory setups. Use of oscilloscopes, pulse and function generators, baseband spectrum analyzers, desktop computers, terminals, modems, PCs, and workstations in experiments on pulse transmission impairments, waveforms and their spectra, modem and terminal characteristics, and interfaces. Letter grading.

**172. Real-Time Three-Dimensional Animation. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 32. Introduction to handling of geometry, appearance, and motion specifically for real-time virtual environments, both on theoretical and practical levels. Completion of one quality real-time three-dimensional animation by following through from preproduction to postproduction. End products expected to be game demonstrations, storytelling games, or machinima (use of real-time graphics engines to create cinematic productions). Focus on achieving highest quality productions to qualify and submit products to Student Academy Awards competition. Use of Unity Game Engine to make technical decisions to adapt stories to games. Introduction to interaction concepts, enabling students to create low-fidelity real-time three-dimensional animation and to concepts in artificial intelligence, enabling them to refine their interactions to create high-fidelity real-time three-dimensional animation. Letter grading.

**174A. Introduction to Computer Graphics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 32. Basic principles behind modern two- and three-dimensional computer graphics systems, including complete set of steps that modern graphics pipelines use to create realistic images in real time. How to position and manip-

ulate objects in scene using geometric and camera transformations. How to create final image using perspective and orthographic transformations. Basics of modeling primitives such as polygonal models and implicit and parametric surfaces. Basic ideas behind color spaces, illumination models, shading, and texture mapping. Letter grading.

**174B. Introduction to Computer Graphics: Three-Dimensional Photography and Rendering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 174A. State of art in three-dimensional photography and image-based rendering. How to use cameras and light to capture shape and appearance of real objects and scenes. Process provides simple way to acquire three-dimensional models of unparallelled detail and realism. Applications of techniques from entertainment (reverse engineering and postprocessing of movies, generation of realistic synthetic objects and characters) to medicine (modeling of biological structures from imaging data), mixed reality (augmentation of video), and security (visual surveillance). Fundamental analytical tools for modeling and inferring geometric (shape) and photometric (reflectance, illumination) properties of objects and scenes, and for rendering and manipulating novel views. Letter grading.

**C174C. Computer Animation. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 174A. Designed for juniors/seniors. Introduction to computer animation, including basic principles of character modeling, forward and inverse kinematics, forward and inverse dynamics, motion capture animation techniques, physics-based animation of particles and systems, and motor control. Concurrently scheduled with course C274C. Letter grading.

**180. Introduction to Algorithms and Complexity. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: course 32, Mathematics 61. Designed for junior/senior Computer Science majors. Introduction to design and analysis of algorithms. Design techniques: divide-and-conquer, greedy method, dynamic programming; selection of prototypical algorithms; choice of data structures and representations; complexity measures: time, space, upper, lower bounds, asymptotic complexity; NP-completeness. Letter grading.

**181. Theory of Computing. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 180. Designed for junior/senior Computer Science majors. Finite state machines, context-free languages, and pushdown automata. Closure properties and pumping lemmas. Turing machines, undecidability. Introduction to computability. Letter grading.

**M182. Dynamic Biosystem Modeling and Simulation Methodology. (4)** (Same as Bioengineering M182.) Lecture, four hours; discussion, one hour; laboratory, two hours; outside study, five hours. Requisites: Life Sciences 30A and 30B, or Mathematics 3A and 3B, or 31A and 31B. Recommended requisite or corequisite: Mathematics 3C, 32A, or 32T. For undergraduate students in life, computational, engineering, and mathematical sciences. Active learning approach. Introduction to explicit modeling and simulation of dynamic biological systems. Basic methodology for transforming biology, biochemistry, and physiology into system diagrams, graphs, and mathematical expressions for studying their behavior. Structural models, formulated from basic conservation and mass action laws and feedback concepts, are further transformed into first-order differential equations, and implemented in simulation diagrams for quantifying and exploring biosystem properties. Examples show how to use these explicit models to gain clarity on nature of biosystem phenomena, and frame questions and explore new ideas for research. Letter grading.

**183. Introduction to Cryptography. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Preparation: knowledge of basic probability theory. Enforced requisite: course 180. Introduction to cryptography, computer security, and basic concepts and techniques. Topics include notions of hardness, one-way functions, hard-core bits, pseudorandom generators, pseudorandom functions and pseudorandom



permutations, semantic security, public-key and private-key encryption, key-agreement, homomorphic encryption, private information retrieval and voting protocols, message authentication, digital signatures, interactive proofs, zero-knowledge proofs, collision-resistant hash functions, commitment protocols, and two-party secure computation with static security. Letter grading.

**M184. Introduction to Computational and Systems Biology. (2)** (Same as Bioengineering M184 and Computational and Systems Biology M184.) Lecture, two hours; outside study, four hours. Enforced requisites: one course from 31, Civil Engineering M20, Mechanical and Aerospace Engineering M20, or Program in Computing 10A; and Life Sciences 30B or Mathematics 3B or 31B. Survey course designed to introduce students to computational and systems modeling and computation in biology and medicine, providing motivation, flavor, culture, and cutting-edge contributions in computational biosciences and aiming for more informed basis for focused studies by students with computational and systems biology interests. Presentations by individual UCLA researchers discussing their active computational and systems biology research. P/NP grading.

**CM186. Computational Systems Biology: Modeling and Simulation of Biological Systems. (5)** (Same as Bioengineering CM186, Computational and Systems Biology M186, and Ecology and Evolutionary Biology M178.) Lecture, four hours; laboratory, two hours; discussion, one hour. Requisites: Life Sciences 30A, 30B, Mathematics 32A or M32T, 33A, and 33B; or Mathematics 31A, 31B, 32A or M32T, 33A, and 33B. Dynamic biosystem modeling and computer simulation methods for studying biological/biomedical processes and systems at multiple levels of organization. Intermediate linear and nonlinear control system, multi-compartmental, epidemiological, pharmacokinetic, and other biomodeling methods applied to life sciences problems at molecular, cellular, organ, and population levels. Both theory- and data-driven modeling, with focus on translating biomodeling goals and data into dynamical mathematical models, and implementing them for simulation, quantification, and analysis. Numerical simulation, optimization, and parameter identifiability and search algorithms, with model discrimination and analysis and software exercises in PC laboratory assignments. Concurrently scheduled with course CM286. Letter grading.

**CM187. Research Communication in Computational and Systems Biology. (4)** (Same as Bioengineering CM187 and Computational and Systems Biology M187.) Lecture, four hours; outside study, eight hours. Requisites: course M182 or CM186 or Computational and Systems Biology M150; and research experience (course 199, Bioengineering 199, Computational and Systems Biology 199, or equivalent). Closely directed, interactive, and real research experience in active quantitative systems biology research laboratory. Direction on how to focus on topics of current interest in scientific community, appropriate to student interests and capabilities. Critiques of oral presentations and written progress reports explain how to proceed with search for research results. Major emphasis on effective research reporting, both oral and written. Concurrently scheduled with course CM287. Letter grading.

**188. Special Courses in Computer Science. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Special topics in computer science for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated for credit with topic or instructor change. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual

study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**192. Methods and Application of Collaborative Learning Theory in Life Sciences. (2)** Seminar, two hours; clinic, four hours. Requisites: course 192A or Life Sciences 192A (may be taken concurrently), and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated four times for credit. Letter grading.

**M192A. Introduction to Collaborative Learning Theory and Practice. (1)** (Formerly numbered 192A.) (Same as Atmospheric and Oceanic Sciences M192A, Chemistry M192E, Life Sciences M192A, Mathematics M192A, and Physics M192S.) Seminar, one hour. Training seminar for undergraduate students who are selected for learning assistant (LA) program. Exploration of current topics in pedagogy and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. Letter grading.

**194. Research Group Seminars: Computer Science. (4)** Seminar, four hours; outside study, eight hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field or of research of faculty members or students. May be repeated for credit. Letter grading.

**199. Directed Research in Computer Science. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**201. Computer Science Seminar. (2)** Seminar, four hours; outside study, two hours. Designed for graduate computer science students. Seminars on current research topics in computer science. May be repeated for credit. S/U grading.

**202. Advanced Computer Science Seminar. (4)** Seminar, four hours; outside study, eight hours. Preparation: completion of major field examination in computer science. Current computer science research into theory of, analysis and synthesis of, and applications of information processing systems. Each member completes one tutorial and one or more original pieces of work in one specialized area. May be repeated for credit. Letter grading.

**205. Health Analytics. (4)** Lecture, four hours; outside study, eight hours. Enforced requisites: courses 31, 180. Recommended: statistics and probability, numerical methods, knowledge in programming languages. Applied data analytics course, with focus on healthcare applications. How to properly generate and analyze health data. Project-based course to learn about best practices in health data collection and validation. Exploration of various machine learning and data analytic tools to learn underlying structure of datasets to solve healthcare problems. Different machine learning concepts and algorithms, statistical models, and building of data-driven models. Big data analytics and tools for handling structured, unstructured, and semi-structured datasets. Letter grading.

**211. Network Protocol and Systems Software Design for Wireless and Mobile Internet. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 118. Designed for graduate students. In-depth study of network protocol and systems software design in area of wireless and mobile Internet. Topics include (1) networking fundamentals: design philosophy of TCP/IP, end-to-end arguments, and protocol design principles, (2) networking protocols: 802.11 MAC standard, packet scheduling, mobile IP, ad hoc routing, and wireless TCP, (3) mobile computing systems software: middleware, file system, services, and applications, and (4) topical studies: energy-efficient design, security, location management, and quality of service. Letter grading.

**212A. Queueing Systems Theory. (4)** Lecture, four hours; outside study, eight hours. Requisites: course 112, Electrical Engineering 131A. Resource sharing issues and theory of queueing (waiting-line) systems. Review of Markov chains and baby queueing theory. Method of stages. M/E./1. E./M/1. Bulk arrival and bulk service systems. Series-parallel stages. Fundamentals of open and closed queueing networks. Intermediate queueing theory: M/G/1, G/M/m. Collective marks. Advanced queueing theory: G/G/1, Lindley integral equation, spectral solution. Inequalities, bounds, approximations. Letter grading.

**M213A. Embedded Systems. (4)** (Same as Electrical and Computer Engineering M202A.) Lecture, four hours; discussion, one hour; outside study, seven hours. Designed for graduate computer science and electrical engineering students. Methodologies and technologies for design of embedded systems. Topics include hardware and software platforms for embedded systems, techniques for modeling and specification of system behavior, software organization, real-time operating system scheduling, real-time communication and packet scheduling, low-power battery and energy-aware system design, timing synchronization, fault tolerance and debugging, and techniques for hardware and software architecture optimization. Theoretical foundations as well as practical design methods. Letter grading.

**M213B. Energy-Aware Computing and Cyber-Physical Systems. (4)** (Same as Electrical and Computer Engineering M202B.) Lecture, four hours; outside study, eight hours. Requisite: course M51A or Electrical and Computer Engineering M16. Recommended: courses 111, and M151B or Electrical and Computer Engineering M116C. System-level management and cross-layer methods for power and energy consumption in computing and communication at various scales ranging across embedded, mobile, personal, enterprise, and data-center scale. Computing, networking, sensing, and control technologies and algorithms for improving energy sustainability in human-cyber-physical systems. Topics include modeling of energy consumption, energy sources, and energy storage; dynamic power management; power-performance scaling and energy proportionality; duty-cycling; power-aware scheduling; low-power protocols; battery modeling and management; thermal management; sensing of power consumption. Letter grading.

**214. Big Data Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 111. Modern computing has entered era of big data. Introduction to concepts and state-of-art in modern big data systems. Study of distributed storage and database systems, which provide foundation for other systems. Discussion of systems built for specific kinds of workloads, such as processing of streaming data, relational data, batched data, graph data, as well as machine learning. Letter grading.

**215. Internet of Things: Connectivity and Sensing. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisite: course 118 or equivalent. Focus on emerging and state-of-art Internet of Things (IoT) technologies and their applications. Covers diverse set of IoT and wireless networking technologies such as millimeter wave (mmWave), acoustic, radio-frequency identification (RFID), Wi-Fi, long range (LoRa), Bluetooth, global positioning system (GPS) for variety of emerging communication and sensing applications such as 5G, dig-

ital medicine, digital farming, smart cities, and smart homes. Students learn how to design and build IoT system. Letter grading.

**216. Network Algorithms.** (4) Lecture, four hours; outside study, eight hours. Recommended preparation: one course on networks. Requisite: course 211. Introduction to algorithms for routers and servers. Models of network devices and hardware design. Principles for efficient implementation. Lookup algorithms (exact match, prefix lookups, advanced cardiac life support), fair queuing implementations, crossbar and scalable switches, with examples from well-known networking devices. Advanced topics include traffic measurement and network security. Letter grading.

**217A. Internet Architecture and Protocols.** (4) Lecture, four hours; outside study, eight hours. Enforced requisite: course 118. Focus on mastering existing core set of Internet protocols, including IP, core transport protocols, routing protocols, DNS, NTP, and security protocols such as DNSSEC, to understand principles behind design of these protocols, appreciate their design tradeoffs, and learn lessons from their operations. Letter grading.

**217B. Advanced Topics in Internet Research.** (4) Lecture, four hours; outside study, eight hours. Enforced requisite: course 217A. Designed for graduate students. Overview of Internet development history and fundamental principles underlying TCP/IP protocol design. Discussion of current Internet research topics, including latest research results in routing protocols, transport protocols, network measurements, network security protocols, and clean-slate approach to network architecture design. Fundamental issues in network protocol design and implementations. Letter grading.

**218. Advanced Computer Networks.** (4) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 112, 118. Review of seven-layer ISO-OSI model. High-speed networks: LANs, MANs, ATM. Flow and congestion control; bandwidth allocation. Internetworking. Letter grading.

**219. Current Topics in Computer System Modeling Analysis.** (4) Lecture, eight hours; outside study, four hours. Review of current literature in area of computer system modeling analysis in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. May be repeated for credit with consent of instructor. Letter grading.

**CM221. Introduction to Bioinformatics.** (4) (Same as Bioinformatics M221, Chemistry CM260A, and Human Genetics M260A.) Lecture, four hours; discussion, two hours. Requisites: course 32 or Program in Computing 10C with grade of C– or better, and one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Introduction to bioinformatics and methodologies, with emphasis on concepts and inventing new computational and statistical techniques to analyze biological data. Focus on sequence analysis and alignment algorithms. Concurrently scheduled with course CM121. S/U or letter grading.

**C222. Algorithms in Computational Genomics.** (4) (Formerly numbered CM222.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 32 or Program in Computing 10C with grade of C– or better, and one course from Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Course C221 is not requisite to C222. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Databases of genomic sequence data are among the largest datasets in all of science. Assembling, indexing, and querying such tremendous datasets is computationally challenging yet critical for many areas of biomedical research. Focus on development of scalable algorithms for analysis of genomic sequence data, with additional focus on formulating biologically relevant problems as

computational problems and then solving these problems by developing new algorithms. Concurrently scheduled with course C122. Letter grading.

**CM224. Machine Learning Applications in Genetics.** (4) (Same as Bioinformatics M224 and Human Genetics CM224.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 32 or Program in Computing 10C with grade of C– or better, Mathematics 33A, and one course from Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Designed for engineering students as well as students from biological sciences and medical school. Introduction to computational analysis of genetic variation and computational interdisciplinary research in genetics. Topics include introduction to genetics, identification of genes involved in disease, inferring human population history, technologies for obtaining genetic information, and genetic sequencing. Focus on formulating interdisciplinary problems as computational problems and then solving those problems using computational techniques from statistics and computer science. Concurrently scheduled with course CM124. Letter grading.

**M225. Computational Methods in Genomics.** (4) (Same as Bioinformatics M225 and Human Genetics M265.) Lecture, two and one half hours; discussion, two and one half hours; outside study, seven hours. Introduction to computational approaches in bioinformatics, genomics, and computational genetics and preparation for computational interdisciplinary research in genetics and genomics. Topics include genome analysis, regulatory genomics, association analysis, association study design, isolated and admixed populations, population substructure, human structural variation, model organisms, and genomic technologies. Computational techniques and methods include those from statistics and computer science. Letter grading.

**M226. Machine Learning in Bioinformatics.** (4) (Same as Bioinformatics M226, Biomathematics M226, and Human Genetics M226.) Lecture, four hours; outside study, eight hours. Enforced requisite: course 32 or Program in Computing 10C with grade of C– or better. Recommended: one course from Biostatistics 100A, 110A, Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, or Statistics 100A. Familiarity with probability, statistics, linear algebra, and algorithms expected. Designed for engineering students as well as students from biological sciences and medical school. Biology has become data-intensive science. Bottleneck in being able to make sense of biological processes has shifted from data generation to statistical models and inference algorithms that can analyze these datasets. Statistical machine learning provides important toolkit in this endeavor. Biological datasets offer new challenges to field of machine learning. Examination of statistical and computational aspects of machine learning techniques and their application to key biological questions. Letter grading.

**M229S. Seminar: Current Topics in Bioinformatics.** (4) (Same as Biological Chemistry M229S and Human Genetics M229S.) Seminar, four hours; outside study, eight hours. Designed for graduate engineering students as well as students from biological sciences and medical school. Introduction to current topics in bioinformatics, genomics, and computational genetics and preparation for computational interdisciplinary research in genetics and genomics. Topics include genome analysis, regulatory genomics, association analysis, association study design, isolated and admixed populations, population substructure, human structural variation, model organisms, and genomic technologies. Computational techniques include those from statistics and computer science. May be repeated for credit with topic change. Letter grading.

**230. Software Engineering.** (4) Lecture, four hours; discussion, two hours. Recommended preparation for undergraduate students: prior software engineering course. Required preparation for graduate students: undergraduate-level knowledge of data structures and object-oriented program languages. As software systems become increasingly large and complex, automated software engineering analysis and develop-

ment tools play important role in various software engineering tasks, such as design, construction, evolution, and testing and debugging of software systems. Introduction to foundations, techniques, tools, and applications of automated software engineering technology. Development, extension, and evaluation of mini automated software engineering analysis tool and assessment of how tool fits into software development process. Introduction to current research topics in automated software engineering. S/U or letter grading.

**231. Types and Programming Languages.** (4) Lecture, four hours; outside study, eight hours. Requisite: course 131. Introduction to static type systems and their usage in programming language design and software reliability. Operational semantics, simply-typed lambda calculus, type soundness proofs, types for mutable references, types for exceptions. Parametric polymorphism, let-bound polymorphism, polymorphic type inference. Types for objects, subtyping, combining parametric polymorphism and subtyping. Types for modules, parameterized modules. Formal specification and implementation of variety of type systems, as well as readings from recent research literature on modern applications of type systems. Letter grading.

**232. Static Program Analysis.** (4) Lecture, four hours; outside study, eight hours. Requisite: course 132. Introduction to static analysis of object-oriented programs and its usage for optimization and bug finding. Class hierarchy analysis, rapid type analysis, equality-based analysis, subset-based analysis, flow-insensitive and flow-sensitive analysis, context-insensitive and context-sensitive analysis. Soundness proofs for static analyses. Efficient data structures for static analysis information such as directed graphs and binary decision diagrams. Flow-directed method inlining, type-safe method inlining, synchronization optimization, deadlock detection, security vulnerability detection. Formal specification and implementation of variety of static analyses, as well as readings from recent research literature on modern applications of static analysis. Letter grading.

**233A. Parallel Programming.** (4) Lecture, four hours; outside study, eight hours. Requisites: courses 111, 131. Mutual exclusion and resource allocation in distributed systems; primitives for parallel computation: specification of parallelism, interprocess communication and synchronization, atomic actions, binary and multiway rendezvous; synchronous and asynchronous languages: CSP, Ada, Linda, Maisie, UC, and others; introduction to parallel program verification. Letter grading.

**233B. Verification of Concurrent Programs.** (4) Lecture, four hours; outside study, eight hours. Requisite: course 233A. Formal techniques for verification of concurrent programs. Topics include safety, liveness, program and state assertion-based techniques, weakest precondition semantics, Hoare logic, temporal logic, UNITY, and axiomatic semantics for selected parallel languages. Letter grading.

**234. Computer-Aided Verification.** (4) Lecture, four hours; outside study, eight hours. Requisite: course 181. Introduction to theory and practice of formal methods for design and analysis of concurrent and embedded systems, with focus on algorithmic techniques for checking logical properties of hardware and software systems. Topics include semantics of reactive systems, invariant verification, temporal logic model checking, theory of omega automata, state-space reduction techniques, compositional and hierarchical reasoning. Letter grading.

**235. Advanced Operating Systems.** (4) Lecture, four hours. Preparation: C or C++ programming experience. Requisite: course 111. In-depth investigation of operating systems issues through guided construction of research operating system for PC machines and consideration of recent literature. Memory management and protection, interrupts and traps, processes, interprocess communication, preemptive multitasking, file systems. Virtualization, networking, profiling, research operating systems. Series of laboratory projects, including extra challenge work. Letter grading.

**236. Computer Security. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 111, 118. Basic and research material on computer security. Topics include basic principles and goals of computer security, common security tools, use of cryptographic protocols for security, security tools (firewalls, virtual private networks, honeypots), virus and worm protection, security assurance and testing, design of secure programs, privacy, applying security principles to real-world problems, and new and emerging threats and security tools. Letter grading.

**C237A. Prototyping Programming Languages. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 131. How different programming language paradigms provide dramatically different ways of thinking about computation and offer trade-offs on many dimensions, such as modularity, extensibility, expressiveness, and safety. Concrete exploration of three major programming paradigms—functional, object-oriented, and logic programming—by prototyping implementations of languages in each. Analysis of prototypes to shed light on design and structural properties of each language and paradigm and to allow easy comparison against one another. Hands-on experience implementing new abstractions, both as stand-alone languages and as libraries in existing languages. Concurrently scheduled with course C137A. Letter grading.

**C237B. Programming Language Design. (4)** Seminar, four hours; outside study, eight hours. Enforced prerequisite: course C237A. Study of various programming language designs, from computing history and research literature, that attempt to address problems of software systems that are bloated, buggy, and difficult to maintain and extend despite trend in computing toward ever higher levels of abstraction for programming. Hands-on experience designing, prototyping, and evaluating new languages, language abstractions, and/or programming environments. Concurrently scheduled with course C137B. Letter grading.

**M238. Quantum Programming. (4)** (Formerly numbered 238.) (Same as Quantum Science and Technology M205.) Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisite: Mathematics 115A. History of quantum computing; notion of qubit; four postulates that provide interface to quantum mechanics; concepts of quantum circuit and universal gate set; quantum teleportation; superdense coding; no-cloning theorem; suite of fundamental quantum algorithms including Shor's algorithm, Grover's algorithm, and quantum approximate optimization algorithm; several quantum programming languages and how they compare; quantum simulators; quantum compilers; quantum error correction; quantum advantage. Students implement several quantum algorithms in multiple languages and run them on both simulators and quantum computer. Letter grading.

**239. Current Topics in Computer Science: Programming Languages and Systems. (4)** Lecture, four hours; outside study, eight hours. Review of current literature in area of computer science programming languages and systems in which instructor has developed special proficiency as consequence of research interests. May be repeated for credit with topic change. Letter grading.

**240A. Databases and Knowledge Bases. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 143. Theoretical and technological foundation of Intelligent Database Systems, that merge database technology, knowledge-based systems, and advanced programming environments. Rule-based knowledge representation, spatio-temporal reasoning, and logic-based declarative querying/programming are salient features of this technology. Other topics include object-relational systems and data mining techniques. Letter grading.

**240B. Advanced Data and Knowledge Bases. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 143, 240A. Logical models for data and knowledge representations. Rule-based languages and nonmonotonic reasoning. Temporal queries, spatial queries, and uncertainty in deductive databases and object relational databases (ORDBs). Abstract

data types and user-defined column functions in ORDBs. Data mining algorithms. Semistructured information. Letter grading.

**241B. Pictorial and Multimedia Database Management. (4)** Lecture, three and one half hours; discussion, 30 minutes; laboratory, one hour; outside study, seven hours. Prerequisite: course 143. Multimedia data: alphanumeric, long text, images/pictures, video, and voice. Multimedia information systems requirements. Data models. Searching and accessing databases and across Internet by alphanumeric, image, video, and audio content. Querying, visual languages, and communication. Database design and organization, logical and physical. Indexing methods. Internet multimedia streaming. Other topics at discretion of instructor. Letter grading.

**244A. Distributed Database Systems. (4)** Lecture, four hours; outside study, eight hours. File allocation, intelligent directory design, transaction management, deadlock, strong and weak concurrency control, commit protocols, semantic query answering, multi-database systems, fault recovery techniques, network partitioning, examples, trade-offs, and design experiences. Letter grading.

**245. Big Data Analytics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisite: course 143 or 180 or equivalent. With unprecedented rate at which data is being collected today in almost all fields of human endeavor, there is emerging economic and scientific need to extract useful information from it. Data analytics is process of automatic discovery of patterns, changes, associations, and anomalies in massive databases, and is highly interdisciplinary field representing confluence of several disciplines, including database systems, data warehousing, data mining, machine learning, statistics, algorithms, data visualization, and cloud computing. Survey of main topics in big data analytics and latest advances, as well as wide spectrum of applications such as bioinformatics, E-commerce, environmental study, financial market study, multimedia data processing, network monitoring, social media analysis. Letter grading.

**246. Web Information Management. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisites: courses 112, 143, 180, 181. Designed for graduate students. Scale of Web data requires novel algorithms and principles for their management and retrieval. Study of Web characteristics and new management techniques needed to build computer systems suitable for Web environment. Topics include Web measuring techniques, large-scale data mining algorithms, efficient page refresh techniques, Web-search ranking algorithms, and query processing techniques on independent data sources. Letter grading.

**247. Advanced Data Mining. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisite: course 145 or M146 or equivalent. Introduction of concepts, algorithms, and techniques of data mining on different types of datasets, covering basic data mining algorithms, advanced topics on text mining, recommender systems, and graph/network mining. Team-based project involving hands-on practice of mining useful knowledge from large data sets is required. Letter grading.

**249. Current Topics in Data Structures. (4)** Lecture, four hours; outside study, eight hours. Review of current literature in area of data structures in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. May be repeated for credit with consent of instructor. Letter grading.

**251A. Advanced Computer Architecture. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course M151B. Recommended: course 111. Design and implementation of high-performance systems, advanced memory hierarchy techniques, static and dynamic pipelining, superscalar and VLIW processors, branch prediction, speculative execution, software support for instruction-level parallelism, simulation-based performance analysis and evaluation, state-of-art design examples, introduction to parallel architectures. Letter grading.

**251B. Parallel Computer Architectures. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course M151B. Recommended: course 251A. SIMD and MIMD systems, symmetric multiprocessors, distributed-shared-memory systems, messages-passing systems, multicore chips, clusters, interconnection networks, host-network interfaces, switching element design, communication primitives, cache coherency, memory consistency models, synchronization primitives, state-of-art design examples. Letter grading.

**252A. Arithmetic Algorithms and Processors. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 251A. Number systems: conventional, redundant, signed-digit, and residue. Types of algorithms and implementations. Complexity measures. Fast algorithms and implementations for two-operand addition, multioperand addition, multiplication, division, and square root. Online arithmetic. Evaluation of transcendental functions. Floating-point arithmetic and numerical error control. Arithmetic error codes. Residue arithmetic. Examples of contemporary arithmetic ICs and processors. Letter grading.

**256A. Advanced Scalable Architectures. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course M151B. Recommended: course 251A. State-of-art scalable multiprocessors. Interdependence among implementation technology, chip microarchitecture, and system architecture. High-performance building blocks, such as chip multiprocessors (CMPs). On-chip and off-chip communication. Mechanisms for exploiting parallelism at multiple levels. Current research areas. Examples of chips and systems. Letter grading.

**M258A. Design of VLSI Circuits and Systems. (4)** (Same as Electrical and Computer Engineering M216A.) Lecture, four hours; discussion, two hours; laboratory, four hours; outside study, two hours. Prerequisites: course M51A or Electrical and Computer Engineering M16, and Electrical and Computer Engineering 115A. Recommended: Electrical and Computer Engineering 115C. LSI/VLSI design and application in computer systems. Fundamental design techniques that can be used to implement complex integrated systems on chips. Letter grading.

**M258C. LSI in Computer System Design. (4)** (Same as Electrical and Computer Engineering M216C.) Lecture, four hours; laboratory, four hours; outside study, four hours. Prerequisite: course M258A. LSI/VLSI design and application in computer systems. In-depth studies of VLSI architectures and VLSI design tools. Letter grading.

**258F. Physical Design Automation of VLSI Systems. (4)** Lecture, four hours; outside study, eight hours. Detailed study of various physical design automation problems of VLSI circuits, including logic partitioning, floorplanning, placement, global routing, channel and switchbox routing, planar routing and via minimization, compaction and performance-driven layout. Discussion of applications of number of important optimization techniques, such as network flows, Steiner trees, simulated annealing, and generic algorithms. Letter grading.

**258G. Logic Synthesis of Digital Systems. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses M51A, 180. Detailed study of various problems in logic-level synthesis of VLSI digital systems, including two-level Boolean network optimization; multilevel Boolean network optimization; technology mapping for standard cell designs and field-programmable gate-array (FPGA) designs; retiming for sequential circuits; and applications of binary decision diagrams (BDDs). Letter grading.

**258H. Analysis and Design of High-Speed VLSI Interconnects. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses M258A, 258F. Detailed study of various problems in analysis and design of high-speed VLSI interconnects at both integrated circuit (IC) and packing levels, including interconnect capacitance and resistance, lossless and lossy transmission lines, cross-talk and power distribution noise, delay models and power dissipation models, interconnect topology and geometry optimization, and clocking for high-speed systems. Letter grading.

**259. Current Topics in Computer Science: System Design/Architecture. (4)** Lecture, four hours; outside study, eight hours. Review of current literature in area of computer science system design in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. May be repeated for credit with topic change. Letter grading.

**260. Machine Learning Algorithms. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended prerequisite: course 180. Problems of identifying patterns in data. Machine learning allows computers to learn potentially complex patterns from data and to make decisions based on these patterns. Introduction to fundamentals of this discipline to provide both conceptual grounding and practical experience with several learning algorithms. Techniques and examples used in areas such as healthcare, financial systems, commerce, and social networking. Letter grading.

**260B. Algorithmic Machine Learning. (4)** Lecture, four hours; outside study, eight hours. In-depth examination of handful of ubiquitous algorithms in machine learning. Covers several classical tools in machine learning but more emphasis on recent advances and developing efficient and provable algorithms for learning tasks. Topics include low-rank approximations, online learning, multiplicative weights framework, mathematical optimization, outlier-robust algorithms, streaming algorithms. S/U or letter grading.

**260C. Deep Learning. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisites: courses 180, 260. Not open to students with credit for Electrical and Computer Engineering C147 or C247. Study of basics of deep neural networks and their applications, including but not limited to computer vision, natural language processing, and graph mining. Covers topics including foundation of deep learning, how to train neural network (optimization), architecture designs for various tasks, and other advanced topics. By course end, students are expected to be familiar with deep learning and be able to apply deep learning algorithms to variety of tasks. Letter grading.

**260D. Large-Scale Machine Learning. (4)** Lecture, four hours; discussion, two hours; outside study six hours. Prerequisite: course M146. To alleviate costs and improve robustness and generalization performance of modern machine learning models, it becomes crucial to develop methods with strong theoretical guarantees to warrant efficient, accurate, and robust learning. Discussion of advanced topics and state-of-art research to improve efficiency, robustness, and scalability of machine learning algorithms on large data. Topics include advanced optimization, variance reduction, distributed training, federated learning, data summarization, robust learning, neural network pruning, neural architecture search, neural network quantization. Letter grading.

**260R. Reinforcement Learning. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Fundamentals and advanced topics of reinforcement learning (RL), computational learning approach where agent tries to maximize total amount of reward it receives while interacting with complex and uncertain environments. Includes introduction of Markov decision processes, model-free RL and model-based RL methods, policy optimization, RL distributed system design, as well as case studies of RL in game playing such as AlphaGo, traffic simulation, autonomous driving, and other machine autonomy applications. Advanced topics of RL such as multi-agent RL, human-in-loop method, and imitation learning. Letter grading.

**261. Deep Generative Models. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisite: course M146. Fundamentals of variational autoencoders, generative adversarial networks, autoregressive models, normalizing flow models, energy-based models, diffusion models. Applications of generative models in reinforcement learning, scientific discovery, and societal challenges in high-stakes deployments. S/U or letter grading.

**261A. Problem Solving and Search. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 180. In-depth treatment of systematic problem-solving

search algorithms in artificial intelligence, including problem spaces, brute-force search, heuristic search, linear-space algorithms, real-time search, heuristic evaluation functions, two-player games, and constraint-satisfaction problems. Letter grading.

**262A. Learning and Reasoning with Bayesian Networks. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisite: course 112 or Electrical Engineering 131A. Review of several formalisms for representing and managing uncertainty in reasoning systems; presentation of comprehensive description of Bayesian inference using belief networks representation. Letter grading.

**M262C. Current Topics in Causal Modeling, Inference, and Reasoning. (4)** (Same as Statistics M241.) Lecture, four hours; outside study, eight hours. Prerequisite: one graduate probability or statistics course such as course 262A, Statistics 200B, or 202B. Review of Bayesian networks, causal Bayesian networks, and structural equations. Learning causal structures from data. Identifying causal effects. Covariate selection and instrumental variables in linear and nonparametric models. Simpson paradox and confounding control. Logic and algorithmization of counterfactuals. Probabilities of counterfactuals. Direct and indirect effects. Probabilities of causation. Identifying causes of events. Letter grading.

**262Z. Current Topics in Cognitive Systems. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 262A. Additional prerequisites for each offering announced in advance by department. Theory and implementation of systems that emulate or support human reasoning. Current literature and individual studies in artificial intelligence, knowledge-based systems, decision support systems, computational psychology, and heuristic programming theory. May be repeated for credit with topic change. Letter grading.

**263. Natural Language Processing. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Natural language processing (NLP) enables computers to understand and process human languages. NLP techniques have been widely used in many applications, including machine translation, question answering, machine summarization, and information extraction. Study of fundamental elements and recent trends in NLP. Students gain ability to apply NLP techniques in text-orientated applications, understand machine learning and algorithms used in NLP, and propose new approaches to solve NLP problems. Letter grading.

**263A. Language and Thought. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 130 or 131 or 161. Introduction to natural language processing (NLP), with emphasis on semantics. Presentation of process models for variety of tasks, including question answering, paraphrasing, machine translation, word-sense disambiguation, narrative and editorial comprehension. Examination of both symbolic and statistical approaches to language processing and acquisition. Letter grading.

**263C. Animats-Based Modeling. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 130 or 131 or 161. Animats are mobile/sensing animal-like software agents embedded in simulated dynamic environments. Emphasis on modeling: goal-oriented behavior via neurocontrollers, adaptation via reinforcement learning, evolutionary programming. Animat-based tasks include foraging, mate finding, predation, navigation, predator avoidance, cooperative nest construction, communication, and parenting. Letter grading.

**264A. Automated Reasoning: Theory and Applications. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisite: course 161. Introduction to theory and practice of automated reasoning using propositional and first-order logic. Topics include syntax and semantics of formal logic; algorithms for logical reasoning, including satisfiability and entailment; syntactic and semantic restrictions on knowledge bases; effect of these restrictions on expressiveness, compactness, and computational tractability; applications of automated reasoning to diagnosis, planning, design, formal verification, and reliability analysis. Letter grading.

**265A. Machine Learning. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 263A, 264A. Introduction to machine learning. Learning by analogy, inductive learning, modeling creativity, learning by experience, role of episodic memory organization in learning. Examination of BACON, AM, Eurisko, HACKER, teachable production systems. Failure-driven learning. Letter grading.

**M266A. Statistical Modeling and Learning in Vision and Cognition. (4)** (Same as Statistics M232A.) Lecture, three hours. Preparation: basic statistics, linear algebra (matrix analysis), computer vision. Computer vision and pattern recognition. Study of four types of statistical models for modeling visual patterns: descriptive, causal Markov, generative (hidden Markov), and discriminative. Comparison of principles and algorithms for these models; presentation of unifying picture. Introduction of minimax entropy and EM-type and stochastic algorithms for learning. S/U or letter grading.

**M266B. Statistical Computing and Inference in Vision and Cognition. (4)** (Same as Statistics M232B.) Lecture, three hours. Preparation: basic statistics, linear algebra (matrix analysis), computer vision. Introduction to broad range of algorithms for statistical inference and learning that could be used in vision, pattern recognition, speech, bioinformatics, data mining. Topics include Markov chain Monte Carlo computing, sequential Monte Carlo methods, belief propagation, partial differential equations. S/U or letter grading.

**267A. Probabilistic Programming and Relational Learning. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Introduction to computational models of probability and statistical models of relational data. Study of relational representations such as probabilistic databases, relational graphical models, and Markov logic networks, as well as various probabilistic programming languages. Covers their syntax and semantics, probabilistic inference problems, parameter, and structure learning algorithms, and theoretical properties of representation and inference. Expressive statistical modeling, how to formalize and reason about complex statistical assumptions and encode knowledge in machine learning models. Survey of key applications in natural language processing, graph mining, computer vision, and computational biology. Letter grading.

**M268. Machine Perception. (4)** (Same as Electrical and Computer Engineering M206.) Lecture, four hours; discussion, two hours; outside study, six hours. Designed for graduate students. Computational aspects of processing visual and other sensory information. Unified treatment of early vision in man and machine. Integration of symbolic and iconic representations in process of image segmentation. Computing multimodal sensory information by neural-net architectures. Letter grading.

**268S. Seminar: Computational Neuroscience. (2)** Seminar, two hours; outside study, four hours. Designed for students undertaking thesis research. Discussion of advanced topics and current research in computational neuroscience. Neural networks and connectionism as paradigm for parallel and concurrent computation in application to problems of perception, vision, multimodal sensory integration, and robotics. May be repeated for credit. S/U grading.

**269. Seminar: Current Topics in Artificial Intelligence. (4)** Seminar, to be arranged. Review of current literature and research practicum in area of artificial intelligence in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. May be repeated for credit with topic change. Letter grading.

**C274C. Computer Animation. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisite: course 174A. Introduction to computer animation, including basic principles of character modeling, forward and inverse kinematics, forward and inverse dynamics, motion capture animation techniques, physics-based animation of particles and systems, and motor control. Concurrently scheduled with course C174C. Letter grading.

**275. Artificial Life for Computer Graphics and Vision. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 174A. Recommended: course 161. Investigation of important role that concepts from artificial life, emerging discipline that spans computational and biological sciences, can play in construction of advanced computer graphics and vision models for virtual reality, animation, interactive games, active vision, visual sensor networks, medical image analysis, etc. Focus on comprehensive models that can realistically emulate variety of living things (plants and animals) from lower animals to humans. Exposure to effective computational modeling of natural phenomena of life and their incorporation into sophisticated, self-animating graphical entities. Specific topics include modeling plants using L-systems, biomechanical simulation and control, behavioral animation, reinforcement and neural-network learning of locomotion, cognitive modeling, artificial animals and humans, human facial animation, and artificial evolution. Letter grading.

**M276A. Pattern Recognition and Machine Learning. (4)** (Same as Statistics M231A.) Lecture, three hours; discussion, one hour. Designed for graduate students. Fundamental concepts, theories, and algorithms for pattern recognition and machine learning that are used in computer vision, image processing, speech recognition, data mining, statistics, and computational biology. Topics include Bayesian decision theory, parametric and nonparametric learning, clustering, complexity (VC-dimension, MDL, AIC), PCA/ICA/TCA, MDS, SVM, boosting. S/U or letter grading.

**280A-280CO-280D-280DA-280DP-280G-280G. Algorithms. (4 each)** Lecture, four hours; outside study, eight hours. Requisite: course 180. Additional requisites for each offering announced in advance by department. Selections from design, analysis, optimization, and implementation of algorithms; computational complexity and general theory of algorithms; algorithms for particular application areas. Subtitles of some current sections: Principles of Design and Analysis (280A); Distributed Algorithms (280D); Graphs and Networks (280G). May be repeated for credit with consent of instructor and topic change. Letter grading.

**280AP. Approximation Algorithms. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 180. Background in discrete mathematics helpful. Theoretically sound techniques for dealing with NP-Hard problems. Inability to solve these problems efficiently means algorithmic techniques are based on approximation—finding solution that is near to best possible in efficient running time. Coverage of approximation techniques for number of different problems, with algorithm design techniques that include primal-dual method, linear program rounding, greedy algorithms, and local search. Letter grading.

**281A. Computability and Complexity. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 181 or compatible background. Concepts fundamental to study of discrete information systems and theory of computing, with emphasis on regular sets of strings, Turing-recognizable (recursively enumerable) sets, closure properties, machine characterizations, nondeterminisms, decidability, unsolvable problems, easy and hard problems, PTIME/NPTIME. Letter grading.

**M282A. Cryptography. (4)** (Same as Mathematics M209A.) Lecture, four hours; outside study, eight hours. Introduction to theory of cryptography, stressing rigorous definitions and proofs of security. Topics include notions of hardness, one-way functions, hard-core bits, pseudorandom generators, pseudorandom functions and pseudorandom permutations, semantic security, public-key and private-key encryption, secret-sharing, message authentication, digital signatures, interactive proofs, zero-knowledge proofs, collision-resistant hash functions, commitment protocols, key-agreement, contract signing, and two-party secure computation with static security. Letter grading.

**M282B. Cryptographic Protocols. (4)** (Same as Mathematics M209B.) Lecture, four hours; outside study, eight hours. Requisite: course M282A. Consideration of advanced cryptographic protocol design and analysis. Topics include noninteractive zero-

knowledge proofs; zero-knowledge arguments; concurrent and non-black-box zero-knowledge; IP=PSPACE proof, stronger notions of security for public-key encryption, including chosen-ciphertext security; secure multiparty computation; dealing with dynamic adversary; nonmalleability and composability of secure protocols; software protection; threshold cryptography; identity-based cryptography; private information retrieval; protection against man-in-middle attacks; voting protocols; identification protocols; digital cash schemes; lower bounds on use of cryptographic primitives, software obfuscation. May be repeated for credit with topic change. Letter grading.

**M283A-M283B. Topics in Applied Number Theory. (4-4)** (Same as Mathematics M208A-M208B.) Lecture, three hours. Basic number theory, including congruences and prime numbers. Cryptography: public-key and discrete log cryptosystems. Attacks on cryptosystems. Primality testing and factorization methods. Elliptic curve methods. Topics from coding theory: Hamming codes, cyclic codes, Gilbert/Varshamov bounds, Shannon theorem. S/U or letter grading.

**284A-284C-284P. Topics in Automata and Languages. (4-4-4)** Lecture, four hours; outside study, eight hours. Requisite: course 181. Additional requisites for each offering announced in advance by department. Selections from families of formal languages, grammars, machines, operators; pushdown automata, context-free languages and their generalizations, parsing; multidimensional grammars, developmental systems; machine-based complexity. Subtitles of some current and planned sections: Context-Free Languages (284A), Parsing Algorithms (284P). May be repeated for credit with consent of instructor and topic change. Letter grading.

**285CC. Communication Complexity. (4)** Lecture, four hours; outside study, eight hours. Limited to graduate students. Mathematical maturity strongly encouraged. Introduction to communication complexity with coverage of fundamentals, key classic theorems, and current research directions. Consider function  $f$  whose arguments are distributed among several parties, making it impossible for any one party to compute  $f$  in isolation. Communication complexity theory studies how many bits of communication are needed to evaluate  $f$ . Pioneered in 1979 by Turing award winner Andrew Yao, communication complexity has become central area of theoretical computer science with deep open questions, beautiful mathematics, and vast array of applications. Letter grading.

**CM286. Computational Systems Biology: Modeling and Simulation of Biological Systems. (5)** (Same as Bioengineering CM286.) Lecture, four hours; laboratory, two hours; discussion, one hour. Requisites: Life Sciences 30A, 30B, Mathematics 32A or M32T, 33A, and 33B; or Mathematics 31A, 31B, 32A or M32T, 33A, and 33B. Dynamic biosystem modeling and computer simulation methods for studying biological/ biomedical processes and systems at multiple levels of organization. Intermediate linear and nonlinear control system, multicompartmental, epidemiological, pharmacokinetic, and other biomodeling methods applied to life sciences problems at molecular, cellular, organ, and population levels. Both theory- and data-driven modeling, with focus on translating biomodeling goals and data into dynamical mathematical models, and implementing them for simulation, quantification, and analysis. Numerical simulation, optimization, and parameter identifiability and search algorithms, with model discrimination and analysis and software exercises in PC laboratory assignments. Concurrently scheduled with course CM186. Letter grading.

**CM287. Research Communication in Computational and Systems Biology. (4)** (Same as Bioengineering CM287.) Lecture, four hours; outside study, eight hours. Requisites: course M182 or CM286 or Computational and Systems Biology M150; and research experience (course 199, Bioengineering 199, Computational and Systems Biology 199, or equivalent). Closely directed, interactive, and real research experience in active quantitative systems biology research laboratory. Direction on how to focus on topics of current interest in scientific community, appropriate to student interests and capabilities. Critiques of oral

presentations and written progress reports explain how to proceed with search for research results. Major emphasis on effective research reporting, both oral and written. Concurrently scheduled with course CM187. Letter grading.

**288S. Seminar: Theoretical Computer Science. (2)** Seminar, two hours; outside study, six hours. Requisites: courses 280A, 281A. Intended for students undertaking thesis research. Discussion of advanced topics and current research in such areas as algorithms and complexity models for parallel and concurrent computation, and formal language and automata theory. May be repeated for credit. S/U grading.

**289A. Current Topics in Computer Theory. (4)** Lecture, four hours; outside study, eight hours. Review of current literature in area of computer theory in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. Letter grading.

**289CO. Current Topics in Computer Theory: Complexity Theory. (4)** Lecture, four hours; outside study, eight hours. Diagonalization, polynomial-time hierarchy, PCP theorem, randomness and de-randomization, circuit complexity, attempts and limitations to proving P does not equal NP, average-case complexity, one-way functions, hardness amplification. Problem sets and presentation of previous and original research related to course topics. Letter grading.

**289L. Current Topics in Computer Theory. (4)** Lecture, four hours; outside study, eight hours. Review of current literature in area of computer theory in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. Letter grading.

**289OA. Current Topics in Computer Theory: Online Algorithms. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 180. Introduction to decision making under uncertainty and competitive analysis. Review of current research in online algorithms for problems arising in many areas, such as data and memory management, searching and navigating in unknown terrains, and server systems. Letter grading.

**289P. Current Topics in Computer Theory. (4)** Lecture, four hours; outside study, eight hours. Review of current literature in area of computer theory in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. Letter grading.

**289RA. Current Topics in Computer Theory: Randomized Algorithms. (4)** Lecture, four hours; outside study, eight hours. Basic concepts and design techniques for randomized algorithms, such as probability theory, Markov chains, random walks, and probabilistic method. Applications to randomized algorithms in data structures, graph theory, computational geometry, number theory, and parallel and distributed systems. Letter grading.

**289SG. Current Topics in Computer Theory. (4)** Lecture, four hours; outside study, eight hours. Review of current literature in area of computer theory in which instructor has developed special proficiency as consequence of research interests. Students report on selected topics. Letter grading.

**M296A. Advanced Modeling Methodology for Dynamic Biomedical Systems. (4)** (Same as Bioengineering M296A and Medicine M270C.) Lecture, four hours; outside study, eight hours. Requisite: Electrical Engineering 141 or 142 or Mathematics 115A or Mechanical and Aerospace Engineering 171A. Development of dynamic systems modeling methodology for physiological, biomedical, pharmacological, chemical, and related systems. Control system, multicompartmental, noncompartmental, and input/output models, linear and nonlinear. Emphasis on model applications, limitations, and relevance in biomedical sciences and other limited data environments. Problem solving in PC laboratory. Letter grading.

**M296B. Optimal Parameter Estimation and Experiment Design for Biomedical Systems. (4)** (Same as Bioengineering M296B, Biomathematics M270, and Medicine M270D.) Lecture, four hours; outside study, eight hours. Requisite: course CM286 or M296A or Biomathematics 220. Estimation methodology and model parameter estimation algorithms for fitting dy-



dynamic system models to biomedical data. Model discrimination methods. Theory and algorithms for designing optimal experiments for developing and quantifying models, with special focus on optimal sampling schedule design for kinetic models. Exploration of PC software for model building and optimal experiment design via applications in physiology and pharmacology. Letter grading.

**M296C. Advanced Topics and Research in Biomedical Systems Modeling and Computing. (4)** (Same as Bioengineering M296C and Medicine M270E.) Lecture, four hours; outside study, eight hours. Requisite: course M296B. Research techniques and experience on special topics involving models, modeling methods, and model/computing in biological and medical sciences. Review and critique of literature. Research problem searching and formulation. Approaches to solutions. Individual MS- and PhD-level project training. Letter grading.

**M296D. Introduction to Computational Cardiology. (4)** (Same as Bioengineering M296D.) Lecture, four hours; outside study, eight hours. Requisite: course CM186. Introduction to mathematical modeling and computer simulation of cardiac electrophysiological process. Ionic models of action potential (AP). Theory of AP propagation in one-dimensional and two-dimensional cardiac tissue. Simulation on sequential and parallel supercomputers, choice of numerical algorithms, to optimize accuracy and to provide computational stability. Letter grading.

**298. Research Seminar: Computer Science. (2 to 4)** Seminar, two to four hours; outside study, four to eight hours. Designed for graduate computer science students. Discussion of advanced topics and current research in algorithmic processes that describe and transform information: theory, analysis, design, efficiency, implementation, and application. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Assistant Training Seminar. (2)** Seminar, four hours; outside study, two hours. Limited to graduate Computer Science Department students. Seminar on being effective teaching assistant, including preparation, classroom presentation, encouraging interactive discussion, active learning, office hours, review sessions, making up and grading assignments and exam questions, proctoring exams, and grading. S/U grading.

**495B. Teaching with Technology. (2)** Seminar, two hours; outside study, four hours. Limited to graduate Computer Science Department teaching assistants. Seminar for teaching assistants covering how technology can be used to aid instruction in and out of classroom. S/U grading.

**497D-497E. Field Projects in Computer Science. (4-4)** Fieldwork, to be arranged. Students are divided into teams led by instructor; each team is assigned one external company or organization that they investigate as candidate for possible computerization, submitting team report of their findings and recommendations. In Progress (497D) and S/U or letter (497E) grading.

**596. Directed Individual or Tutorial Studies. (1 to 8)** Tutorial, to be arranged. Limited to graduate computer science students. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for MS Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. Limited to graduate computer science students. Reading and preparation for MS comprehensive examination. S/U grading.

**597B. Preparation for PhD Preliminary Examinations. (2 to 16)** Tutorial, to be arranged. Limited to graduate computer science students. Preparation for PhD preliminary examinations. S/U grading.

**597C. Preparation for PhD Oral Qualifying Examination. (2 to 16)** Tutorial, to be arranged. Limited to graduate computer science students. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 12)** Tutorial, to be arranged. Limited to graduate computer science students. Supervised independent research for MS candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Limited to graduate computer science students. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. S/U grading.

## CONSERVATION OF CULTURAL HERITAGE

*Interdepartmental Program  
College of Letters and Science*

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Glenn Wharton, PhD, *Chair*

### Faculty Committee

Kathlyn (Kara) M. Cooney, PhD (*Near Eastern Languages and Cultures*)

Johanna R. Drucker, PhD (*Design|Media Arts, Information Studies*)

Justin P. Dunnivant, PhD (*Anthropology*)

H. Pirouz Kavehpour, PhD (*Bioengineering, Mechanical and Aerospace Engineering*)

Michael Osman, PhD (*Architecture and Urban Design*)

M. Rahim Shayegan, PhD (*Near Eastern Languages and Cultures*)

Lothar von Falkenhausen, PhD (*Art History*)

Glenn Wharton, PhD (*Art History*)

### Overview

The UCLA/Getty Conservation interdepartmental program provides an excellent platform for education and research in the conservation of material culture. It supports discovery and innovation through research that transcends the boundaries of traditional disciplines. It uniquely trains cultural property professionals in the best practices and methods of cultural heritage conservation through various pedagogical approaches including, but not limited to, core teaching and learning, independent research, and laboratory experience in museums and in the field. Finally, it positively impacts the community by engaging with a more informed public that would seek to protect cultural heritage from imminent threats.

### Graduate Study

The program offers two degree options: a practice-focused three-year Master of Arts (MA) degree in Conservation of Cultural Heritage and a research-focused Doctor of Philosophy (PhD)

degree in Conservation of Material Culture. Though the two degrees share a scholarly approach to the discipline and strong commitment to the advancement of the conservation profession, they provide distinctive competencies, preparing students for different careers in the cultural heritage section and beyond.

The aim of the program is to train the next generation of multidisciplinary researchers, heritage practitioners, and cross-cultural leaders in the theoretical and experimental developments and policy of conservation and sustainable preservation of material culture. Through this training, graduates will bring innovative, cutting-edge methods and holistic approaches to the conservation profession. More specifically, these degree programs aim to provide students with integrated, comprehensive curricula to foster the next generation of conservation professionals and leaders with strong research, theoretical, and applied qualitative and quantitative skills; rigorous training in conservation theory, praxis, ethics, policy, and research; substantive research training in a specific domain of application in conservation; and experiential learning and mentoring in communication, scientific writing skills, and the ability to work in multidisciplinary teams.

The objectives of the program are to provide students with a solid educational base and practical training in the conservation of both archaeological and ethnographic materials, as well as an appreciation of the often complex issues related to significance, access, and use of these materials that can be very different from the criteria for conservation of fine art or historical materials. The special focus of the program and its interdisciplinary curriculum serves the archaeological, scientific, native, and cultural minority communities alike and offers a nexus at the boundaries of conservation, archaeology, ethnography, the natural sciences, and engineering.

The partnership between UCLA and the Getty in establishing the program ensures that both a major research university and an institution with a principal mandate for conservation of world cultural heritage are working to create rich and vibrant conservation training opportunities. The program helps students develop working relationships with a wide array of colleagues in the Getty Conservation Institute, the J. Paul Getty Museum, other local museums and cultural organizations, and different departments and programs at UCLA.

## Graduate Majors

### Conservation of Cultural Heritage MA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Conservation of Material Culture MS, PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Conservation of Cultural Heritage

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**C120. Field Methods in Archaeological Conservation: Readiness, Response, and Recovery. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials C120.) Laboratory, four hours. Overview of risks (direct and indirect) and materials vulnerability of in situ cultural heritage and movable archaeological materials in emergency situations (rescue excavations, disasters, conflicts), with emphasis on readiness, first aid response, and recovery. Readiness focuses on preparedness and preventive measures, including reburials, shelters, rescue excavations, and documentation as well as developing inventories and awareness campaigns. First aid response covers development of on-site emergency risk assessments to evaluate damage and putting triage theory into practice, salvage rescue operations, emergency temporary in situ stabilization and protection (using locally available materials), and training. Recovery is based on documentation, lifting methods, handling, transportation, and storage. Emphasis on finding practical solutions to prevent and mitigate damage and to recover and safeguard archaeological artifacts. Concurrently scheduled with course C220. Letter grading.

**C142. Managing Collections for Museums, Libraries, and Archives. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials C142.) Lecture, two hours; activity, two hours. How conservators work together with curators, collections managers, mount makers, designers, and registrars to permit collections to be both accessed and preserved. Concurrently scheduled with course C242. Letter grading.

### Graduate Courses

**210. Cultural Materials Science II: Characterization Methods in Conservation of Materials. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 210.) Lecture, four hours. Preparation: general chemistry, inorganic and organic chemistry, materials science. Principles and methods of materials characterization in conservation: optical and electron microscopy, X-ray and electron spectroscopy, X-ray diffraction, infrared spectroscopy, reflectance spectroscopy and multispectral imaging spectros-

copy, chromatography, design of archaeological and ethnographic materials characterization procedures. Letter grading.

**210L. Cultural Materials Science Laboratory: Technical Study. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 210L.) Laboratory, four hours. Requisites: course M215 (or 216) and one course from 260 through 264. Corequisite: course 210. Research-based laboratory through object-based problem-solving approach in conservation materials science. Experimental techniques, characterization, and analysis of archaeological and ethnographic materials (using materials science principles and reverse engineering processes) to determine technological features, defects, and products of alteration. Hands-on experience with noninvasive imaging and spectroscopic techniques, sampling and sample preparation methods, analysis of microsamples. Letter grading.

**211. Science Fundamentals in Conservation of Materials. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 211.) Lecture, three hours. Introduction to important scientific parameters in conservation of materials that are of great importance for both fundamental science and practical applications. Students gain better understanding of intrinsic properties of materials, mechanisms of deterioration, and conservation treatments. General chemistry, physics, and physical chemistry (atomic structure bonding, etc.), fluid transfer in porous materials, diffusion, interfaces, surface tension, wetting, adsorption, adhesion, dissolution and crystallization, mechanical properties (properties/characterization), phase transformations (glass, metals, polymers). Letter grading.

**M215. Cultural Materials Science I: Analytical Imaging and Documentation in Conservation of Materials. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials M215.) (Same as Materials Science M213.) Lecture, two hours; laboratory, two hours. Basic and advanced techniques on digital photography, computer-aided recording tools, and scientific imaging to determine and document condition (defects) and technological features of archaeological and ethnographic materials. Development of basic theoretical knowledge on imaging and photonics technology and practical skills on conservation photo-documentation, analytical (forensic) photography, and advanced new imaging technologies. Letter grading.

**216. Science of Conservation Materials and Methods. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 216.) Lecture, two hours; laboratory, two hours. Recommended requisite: laboratory safety fundamental concepts course by Office of Environment, Health, and Safety. Introduction to physical, chemical, and mechanical properties of conservation materials (employed for preservation of archaeological and cultural materials) and their aging characteristics. Science and application methods of traditional organic and inorganic systems and introduction of novel technology based on biomineralization processes and nanostructured materials. Letter grading.

**C220. Field Methods in Archaeological Conservation: Readiness, Response, and Recovery. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials C220.) Laboratory, four hours. Overview of risks (direct and indirect) and materials vulnerability of in situ cultural heritage and movable archaeological materials in emergency situations (rescue excavations, disasters, conflicts), with emphasis on readiness, first aid response, and recovery. Readiness focuses on preparedness and preventive measures, including reburials, shelters, rescue excavations, and documentation as well as developing inventories and awareness campaigns. First aid response covers development of on-site emergency risk assessments to evaluate damage and putting triage theory into practice, salvage rescue operations, emergency temporary in situ stabilization and protection (using locally available materials), and training. Recovery is based on documentation, lifting methods, handling, transportation, and storage. Emphasis on finding practical solu-

tions to prevent and mitigate damage and to recover and safeguard archaeological artifacts. Concurrently scheduled with course C120. Letter grading.

**M221. Principles, Practice, and Ethics in Conservation of Cultural Heritage. (4)** (Formerly numbered 221.) (Same as Art History M272B.) Seminar, three hours. Introduction to preservation of cultural heritage materials, including what should be preserved and why, as well as who should be involved in decision-making process. Use of several examples of issues and problems involved in preservation of works of art, from L.A. Murals to Sistine Chapel, from ancient wall paintings to Statue of Liberty. Discussion of issues of preservation and restoration of these cultural heritage materials both in museum and outdoor environment contexts. Materials and techniques used to make cultural heritage materials, in relation to preservation efforts needed to prevent decay and loss. Introduction to examples of conservation issues related to sites, buildings, monuments, and collections. Ethical and contextual aspects with reference to changing values in conservation of cultural materials, illustrating how cultural materials may have been treated differently according to those values. S/U or letter grading.

**222. Conservation and Community. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 222.) Laboratory, four hours. Designed for graduate conservation students. Introduction to work as conservators with indigenous repositories housing cultural collections. Students learn different models for tribal museums and cultural centers, and importance of material selection and properties in baskets they are treating. Letter grading.

**224. Issues in Preservation and Management of Archaeological and Cultural Sites. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 224.) Seminar, three hours. Designed to offer practical model of preservation and management planning for heritage sites that reflects real case-study scenarios. Adaptive management planning following iterative processes for sustainable heritage preservation addressing threats and challenges such as climate change and global warming, conflicts, and neglect. Consideration of significance and value of heritage sites and role of stakeholders. Investigation of methods of evaluation of physical condition and development of risk assessments to address physical risks in milieu of site preservation management, including visitors' organization, urban development, socioeconomic growth, and tourist development. Letter grading.

**230. Conservation Laboratory: Ceramics, Glass, Glazes. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 230.) Laboratory, four hours. Requisite: course 260. Recommended: course M215. Hands-on study in deterioration and conservation of ceramics and glass. Evaluation of use of conservation materials in joining, gap-filling, and restoration of ceramics and experience in their use provided. Letter grading.

**231. Conservation Laboratory: Stone and Adobe. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 231.) Laboratory, four hours. Enforced requisite: course 261. Research-based laboratory on conservation of stone and adobe. Conservation issues on cleaning, consolidation, protection, and structural instability. Characterization, diagnostic assessment, and development of conservation treatment proposals. Testing of materials. Letter grading.

**232. Conservation Laboratory: Organic Materials I. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 232.) Laboratory, four hours. Enforced requisite: course 262. Designed for graduate conservation students. How to recognize characteristic deterioration problems found in organic materials from archaeological and ethnographic contexts and introduction to typical treatments used historically and currently for these materials. Materials focus on wood, bark and barkcloth, paper, and plastics and rubber. Letter grading.

**234. Conservation Laboratory: Metals I. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 234.) Laboratory, four hours. Enforced requisite: course 263. Recommended:

course 215. Recommended corequisite: course M210. Designed for graduate conservation students. Hands-on work to study deterioration and conservation of metallic artifacts and composite objects containing metals (copper and copper alloys, and silver). Corrosion of ancient metals and their deterioration processes, conservation, problems in stability, issues with composite objects, their deterioration and stabilization, cleaning, joining, and gap-filling. Letter grading.

**238. Conservation Laboratory: Organic Materials II. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 238.) Laboratory, four hours. Enforced requisite: course 262. Designed for graduate conservation students. Typical treatments used historically and currently for deterioration problems found in organic materials from archaeological and ethnographic contexts. Materials include plant and animal fibers, feathers, and quills. Letter grading.

**239. Conservation Laboratory: Metals II. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 239.) Laboratory, four hours; outside study, eight hours. Requisites: courses 234, 263. Recommended: courses M210, M215. Treatment of conservation problems of metallic artifacts made of iron, steel, cast iron, gold, zinc, and aluminum that have some importance in ethnographic objects. Practical work on metallic artifacts. Letter grading.

**M240. Environmental Protection of Collections for Museums, Libraries, and Archives. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials M240.) (Same as Information Studies M238.) Lecture, two hours; laboratory, two hours. Requisite: Information Studies 432. Required of graduate conservation students. Review of environmental and biological agents of deterioration, including light, temperature, relative humidity, pollution, insects, and fungi. Emphasis on monitoring to identify agents and understanding of materials sensitivities, along with protective measures for collections. Letter grading.

**241. Conservation Laboratory: Organic Materials III. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 241.) Laboratory, four hours. Enforced requisites: courses 232, 238, 262. Designed for graduate conservation students. Treatment of organic materials from archaeological and ethnographic contexts and introduction to typical treatments used historically and currently for these materials. Materials include wood, gourd, paper, bark, and barkcloth. Letter grading.

**C242. Managing Collections for Museums, Libraries, and Archives. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials C242.) Lecture, two hours; activity, two hours. Designed for graduate conservation students. How conservators work together with curators, collections managers, mount makers, designers, and registrars to permit collections to be both accessed and preserved. Concurrently scheduled with course C142. Letter grading.

**M244. Collection Management for Archives, Libraries, and Museums. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials M244.) (Same as Information Studies M244.) Lecture, two hours; fieldwork, two hours. How conservators work together with curators, collections managers, mount makers, designers, and registrars to permit collections to be both accessed and preserved. Letter grading.

**250. Conservation Laboratory: Rock Art, Wall Paintings, and Mosaics. (4)** (Formerly numbered M250.) Laboratory, four hours. Requisites: courses 210, 210L, 264. Recommended: course M215. Research-based laboratory on conservation of rock art, wall paintings (archaeological and modern composites on cements), mosaics, and decorated architectural surfaces. Experimental techniques and analysis of materials (using materials science and reverse engineering processes) for characterization of technology, constituent materials, and alteration products; development of conservation treatment proposals, testing of conservation products, and methods and conservation treatment. Letter grading.

**251. Contemporary Development in Conservation. (4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 251.) Seminar, two hours. Designed for graduate conservation students. Seminar series of invited international experts in archaeological and ethnographic conservation, who address contemporary issues in conservation of cultural materials. Letter grading.

**260. Structure, Properties, and Deterioration of Materials: Ceramics, Glass, Glazes. (2)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 260.) Lecture, three hours. General introduction to different types of ancient ceramic and glass materials. Relationship between composition (chemistry), structure (crystals, molecular arrangement, and microstructure), and properties of ceramics, glass, glazes. Nature of frit and faience deterioration explained using basic concepts from physics and chemistry. Chemical, optical, and structural properties. Deterioration phenomena, defects, and products of alteration of ceramics and vitreous artifacts. Hands-on examination of variety of samples and artifacts. Letter grading.

**261. Structure, Properties, and Deterioration of Materials: Stone and Adobe. (2)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 261.) Lecture, three hours. Introduction to igneous, sedimentary, and metamorphic rocks (geological context, mineralogical composition, macrostructure, and microstructure). Clay minerals: composition, structure, and properties. Rocks and stone: geographical distribution and occurrence, and usage by ancient cultures. Adobe: clay-based manmade materials. Mechanical and petrophysical properties of stone and adobe. Relationships between composition/structure and properties. Intrinsic and structural stability, resistance to weathering. Deterioration mechanisms and factors (physical, chemical, and biochemical). Letter grading.

**262. Structure, Properties, and Deterioration of Materials: Organics I. (2)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 262.) Lecture, one hour; laboratory, one hour. General introduction to different types of organic materials used to produce ethnographic and archaeological cultural heritage. Relationship between material composition, processing, and properties of natural and manufactured materials using basic concepts from biology and chemistry. Structural stability and deterioration phenomena of these materials as found in cultural collections. Letter grading.

**263. Structure, Properties, and Deterioration of Materials: Metals. (2)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 263.) Lecture, three hours. General introduction to different types of ancient and ethnographic metals. Relationship between composition (chemistry), structure (crystals, molecular arrangement, and microstructure), and properties of metals explained using basic concepts from physics and chemistry. Chemical, optical, and structural properties. Deterioration phenomena, defects, and products of alteration of metallic artifacts. Hands-on examination of variety of samples and artifacts. Letter grading.

**264. Structure, Properties, and Deterioration of Materials: Rock Art, Wall Paintings, Mosaics. (2)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 264.) Lecture, three hours. Recommended preparation: basic knowledge of general chemistry and materials science. Introduction to materials and techniques of rock art, wall paintings (including painted surfaces on cement and composite decorative architectural surfaces), and mosaics. Archaeological and ethnographic context, techniques, and materials. Pigments, colorants, and binding media. Chemical, optical, and structural properties. Relationship between composition (chemistry), structure (crystals, molecular arrangement, and microstructure), and properties explained using basic concepts from physics and chemistry. Intrinsic attributes and resistance to weathering. Causes, sources, and mechanisms of deterioration (physical, chemical, and biochemical). Letter grading.

**265. Structure, Properties, and Deterioration of Materials: Organics II. (2)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 265.) Lecture, one hour; laboratory, one hour. General introduction to plant-based organic materials used to produce ethnographic and archaeological cultural heritage: wood, bark, paper, bast fibers, grasses. Relationship between materials, processing, and properties of natural materials using basic concepts from biology and chemistry. Structural stability and deterioration phenomena of these materials as found in cultural collections. Letter grading.

**288. Special Topics in Conservation. (2 or 4)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 298.) Lecture, three hours; laboratory, one hour. Special topics on theoretical and practical subjects in conservation such as focused materials studies, new conservation approaches, advanced scientific applications, or current special work by core program faculty or visiting scholars. If appropriate, field trips may be arranged. May be repeated for credit with topic or instructor change. Letter grading.

**290. Conservation Program Internship. (6 or 12)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 498.) Fieldwork, 20 or 40 hours. Open only to Conservation MA program graduate students who have completed first year of conservation program coursework. Supervised conservation-related professional and research-based training in field through participation in field projects (i.e., archaeological excavation, site management, indigenous site preservation and consultation), as well as in museum, library, archive, and collections conservation and science departments, regional and national laboratories, or at other similar venues. All intern placements must be preapproved by program and developed in collaboration between student, faculty members, and host institution/agency. S/U grading.

**596. Directed Individual Studies. (2 to 6)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 596.) Tutorial, seven hours. Limited to graduate conservation students. Individual guided studies that may include conservation research and/or surveys or treatment projects carried out at Villa laboratories or at local collection or analytical facility. To be arranged with program faculty members, and supervision may be shared between faculty members and outside specialists. Letter grading.

**597. Preparation for PhD Qualifying Examination. (2 to 12)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 597.) Tutorial, to be arranged. May not be applied toward PhD course requirement. May be repeated for credit. S/U grading.

**598. MA Thesis Preparation. (2 to 12)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 598.) Tutorial, two hours; laboratory, one hour. Development of research paper on conservation topic or treatment-based investigation that can be theoretical in scope or practically oriented. Letter grading.

**599. PhD Dissertation and Preparation. (2 to 12)** (Formerly numbered Conservation of Archaeological and Ethnographic Materials 599.) Tutorial, to be arranged. May not be applied toward PhD course requirement. May be repeated for credit. S/U grading.



## DENTISTRY

School of Dentistry

A0-111 School of Dentistry  
Box 951762  
Los Angeles, CA 90095-1762

Dentistry

310-825-9789

Paul H. Krebsbach, DDS, PhD, *Dean*

### Overview

The UCLA School of Dentistry offers courses for general campus students. Dentistry 199 and 199H are individual special studies courses for UCLA undergraduates with definitive research interests and abilities applicable to dentistry. The subject areas include oral biology, clinical research, and dental health policy. Interested students should contact the associate dean of research at 310-825-6401 to obtain the names and areas of interest of participating School of Dentistry faculty members.

Dentistry faculty information is available from the department.

## Dentistry

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**199. Individual Special Studies. (2 to 8)** Tutorial, to be arranged. Studies in dentistry and related subject areas appropriate for training of particular students, with required reading assignments or laboratory work leading to final oral or written examination. May be repeated for maximum of 16 units. P/NP or letter grading.

**199H. Individual Special Studies (Honors). (2 to 8)** Tutorial, to be arranged. Studies in dentistry and related subject areas appropriate for training of particular students, with required paper submitted at end of course in addition to final examination (paper to be of publication quality as judged by course mentor). May be taken for maximum of 8 units. P/NP or letter grading.

### Graduate Course

**441C. Introduction to Healthcare. (2)** Lecture, two hours. Description and analysis of American dental care system from historical, ethical, and legal perspectives. Assessment of how dentistry fits within general provision of healthcare services in America, with comparisons to dental care provisions in other countries. S/U grading.

## DESIGN|MEDIA ARTS

School of the Arts and Architecture

2275 Broad Art Center  
Box 951456  
Los Angeles, CA 90095-1456

Design|Media Arts

310-825-9007

Department e-mail

Lauren L. McCarthy, MFA, *Chair*

### Faculty Roster

#### Professors

Johanna R. Drucker, PhD (*Martin and Bernard Breslauer Professor of Bibliography*)

Erkki I. Huhtamo, PhD

Peter B. Lunenfeld, PhD

Lauren L. McCarthy, MFA

Rebeca Méndez, MFA

Christian A. Moeller, Dip|ING

Casey E.B. Reas, MS

Eddo I. Stern, MFA

Victoria Vesna, MFA, PhD

#### Professors Emeriti

Rebecca Allen, MS

James W. Bassler, MA

Robert A. Israel, MFA

J. Bernard Kester, MA

Willem Henri Lucas, BA

Vasa V. Mihich

Jennifer J. Steinkamp, MFA

#### Associate Professor

Ramesh Srinivasan, PhD

#### Assistant Professors

Jenna B. Caravello, MFA

Chandler B. McWilliams, MFA, MA

Daniel S. Snelson, PhD

### Overview

The Department of Design|Media Arts offers the Bachelor of Arts (BA) and Master of Fine Arts (MFA) degrees. The BA degree focuses on visual communication design, with emphasis on digital media. The MFA degree focuses on media arts. These uniquely challenging programs invite students to balance aesthetic sensibility with logical reasoning, formal theories with practical application, and contemporary thought with historical perspective.

The Department of Design|Media Arts reserves the right to hold for exhibition purposes examples of any work done in classes and to retain for the permanent collection of its galleries such examples as may be selected.

### Facilities

Facilities and equipment in the department enable students to create work in two, three, and four dimensions. They expand opportunities for students to develop interactive media applications in a networked environment and advanced computer graphics. The department equipment includes computer laboratories with

high-end PC and Macintosh computers and relevant software for the creation of works for print, web, video, and other media, a fabrication laboratory with equipment ranging from table saws to three-dimensional printers to a CNC machine to create physical objects combined with electronics, and a print laboratory with high-quality printers.

## Undergraduate Major

### Design|Media Arts BA

The undergraduate program begins with the study of basic design elements and processes: form, color, drawing, letterforms and typography, motion, and interactivity. Historical perspectives and social issues are also introduced. At the upper-division level, studio courses explore current uses of interactive media and new directions in visual communication design, including the study of time and motion, as well as virtual form and space in computer-generated environments. Through a balance of courses in theory, criticism, and practice, students develop an understanding of design principles. Most courses are taught as studios of no more than 22 students, which encourages individual growth and fosters a sense of community within the department.

### Capstone Major

The Design|Media Arts major is a designated capstone major. Students are required to complete an advanced project of their own that entails full engagement with the design process. Through their capstone work, students demonstrate their capacities for research, ideation/concept development, creative and design direction, communication strategy, design, production/fabrication, and critical analysis. Capstone courses focus on career choice, and final projects are showcased at the spring senior show.

### Learning Outcomes

The Design|Media Arts major has the following learning outcomes:

- Deep understanding of the field through immersion
- Exploration and development of ideas through listening to and observation of patterns
- Definition of an event and its surroundings and mise-en-scène, and the ethos of the student's idea
- Development of the specifics of a design
- Conceptualization of how an idea reaches its audience, how and when it launches, and how it stays relevant and vibrant
- Designed specifics of each element of the visual vocabulary—from graphic elements to photography, videography, and illustrations—including definition of spatial, material, and auditory elements
- Thorough research of appropriate and relevant production methods
- Analysis, review, and critique of others' work

## Requirements

### Preparation for the Major

*Required:* Design|Media Arts 8, 10, 21, 22, 24, 25, 28.

### The Major

*Required:* Twelve upper-division courses: Design|Media Arts 101, 104; six courses selected from 152, 153, 154, 155, 156, 157, 158, 161, 163; three courses selected from 160, 171, 172, 173; and one capstone course: 159.

It is recommended that students have each term's program approved by the departmental adviser.

Consult the [Schedule of Classes](#) for courses limited to majors only.

## Graduate Major

### Design|Media Arts MFA

The three-year Master of Fine Arts (MFA) program fosters mature, professional-quality work utilizing the most current technologies in the field of media arts. The program focuses on developing an individual thesis project that incorporates in-depth research and theoretical exploration of a topic, culminating in a final exhibition of work.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Design|Media Arts

### Lower-Division Courses

**1. Graphic Design. (2)** Studio, 30 hours. Limited to high school students. Basic and advanced photography skills using digital cameras. Alteration/manipulation of photos using techniques from latest version of Adobe Photoshop. Uploading of images on Web or in print. Production of digital and print portfolio of student work. Field trips to surrounding West Los Angeles locales to shoot photos. May be repeated for credit without limitation. Offered only as part of Summer Institute. P/NP grading.

**2. Web Design. (2)** Studio, 30 hours. Limited to high school students. How Web design works: basic hand coding and creation of personalized homepages with Macromedia Director and Flash software. Photograph scanning and manipulation of images in Adobe Photoshop to incorporate student Web designs. Critique of various Web pages to analyze successful use of Web design and understand enormous potential of Internet. May be repeated for credit without limitation. Offered only as part of Summer Institute. P/NP grading.

**3. Game Design. (4)** Studio, 30 hours. Limited to high school students. Development of fundamental skills to create games and game art that express personal and subjective approach to game making. Artistic vision combined with technological expertise to teach students fundamentals of designing games, building game worlds, creating game characters, and making playable games for mobile platforms. Use of current software and technology, including Maya and Unity3D. Creation of game projects that students exhibit

and can use for college applications. Offered only as part of UCLA Game Lab Summer Institute. P/NP grading.

**4. Audio Video Design. (2)** Studio, 30 hours. Limited to high school students. Creation of storyboard for short documentary, commercial, or music video. Students shoot and edit their own work by learning fundamentals of preproduction and postproduction using latest digital software, Adobe Premiere and After Effects, to create their work. Burning of DVD of finished production. Visits from professional video producer to help guide students in creating their own videos. May be repeated for credit without limitation. Offered only as part of Summer Institute. P/NP grading.

**5. Introduction to Design | Media Arts. (4)** Studio, 40 hours. Limited to high school students. Two-week summer course designed to meet needs of high school students interested in exploring their creative potential within fields of design media arts, with focus on concepts of narrative and storytelling. Introduction to and exploration of variety of media such as graphic, web, game, and video design with goal of combining and integrating these media to express and realize their narrative projects. Students work with most current software and technology in each discipline area, developing diverse skill sets while cultivating conceptual capabilities around storytelling project, and with experienced instructors and professionals in field to develop projects utilizing this comprehensive and integrative approach. Culminates in portfolios that may be used for college applications. Possible field trips. May be repeated for credit without limitation. Offered only as part of Summer Institute. P/NP grading.

**6. Art/Science and Technology Studio/Laboratory. (4)** Studio/laboratory, 40 hours. Limited to high school students. Two-week summer course, including lectures, required screenings, laboratory visits, field trips, and outside study. Exploration of creative aspects of scientific research and innovation to gain broad understanding of impact of science on contemporary art and popular culture, with focus on new sciences of biotechnology and nanotechnology. Development of proposals and ideas that could serve as prototypes for either art projects or scientific research study. P/NP grading.

**8. Media Histories. (5)** Lecture, three hours; outside study, 12 hours. Synthetic overview of optical media and aesthetic movements covering past two centuries: photography and industrialization/Romanticism (1850 to 1900), cinema and modernism (1900 to 1950), television and postmodernism (1950 to 2000), and digital media and unimodernism (2000 to 2050). How such movements can inform generative work and how understanding these media becomes essential in emerging era of digital humanities. P/NP or letter grading.

**9. Art, Science, and Technology. (5)** Lecture, three hours; discussion, one hour; outside study, 11 hours. Exploration and survey of cultural impact of scientific and cultural innovations, technology-driven art inspired by science, and art/science collaborative projects. Introduction to vast array of cutting-edge research taking place on campus; scientific guest lecturers. Emphasis on art projects that use technology and respond to new scientific concepts. P/NP or letter grading.

**10. Design Culture. (5)** Lecture, three hours; outside study, 12 hours. Open to nonmajors. Understanding design process, with emphasis on development of visual language; study of historic, scientific, technological, economic, and cultural factors influencing design in physical environment. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**21. Drawing and Color. (4)** Studio, six hours; outside study, six hours. For drawing, exploration of relationship between concept and image creation while fostering development of sound drawing and observation skills. For color, exploration of development of fundamental skills in mixing and applying pigments with brush on watercolor paper, as well as use of computer as tool for working with colors. Combination of

painting and software to be predominant way of exploring and presenting ideas regarding color. P/NP or letter grading.

**22. Form. (4)** Studio, six hours; outside study, six hours. Interrelation of two-dimensional surfaces and three-dimensional forms with traditional and experimental materials as foundation for creativity; origination and solution of problems. P/NP or letter grading.

**24. Motion. (4)** Studio, six hours; outside study, six hours. Introduction and integration of traditional design tools, camera, and digital technologies for application to visual thinking and fundamentals of design. P/NP or letter grading.

**25. Typography. (4)** Studio, six hours; outside study, six hours. Focus on three typographic basics: letter, text, and grid. Introduction to fundamentals of typography. Assignments designed to develop understanding of form, scale, and shape of letters as single elements and as texture in layout. Emphasis on grid (structure and layout) and information hierarchy to create successful typographic messages. P/NP or letter grading.

**28. Interactivity. (4)** Studio, six hours; outside study, six hours. Requisites: courses 21, 22, 25. Introduction to concept of interactivity and field of media art that follows history of computer as media for artistic exploration in relation to print, animation, and interactivity. Discussion of potential and ideas related to interactivity, with focus on required skills for creating interactive work. Development of programming skills in service of creating examples of media art. Concepts and skills taught enhance student ability to excel in future courses about Internet, animation, interactive media, and game design. Discussion and readings on four themes—form/programming, motion, interactivity/programming, and interface. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101. Media Arts: Introduction. (5)** Lecture, three hours; outside study, 12 hours. Limited to and required of Design|Media Arts majors. Survey of media arts, their history, aesthetics, and cultural roles from late-19th century to present. Investigation of media arts within broad historical and cultural framework. Discussion of parallels and links with other cultural forms, including history of technology and various art and design practices. P/NP or letter grading.

**104. Design Futures. (5)** Lecture, three hours; outside study, 12 hours. Preparation: completion of preparation for major courses. Open to nonmajors with consent of instructor. Critical examination of design practice and theory of 20th and 21st centuries, incorporating historical as well as speculative methodologies. Consideration of how various design practices and techniques related to each other across cultures and media, with strong emphasis on communication design. P/NP or letter grading.

**152. Tangible Media. (5)** Studio, six hours; outside study, nine hours. Requisites: courses 22, 28, and 101 or 104. Through workshops, readings, lectures, critiques, and discussions, reevaluation of role of desktop computers (and their mice, trackpads, keyboards, screens, and gamepads) plays in forming our understanding of what is technically possible, sensible, logical, foolish, magical, and intuitive. P/NP or letter grading.



**153. Video. (5)** Studio, six hours; outside study, nine hours. Preparation: completion of preparation for major courses. Requisite: course 101 or 104. Use of video technology (video systems, cameras, displays, editing, and storage) to integrate image, sound, time, and motion. Emphasis on expression, continuity, and sequential patterns for video communication. P/NP or letter grading.

**154. Word + Image. (5)** Studio, six hours; outside study, nine hours. Preparation: completion of preparation for major courses. Requisites: courses 21, 22, 25, and 101 or 104. Focus on relationship of type to content, image, and materials. Acquisition of knowledge of and sensitivity to typography in context of complex communication problems in print and digital media. Research, concept and content development, and articulation of methodology for visualization. P/NP or letter grading.

**155. Interactive Animation. (5)** Studio, six hours; outside study, nine hours. Requisites: courses 101 or 104, and 156. Exploration of traditional and experimental animation techniques that are central to 2D and 3D interactive digital projects and video games. Coursework develops skills and concepts that are integral to animation workflows and game engine animation systems including traditional animation principles, 2D sprite animation, rigging 2D and 3D game objects, and character controller implementation. Students experiment with common and alternative input methods for real-time interactivity. Readings, screenings, and in-class gameplay sessions supplement lessons. P/NP or letter grading.

**156. Three-Dimensional Modeling and Motion. (5)** Studio, six hours; outside study, nine hours. Requisite: course 101 or 104. Introduction to theories of three-dimensional form, spatial design, and lighting, using three-dimensional visualization and video tools. Tools originally designed for motion to be used to construct form. Use of aspects of time, such as speed and duration, to contemplate form and interaction. Exploration of virtual versus real form. Letter grading.

**157. Game Design. (5)** Studio, six hours; outside study, nine hours. Preparation: completion of preparation for major courses. Requisites: courses 24, 28, and 101 or 104. Introduction to game design, with focus on developing conceptual and practical skills that form basis for both digital and nondigital game development. Development of four playable game projects that explore various aspects of game design: rule design, game balance, multiplayer strategy, complexity, randomness, polemics, narrative, physical interaction, and aesthetic and pragmatic aspects of physical game design. P/NP or letter grading.

**158. Game Engine. (5)** Studio, six hours; outside study, nine hours. Requisites: courses 24, and 101 or 104. Introduction of fundamentals of programming interactive projects in game development software. Focus on familiarizing students with game engines, computer programming concepts, player experience, and other skills that are foundational to making digital games. Lectures, exercises, and class projects teach skills needed to create digital games including custom rules, interactive physics systems, vectors, generative or randomized levels, save data, custom input systems, score-keeping, and sound. P/NP or letter grading.

**159. Capstone Senior Project in Design Media Arts. (5)** (Formerly numbered 159A.) Studio, six hours; outside study, nine hours. Requisites: courses 8, 10, 21, 22, 24, 25, 28, 101, and 104, and 160, 171, 172, or 173. Preparation: completion of preparation for major courses. Students should have completed six core, upper-division studio courses. Limited to seniors and should be completed in last year. Focus on creating final project that can be showcased at Senior Show. Letter grading.

**159B-159C. Capstone Senior Project. (5-5)** Studio, six hours; outside study, nine hours. Preparation: completion of preparation for major courses. Limited to seniors. Focus on creating final project that can be showcased at Senior Show. Students can take two different courses in different terms or the same course twice in different terms. Total units for courses 159A, 159B, and 159C may not exceed 10 units, with maximum of 5 units per term. Letter grading. **159B.** Video

and Animation. Requisites: courses 24, 28, 101, 104, 153, 156, and 160, 171, 172, or 173. Linear media, including storyboarding, video, animation, modeling, editing, postproduction, and lighting. **159C.** Visual Communication and Image. Requisites: courses 24, 28, 101, 104, 154, and 160, 171, 172, or 173. Visual communication, editorial design, photography, typography, branding, and narrative environments.

**160. Special Topics in Design | Media Arts. (5)** Studio, six hours; outside study, nine hours. Completion of preparation for major and upper-division core courses required. Requisite: course 101 or 104. Selected topics in design and media arts explored through variety of approaches that may include projects, readings, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for credit with topic change. Letter grading.

**161. Network Media. (5)** Studio, six hours; outside study, nine hours. Preparation: completion of preparation for major courses. Requisites: courses 28, 154. Exploration of creative, technical, and critical tools to realize Internet-based projects. Focus on students gaining deeper understanding of Internet as creative platform—where did it come from, how does it work, how do you make things for it, and what do you want to say? Technical workshops on HTML, CSS, JavaScript, and design support development of series of studio projects using variety of network tools. Examination through discussion of cultural, social, political, and philosophical implications of Internet. Consideration of roles of race, gender, sexuality, disability, class, and influence within increasingly networked world, and strategies of response as artists and designers. Examination and challenging of structuring power relationships, inequities, and biases embedded within network tools, technologies, and media. Letter grading.

**163. Narrative. (5)** Lecture, six hours; outside study, nine hours. Preparation: completion of preparation for major courses. Requisite: course 101 or 104. Provides wider understanding of arts that parallels world of 20th-century visual languages. Study of threads that allow viewer to connect story of one art form to another in richer context. Letter grading.

**171. Topics in Interactivity and Games. (5)** Studio, six hours; outside study, nine hours. Completion of preparation for major and upper-division core courses required. Requisites: courses 101 or 104, 157. Selected topics in interactive media and games explored through variety of approaches that may include projects, readings, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for maximum of 15 units. Letter grading.

**172. Topics in Video and Animation. (5)** Studio, six hours; outside study, nine hours. Completion of preparation for major and upper-division core courses required. Requisites: courses 101 or 104, and 153 or 156. Selected topics in video and animation explored through variety of approaches that may include projects, readings, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for maximum of 15 units. Letter grading.

**173. Topics in Visual Communication and Image. (5)** Studio, six hours; outside study, nine hours. Completion of preparation for major and upper-division core courses required. Requisites: courses 24, 28, 101 or 104, 154. Selected topics in visual communication and image explored through variety of approaches that may include projects, readings, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for maximum of 15 units. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**195A-195B. Community or Corporate Internships in Design | Media Arts. (2-4)** Tutorial, six and 12 hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business related to design. Students meet on regular basis with instructor

and provide periodic reports of their experience. Courses 195A and 195B may be repeated for combined maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**198. Honors Research in Design | Media Arts. (4)** Tutorial, two hours. Preparation: 3.0 grade-point average overall. Limited to juniors/seniors. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated once for credit. Individual contract required. Letter grading.

**199. Directed Research in Design | Media Arts. (2 to 5)** Tutorial, four hours. Preparation: 3.0 grade-point average in major. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Design|Media Arts Faculty Seminar. (2)** Seminar, two hours. Limited to graduate design|media arts students. Designed to familiarize new graduate students with departmental faculty members and their creative work and research to help students select their faculty advisers. May be repeated once for credit. S/U grading.

**252A. Programming Media 1. (5)** Studio, six hours; outside study, nine hours. Limited to majors. Introduction to computer programming within context of art and design. Exploration of conceptual space enabled by electronic media through exercises, presentations, discussions, and critiques. Weekly exercises balance concept and technique to reveal potential of computer as medium and tool. Experience with programming basics includes procedural and object-oriented programming, two- and three-dimensional graphics, file I/O, color models, and image processing. Letter grading.

**252B. Programming Media 2. (5)** Studio, six hours; outside study, nine hours. Enforced requisite: course 252A. Limited to majors. Exploration of use of electro-mechanical actuators and sensors, custom interface design, microcontroller programming, and building kinetic and interactive physical artworks. Practical electronics theory, programming for embedded systems, two-dimensional and three-dimensional CAD, basic milling, laser cutting, mold making, circuit building, and other sculptural electronics fabrication techniques. Letter grading.

**252C. Virtuality. (5)** Studio, six hours; outside study, nine hours. Limited to Design|Media Arts majors. Introduction to essential 3D computer graphics techniques, concepts, and implementations. Students complete short exercises to better understand workflows used to create 3D digital art and adjacent media including but not limited to 3D models and animation, virtual and augmented reality, video games, motion capture, photogrammetry, 3D scanning, and physics simulations. Offers technical, formal, and theoretical background for 3D computer graphics to inspire new perspectives on potential of artmaking in virtual spaces. Letter grading.

**269. Graduate Seminar. (4)** Seminar, four hours. Designed for graduate design|media arts students. Survey of critical theories in media art and design. Critical examination of student work by peers, faculty members, and expert guests. Must be taken twice for MFA degree. May be repeated for credit with consent of adviser. Letter grading.

**272. Introduction to Art | Science. (5)** Seminar, three hours. For past 50 years artists have increasingly moved from being inspired by scientific innovation and discovery to actually collaborating with scientists and even residing and working in science laboratories. History of science in relation to artists' interpretation of scientific work to current works that are created in response to recent developments in biotechnology and nanotechnology. Letter grading.

**289. Special Topics in Media Arts. (3)** Seminar, 90 minutes; seven and one half hours arranged. Examination of topics relevant to media arts theory and practice, with scheduled meetings to be arranged be-

tween faculty member and student as needed. Topics announced in advance. May be taken for maximum of 18 units. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**403. Graduate Critique. (2)** Seminar, three hours; outside study, three hours. Limited to first- and second-year departmental graduate students. Students meet with instructor in small classroom setting to exchange ideas through presentation of current projects and research, discussion, research papers, and reports. Instructors may invite visiting critics to contribute. May be repeated for credit. S/U grading.

**404. Graduate Tutorial. (3)** Tutorial, three hours; outside study, six hours. Limited to first- and second-year departmental graduate students. Development of body of work while working toward MFA degree, with one-to-one interaction between students and faculty members. May be repeated for credit. Letter grading.

**495. Teaching Assistant Training Practicum. (2)** Seminar, three hours; outside study, three hours. Forum for first-year teaching assistants for discussion and exploration of teaching pedagogy and classroom mechanics. Problems and practices of teaching design at college level, as well as role of teaching assistants within department. Designed to help new teaching assistants develop teaching skills and to orient them to department and University policies and resources. May not be applied toward degree requirements. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. May be repeated for credit with consent of adviser. S/U or letter grading.

**597. Preparation for MFA Comprehensive Examination. (4 to 8)** Tutorial, to be arranged. Designed for second-year MFA students to prepare for comprehensive examination. May be repeated for credit with consent of adviser. S/U grading.

**598. MA Research and Thesis Preparation. (4 to 12)** Tutorial, to be arranged. Designed for second-year MA students. May not be applied toward minimum graduate course or unit requirements for MA degree. May be repeated for credit. S/U grading.

## DIGITAL HUMANITIES

*Interdisciplinary Minor*  
*College of Letters and Science*

212 Royce Hall  
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Los Angeles, CA 90095-1539

Digital Humanities

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Minor e-mail

Chris J. Johanson, PhD, *Chair*  
Ashley R. Sanders, PhD, *Vice Chair*

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Daniel S. Snelson, PhD (*English*)

Francis F. Steen, PhD (*Communication*)

Willeke Z. Wendrich, PhD (*Near Eastern Languages and Cultures*)

## Overview

The Digital Humanities minor is an interdisciplinary minor that studies the foundations and futures of the digital world. Digital humanities interprets the cultural and social impact of the new information age as well as creates and applies new technologies to answer cultural, social, and historical questions, both those traditionally conceived and those enabled by new technologies. The interdisciplinary curriculum draws on faculty members from more than 15 departments, five schools, and three research centers at UCLA. It places project-based learning at the heart of the curriculum, with students working in collaborative teams to realize digital research projects with real-world applications. Students use tools and methodologies such as three-dimensional visualization, data mining, network analysis, and digital mapping to conceptualize and advance research projects. Students have the opportunity to make significant contributions to scholarship in fields ranging from archaeology and architecture to history and literature. By preparing students to be active participants in the design and production of new knowledge, the minor emphasizes the critical thinking skills, creativity, and collaborative methodologies necessary for success in the digital information age.

## Undergraduate Minor

### Digital Humanities Minor

The Digital Humanities minor is intended to provide students with literacy in creating, interpreting, and applying the technologies of the digital world. It examines the cultural and social impact of new technologies and enables students to harness these technologies to develop their own research projects in a wide range of fields.

### Admission

To apply for the minor, students must (1) have an overall grade-point average of 2.7 or better and (2) submit an application essay supporting their interest in pursuing the minor and enumerating any digital projects that they have already undertaken. On acceptance to the minor, students are expected to identify an academic area of digital humanities in which they intend to concentrate. Information about the minor is available on the [minor website](#). To submit an application for the minor, see the website.

### The Minor

*Required Lower-Division Course (4 to 6 units):* One elective course selected from Ancient Near East 10W, Architecture and Urban Design 10A, Classics 10, 20, 42, Clusters 66A, Digital

Humanities 30, German 61A, Information Studies 20, or 30.

*Required Upper-Division Courses (25 to 28 units):* Digital Humanities 101; one upper-division elective course selected from Digital Humanities 110 through 160; one capstone course selected from Digital Humanities 187, 198, or 199; and three elective courses selected from Ancient Near East M101C (or Art History M110C), 125A, M125B (or Architecture and Urban Design M125B), M125C (or Architecture and Urban Design M125C), 162, C165, CM169 (or Anthropology CM110Q), Anthropology M116R (or Chinese M183), Architecture and Urban Design 132, Armenian C153, Art History C145A, C145B, Classics 164, 166B, Design|Media Arts 104, Digital Humanities 151, 195 or 196, English 118A, History 188, Korean 183, 187, Russian 121, 129, Scandinavian C133A, C171, Society and Genetics 131, 175, Spanish 130, 150, 170, Urban Planning 129, 141.

### Policies

Variable topics courses may be taken as topics apply.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade. Successful completion of the minor is indicated on the transcript and diploma.

## Digital Humanities

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**30. Los Angeles Tech City: Digital Technologies and Spatial Justice. (5)** Lecture, two and one half hours; studio, two hours. Investigation of spatial justice and injustice in multi-ethnic city of Los Angeles through Lens of three thematic technologies that built and transformed Los Angeles into global metropolis: cars and highways, networking technologies culminating in Internet and World Wide Web, and film and broadcast media. Use of innovative forms of investigation and communication, from digital mapping to video-sensing, to integrate interpretative and historical approaches of humanities with material and projective practices of design. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Stu-

dents must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Introduction to Digital Humanities. (4)** Lecture, 75 minutes; discussion, 75 minutes. Foundation course for students in Digital Humanities minor, providing theoretical and conceptual framework for understanding genesis of digital world. Use of contemporary cultural-historical methodology to focus on rise of new media and information technologies in 19th, 20th, and 21st centuries, such as photography, film, radio, television, Internet, and World Wide Web and their impact on how individuals, groups, and cultures experienced their worlds. Letter grading.

**110. User Experience and Design. (4)** Seminar, three hours. Requisite: course 101. Introduction to fields of user experience (UX) research and design. Covers UX design methods and process, including ethnographic field research, persona-scenario development, information architecture, prototyping, and usability testing. Students learn by hands-on practice in human-centered process: how to understand users, how to design interface and interaction for users, and how to evaluate and communicate user experience design with users. Letter grading.

**120. Social Media Data Analytics. (4)** Lecture, three hours; laboratory, one hour. Requisite: course 101 or consent of instructor. Social media data analytics, with focus on questions of power, privilege, identity, whose voices count and in what spaces, as well as how data science and digital humanities may be used to challenge power structures. Study of how social media has been used both to undermine and to support social justice and political change movements, ways in which social media data is currently used by corporate entities, and ethical data usage. Students learn digital research methods including quantitative and qualitative data analytics, statistics, as well as data visualization to examine social media data. Letter grading.

**M121. Race, Gender, and Data. (4)** (Same as Community Engagement and Social Change M121.) Seminar, three hours. Requisite: course 101. Data plays a crucial role in political representation, governmental resource allocation, and policy decisions. Investigation of how data does or does not ascribe a quantitative value to a human life by employing a community-engaged emphasis to study how emerging digital models link data with social justice organizing. Students learn to read datasets produced by governmental entities such as the U.S. Census Bureau, Bureau of Labor Statistics, and Department of Health and Human Services. Assignments include working on a community-engaged data project that evaluates and addresses key concerns facing communities-of-color. Introduction to critical data studies and applied data ethics. Studio sessions include lessons on finding and analyzing datasets relevant to racial and gender justice themes; and to generating data visualizations, digital stories, and maps using the latest software tools. No prior knowledge of statistics or quantitative analysis is required. P/NP or letter grading.

**125. Data Analysis for Social and Cultural Research. (4)** Seminar, three hours. Requisite: course 101 or consent of instructor. Data analysis and statistical methods tailored for students in humanities and social sciences, with focus on topics and issues related to social justice. Study of descriptive and inferential statistics as applied in humanistic research. Consideration of how to generate evidence-based, statistically sound arguments, applying methods learned throughout the course to a collaborative project. Students learn statistical methods, R Studio environment and language, and how to communicate their arguments in cogent narratives supported by evidence. Letter grading.

**131. Digital Mapping and Critical Geographic Information Systems. (4)** Seminar, three hours. Requisite: course 101 or consent of instructor. Introduction to digital mapping and critical geographic information systems. Study of basic data types including geographic, structured, and unstructured. Students en-

gage with fundamental mapping practices such as geolocating structured data, working with open data through web mapping technologies, georeferencing historical maps, and creating location-based narratives and visualizations. Through project-based learning, students discover how to manage and apply data to wide range of digital mapping technologies. Consideration of how to incorporate these concepts into humanities and social sciences research. Letter grading.

**M145. Literary Texts and Literary Languages: Strategies of Analysis and Digital Tools. (4)** (Same as Russian M145.) Lecture, three hours. Lectures and readings in English. Non-obligatory additional materials in Russian. Formal, quantitative, and computational methods for analysis of poetry and prose. Digital tools for analysis. P/NP or letter grading.

**140. Coding for Humanities. (4)** Seminar, three hours. Requisites: course 101. Introduction to coding, with focus on Python. Study of basic structural elements such as lists, if statements, dictionaries, loops, functions, and classes. Consideration of how to apply these concepts to research in humanities and social sciences, and project-based learning. Students discover how to manage and display data with added impact. Content and goals are guided by freedom to research more effectively and freedom of speech. Letter grading.

**150. Advanced Topics in Digital Humanities. (4)** Seminar, three hours. Requisite: course 101. Introduction to advanced research methods or thematic issues in digital humanities such as database and visualization technologies, social media technologies, application programming interfaces, and digital mapping to acquire familiarity with particular set of technologies by learning practical research methods and theoretical issues to carry out advanced research in this area. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. Letter grading.

**151. Advanced Topics in Urban Humanities. (4)** Seminar, three hours. Introduction to advanced research topics in urban humanities. Looking at specific subject matters related to notion of spatial equity in context of Los Angeles, exploration of how certain spatial technologies such as geographic information systems (GIS) cartography, mobile telephony, real-time data collection, social media, digital databases, and interactive web platforms can be deployed to research and document urban experience. Familiarization with digital tools used to study urban issues, from affordable housing to access to public space and employment, to civic participation. Letter grading.

**187. Capstone Seminar in Digital Humanities. (4)** Seminar, three hours. Requisite: course 101. Students are guided in development and realization of collaborative digital humanities research project. Students learn to develop and refine research question, carry out advanced research in digital humanities, and present results of their research to their peers. Students participate in structured trainings, work with classmates to select suitable research topics, give weekly updates about their research process, and develop presentation of project. Librarians and members of Digital Research Consortium introduce students to available digital collections, archives, and other resources at UCLA. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Community or Corporate Internships in Digital Humanities. (4)** Tutorial, two hours; fieldwork, eight hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Placements to be arranged by instructor. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. Letter grading.

**196. Research Apprenticeship in Digital Humanities. (4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP grading.

**198. Honors Research in Digital Humanities. (4)** Tutorial, one hour. Requisite: course 101. Limited to juniors/seniors. Development and completion of significant research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research in Digital Humanities. (2 to 4)** Tutorial, one hour. Requisite: course 101. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**201. Introduction to Digital Humanities. (5)** Seminar, three hours; laboratory, one hour. Introduction to field of digital humanities. Historical overview of field from its beginning in post-World War II era to present, highlighting major intellectual problems, disciplinary paradigms, and institutional challenges that are posed by digital humanities. Examination of major epistemological, methodological, technological, and institutional challenges posed by digital humanities through number of specific projects that address fundamental problems in creating, interpreting, preserving, and transmitting human cultural record. How digital technologies and tools, ranging from map visualizations and modeling environments to database structures and interface design, are arguments that make certain assumptions about, and even transform, objects of study. Letter grading.

**M221. Data and Society. (4)** (Same as Social Science M240.) Seminar, three hours. Introduction to way data and computing technologies increasingly play pivotal role in social life. Students pose critical questions about social impact of data, while also gaining literacy in engaging digital and data tools. Students learn to recognize historically and institutionally produced biases in data research and science. Engagement is encouraged with how to work with data for social justice aims. S/U or letter grading.

**250. Special Topics in Digital Humanities. (4)** Seminar, three hours. Enforced requisite: course 201. Introduction to advanced research method or thematic issue in digital humanities, such as digital textual analysis, digital mapping database and visualization technologies, or social media technologies. Acquisition of familiarity with particular set of technologies by learning practical research methods and theoretical issues to carry out advanced research in this area. Examination of critiques of theoretical underpinnings of such technologies and issues that they raise. May be repeated for credit with topic change. Letter grading.

**299. Special Projects in Digital Humanities. (2 to 4)** Tutorial, one hour. Enforced requisite: course 201. Limited to and required of graduate students in Digital Humanities Graduate Certificate Program. Supervised research and investigation under guidance of faculty mentor. Culminating project required. May be repeated for maximum of 12 units. Letter grading.

**596. Directed Individual Study or Research. (2 to 12)** Tutorial, three hours. To be arranged with faculty member who directs study or research. S/U or letter grading.

# DISABILITY STUDIES

*Interdepartmental Program*  
College of Letters and Science

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## Disability Studies

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### E-mail contact

Victoria E. Marks, BA, *Chair*

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Lauren L. McCarthy, MFA (*Design|Media Arts*)

Christina G.S. Palmer, PhD (*Psychiatry and Biobehavioral Sciences*)

## Overview

Disability—whether bodily, cognitive, emotional, or sensory—is part of the fabric of universal human experience; yet it is often regarded as a deficit to be fixed, cured, or hidden, with disabled individuals cast as unfortunate victims. The robust Disability Studies program is challenging this view, changing attitudes, and redefining normal.

By exploring disability as a social issue and cultural identity rather than a medically defined condition, students are prepared to use the experience of disability as a lens to re-envision models of access, inclusion, participation, communication, and equality.

Led by some of the most distinguished UCLA faculty, disability studies examines the meaning and nature of disability from a variety of perspectives, including arts and humanities, health sciences, social sciences, public policy, technology, and education. At UCLA, the conversation around disability has shifted from exclusion to inclusion, from limitations to possibilities.

## Undergraduate Major

### Disability Studies BA

Disability Studies is a multifaceted field that examines the nature, meaning, and consequences of disability. The Bachelor of Arts (BA) degree in Disability Studies is an interdisciplinary, community-based, capstone major. It appeals to undergraduates seeking a conceptual and practical understanding of disability as a foundation for graduate or professional studies and/or careers across a broad spectrum of professions. The major curriculum recognizes disability as a central part of our lived experience; a critical dimension of social, cultural, and political identity; and a frequent target of discrimi-

nation and exclusion. Through foundational courses, interdisciplinary electives, community-engaged course work, and a senior capstone research project, students in the major learn to think critically about disability as a core aspect of the human experience, preparing them to enact transformational change across disability communities and beyond.

### Capstone Major

The Disability Studies major is a designated capstone major. Students have the option of completing a capstone seminar (Disability Studies 191) or independent research project (Disability Studies 198A and 198B, or 199A and 199B) that enables them to use knowledge and skills acquired through previous coursework to engage, under the guidance of a faculty member, in a research or creative project that results in a final paper or other product.

### Learning Outcomes

The Disability Studies major has the following learning outcomes:

- Demonstrated understanding of disability studies concepts, theories, history, and political movements
- Integration of multiple perspectives on disability through interdisciplinary inquiry
- Development of professional skills through academic and applied experiences
- Use of theory to inform practice through participation in community-engaged learning activities
- Conduction and communication of research to various audiences

### Entry to the Major

#### Admission

Students must first complete all preparation for the major courses. Students must have a UC grade-point average (GPA) of 2.0 or better in those courses and an overall GPA of 2.0. Students are accepted into the major on a rolling basis but no later than the end of spring quarter of their junior year.

#### Pre-major

Incoming first-year students may be admitted as Disability Studies pre-majors on acceptance to UCLA. Pre-major students must apply for major standing by the end of spring quarter of their junior year. All other students must first complete Disability Studies 1, and then contact the undergraduate counselor in A316 Murphy Hall to request pre-major standing.

#### Transfer Students

Transfer applicants to the Disability Studies major with 90 or more units must complete the following preparatory courses prior to admission to UCLA: one social theory course; one race, identity, and society course; one humanities and ethics course; and one data analysis course. Disability Studies 1 must be taken at UCLA once a transfer student is admitted to the University.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* (1) Disability Studies 1; (2) one *social theory* course selected from Anthropology 3, Public Affairs 10, 80, or Sociology 1; (3) one *race, identity, and society* course selected from African American Studies 1, 6, American Indian Studies M10, Asian American Studies 10, 20, 30, 40, 50, Chicana/o and Central American Studies 10A, 10B, 20, Clusters 20B, M72B, 80BX, Communication M72B, Design|Media Arts 10, Education 11, Gender Studies 10, Labor Studies 10, Society and Genetics M72B, Sociology M72B, or World Arts and Cultures M23; (4) one *humanities and ethics* course selected from Clusters M71B, 73B, Comparative Literature 1E, Design|Media Arts 10, Molecular, Cell, and Developmental Biology 60, Philosophy 22, 22W, Society and Genetics 5, or M71B; and (5) one *data analysis* course selected from Education 35, Life Sciences 40, Political Science 6, Public Affairs 60, Statistics 10, or 13.

### The Major

*Required Core Course (5 units):* Disability Studies 101W.

*Disability-Centered Electives (8 units):* Select two courses from American Sign Language M115, Anthropology 137P, 149 (when offering an interdisciplinary perspective of disability), Asian American Studies M117, Design|Media Arts 171, Disability Studies 102 through 187, Education 104A, 132, English M103, Gender Studies M121, 152, M161, Honors Collegium M183, Nursing M172 and M172XP (must be taken together to satisfy requirement), Psychology M107, 127A, 127B, 127C, 132A, M139, Society and Genetics M166, M183, Sociology M120, or M148.

*Interdisciplinary Perspectives on Disability (16 units):* Select one course from each of the four categories:

*Category 1: Health Humanities and Bioethics—* Anthropology 137P, 149 (when offering an interdisciplinary perspective of disability), Asian American Studies M117, M129, M161, Community Health Sciences 100, M140, Comparative Literature 180, Disability Studies 138XP, M139, M148, M166, M172 and M172XP (must be taken together to satisfy requirement), M183, Education 132, Health Policy and Management M110, History 179A, 179B, 179C, Honors Collegium M183, Nursing M172 and M172XP (must be taken together to satisfy requirement), Philosophy 173, Public Affairs M131, 134, Psychology M107, 127A, 127B, 127C, M139, Society and Genetics M166, M183, or Sociology M148

*Category 2: Access and Social Change—* Community Engagement and Social Change 172XP, Disability Studies 145, M148, M149, M166, M172 and M172XP (must be taken together to satisfy requirement), Design|Media Arts 171, Education 104A, Gender Studies 152, Nursing M172 and M172XP (must be taken together to satisfy requirement), Psychology 132A, Society and Genetics M166, Sociology M120, or M148

*Category 3: Representation, Embodiment, and Disability Cultures—* American Sign Language



M115, Comparative Literature 180, Disability Studies M103, 111, M114, M115, M121, M139, M161, English M103, Gender Studies 104, M121, M161, Psychology M139, or Theater M114

*Category 4: Global and Historical Perspectives*—Anthropology 137P, 149 (when offering an interdisciplinary perspective of disability), Community Health Sciences 132, Comparative Literature 180, Disability Studies M103, English M103, Gender Studies 152, History 179A, 179B, or 179C

*Internship or Research Practicum (8 units):* Disability Studies 195CE (taken twice) or 196 (taken twice).

*Capstone (5 or 6 units):* one capstone course from Disability Studies 191 (5 units) or two capstone courses from Disability Studies 198A and 198B (6 units) or 199A and 199B (6 units).

## Honors Program

All honors students must complete their capstone requirement by taking courses 198A and 198B, in which they research, write, and present an honors thesis.

## Policies

### Preparation for the Major

All courses must be completed with a 2.0 or better grade-point average.

### The Major

Each course must be taken for a letter grade, and students must earn a C or better grade in Disability Studies 101W.

Disability Studies 101W and one quarter of Disability Studies 195CE or 196 must be taken prior to the capstone.

## Honors Program

### Admission

The honors program is open to majors with a 3.5 departmental and a 3.0 overall grade-point average (GPA). Students with lower GPAs may petition for admission to the program. Students should apply by winter quarter of the junior year. For application forms and more information, contact the departmental counselor in A316 Murphy Hall.

### Requirements

To receive honors at graduation, students must have at least a 3.5 GPA in courses applied toward the major (including 198A and 198B) and an overall GPA of 3.0.

## Disability Studies

### Lower-Division Courses

**1. Construction of (Dis)ability and Ableism in U.S. (5)** Lecture, two hours; discussion, two hours. Examination of ways in which certain bodies and minds have been categorized, disabled, conceived of, oppressed, and liberated in U.S. over time. Using intersectional lens, exploration of origins of American eugenics movement, social construction of normalcy and (dis)ability, and ableism in its many forms (e.g., individual, legal, medical, cultural, financial). Students learn how to apply critical disability studies framework to evaluate relationships between race, ethnicity, language, gender, sexual orientation, income, and dis-

ability in relation to disablement and ableism. Covers key topics and theoretical frameworks in disability studies to give students foundational and conceptual knowledge needed to analyze social, political, and cultural issues from critical disability studies perspectives. P/NP or letter grading.

**10. Intersections of Art History and Disability Studies: Disability in Modern Art. (5)** Lecture, four hours. Broad overview of presence of disability and its manifestations through modern art in the 19th and 20th centuries. Introduction of historical development and fundamental intellectual and ethical issues associated with representation of disability in arts and humanities. Investigation of complex relations between artistic and humanistic expression and this major facet of society and culture. Introduction of new methodology and language to build framework around how disability might fit into discourse of modern art as alternative way of knowing and how disability informs modern art by way of radical aesthetics of representation that challenges sociocultural norms. Consideration of how disability aesthetics informs photography, performance art, outsider art, and curatorial practices. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101. Perspectives on Disability Studies. (5)** Lecture, one hour; discussion, two hours. Not open for credit to students with credit for course 101W. Creation of critical framework for understanding concept of disability from sampling of disciplinary perspectives. Organized around productive and central tension in disability studies—between disability as lived subjective experience that is both individual and communal, and disability as objective, medical, legal, and sometimes stigmatized category. Students encouraged to make connections between units and to create their own perspectives on disability in field that defines itself by how it changes. Letter grading.

**101W. Perspectives on Disability Studies. (5)** Lecture, one hour; discussion, two hours. Enforced requisite: English Composition 3 or English as a Second Language 36. Not open for credit to students with credit for course 101. Creation of critical framework for understanding concept of disability from sampling of disciplinary perspectives. Organized around productive and central tension in disability studies—between disability as lived subjective experience that is both individual and communal, and disability as objective, medical, legal, and sometimes stigmatized category. Students encouraged to make connections between units and to create their own perspectives on disability in field that defines itself by how it changes. Satisfies Writing II requirement. Letter grading.

**102. Disability and Violence. (4)** Seminar, three hours. Relationship between disability and violence from three angles: (1) review of disproportionate incidence of violence committed against people with disabilities, whether specifically as form of hate crime or based on dependency and/or vulnerability that accompany some types of disability, (2) study of role of disability and particularly mental illness in representations of criminality and violence, and (3) disablement or emergent disability (injuries, illnesses, and impairments created by social inequity) as consequence of intersecting forms of racial, gender, sexual, and class subordination, or as result of state or interpersonal violence. Consideration of possible coalition-based strategies for challenging systemic subordination and prospects for improving disability-consciousness across social movement efforts and campaigns. P/NP or letter grading.

**M103. Studies in Disability Literatures. (5)** (Same as English M103.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Survey of modes of disability in literature, with specific emphasis on thematic concerns. Topics may include introduction to disability studies; race, gender, and disability; disability narratives; etc. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**110. Disability and Popular Culture. (4)** Lecture, four hours. Drawing from disability studies, media studies, and theories of representation, examination of increasing visibility of people with disabilities in popular culture. How disability is represented and who gets to represent it. Analysis and critique of representations of people with disabilities in late 20th and early 21st century cinema and television to understand functioning of representation in popular culture. Development of critical media literacy skills. P/NP or letter grading.

**111. Disability as Spectacle: Performing Nonnormative Bodies. (4)** Lecture, two hours; studio, two hours. Examination through eyes of disability activists and artists interrogating how aspects of body get deemed nonnormative. Investigation of what it means to push against pressure to fit in, as well as how to contest invisibility of some disabilities that happen when normal bodies get defined visually. Use of this lens on disability to research and explore role that bodies play in political battles over who gets socially valued and who does not. P/NP or letter grading.

**M112. Disability and Musical-Dramatic Arts: Representation, Embodiment, Themes, and Practices. (5)** (Same as Musicology M112.) Lecture, four hours; discussion, one hour. Exploration of ways disability and impairment factor into musical and musical-dramatic creation and performance, considered historically and aspirationally in terms of representation, embodiment, thematics, and developing practices. P/NP or letter grading.

**M113. Variable Topics on Music and Disability. (4)** (Same as Musicology M113.) Seminar, four hours. Analysis and critique of depiction of disability and music. Topics may include introduction to disability studies; exploring work and creative strategies of disabled musicians; music technologies and instrument design; representation of disability in music; and more. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M114. Variable Topics in Performance and Disability Studies. (4)** (Same as Theater M114.) Seminar, four hours. Analysis and critique of depiction of disability in theater. Topics may include introduction to disability studies; race, gender, and disability; representation of disability in theater; and more. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M115. Enforcing Normalcy: Deaf and Disability Studies. (4)** (Same as American Sign Language M115.) Lecture, three hours. Exploration of historical, medical, social, political, philosophical, and cultural influences that have constructed categories of normalcy, disability, and deafness. Building on writing of Michel Foucault and critical work in field of disability studies, inquiry into institutions that have enforced standards of normalcy throughout 19th and 20th centuries to present. Primary attention to rise of medical



authority in West, history of eugenics, and contemporary bioethics issues confronting disability and deaf communities. P/NP or letter grading.

**120. Special Topics on Race and Disability. (4)** Lecture, four hours. Exploration of race and disability, with emphasis on lived realities of people of color with disabilities. Use of scholarly texts from disability studies, sociology, gender studies, or critical race studies to investigate and critique mechanisms and systems that shape race, ableism, and dominant/nondominant power dynamics. P/NP or letter grading.

**M121. Topics in Gender and Disabilities. (4)** (Same as Gender Studies M121.) Lecture, three and one half hours. Limited to juniors/seniors. Ways in which issues of disability are affected by gender, with particular attention to various roles, positions, and concerns of women with disabilities. Approach is intersectional, exploring how social categories of class, race, ethnicity, religion, age, sexuality, nationality, and citizenship affect and are affected by gender and disability. Topics may include law (civil rights, nondiscrimination), representation (arts, literature), education, public policy, health. May be repeated for credit with topic and instructor change. P/NP or letter grading.

**M122. Bodies in Antiquity. (4)** (Same as Classics M149.) Lecture, three hours. Investigation of individuals and groups that compose ancient Greek and Roman societies and relationship they have with larger social body, with particular focus on marginalized or minority groups such as women, noncitizens (resident aliens and provincials), slaves, children, elderly, and disabled. Examination of ways these groups contribute to or detract from our understanding of ancient society as whole. May be repeated for credit with topic change. P/NP or letter grading.

**M125. Exploring Intersections of Ability and Sexuality. (4)** (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M125.) Lecture, three hours. Exploration of identity as means of understanding cultural formations, dominant/nondominant power dynamics, and systems of visual representation. Intersectional approach to explore how ability and sexuality intersect, overlap, and change notions of identity. Use of scholarly texts from disability studies, lesbian, gay, bisexual, and transgender studies, popular culture, performance, and film to investigate factors that shape ability and sexuality as basis for identity. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**129. Theory, Policy, and Practice of Special Education: Implications for Educators and Advocates. (4)** Lecture, three hours. Examination of issues of disability in K-12 schooling and social and historical contexts of special education policy, as well as its implementation. Focus on equity-related legal and policy issues in education, specifically those associated with disability, race, language, and gender and how these intersect. Consideration of landmark court decisions such as *Brown versus Board of Education* (1954) and *Board of Education versus Rowley* (1982), as well as key legislation such as *Americans with Disabilities Act (ADA)* and *Individuals with Disabilities Education Act (IDEA)*. P/NP or letter grading.

**M130. Disability Policy and Services in Contemporary America. (4)** (Same as Gerontology M165 and Social Welfare M165.) Lecture, three hours. Limited to juniors/seniors. Growing numbers of people of all ages with disabilities are leading active and productive lives in American communities. Many others are struggling to lead such lives. Who are people with disabilities in contemporary America? How has U.S. responded over time to various needs and aspirations of people with disabilities, young and old? What demands have been made over time by disability advocates? How has government addressed demands of advocates for various disability populations? What do we know about extent to which public policies and programs are responsive to people in need? How do demographics, economics, and politics continue to influence evolving public policy responses? P/NP or letter grading.

**131. Alternative Approaches to Language Acquisition. (4)** Seminar, four hours. Examination of everyday experience of language delay, disorder, difference, and difficulty from disability studies perspective. Presenta-

tion of key concepts and terminology of culture, disability, and language use. Discussions and assignments critically evaluate findings on language acquisition by asking questions from disability studies about inclusion, individual- and socially constructed experience, and power. P/NP or letter grading.

**138XP. Applied Autism Intervention: Multidisciplinary Perspective. (4)** (Formerly numbered 138SL.) Seminar, 90 minutes; fieldwork, six hours. Service-learning course for undergraduate students in Early Childhood Partial Hospitalization Program (ECPHP). Introduction to history, theory, and practice of autism interventions and social and cultural factors that determine how society and medical profession understand autism as diagnostic category. Study of processes involved in identifying autism as represented in fields of psychology, neuroscience, and disability studies. Review of social versus medical model of disability and analysis of dominant as well as counter discourse on autism. Overview of broader educational issues for children living with disabilities as well as parent perceptions. P/NP or letter grading.

**M139. Perspectives on Autism and Neurodiversity. (4)** (Same as Psychology M139.) Seminar, three and one half hours. Genealogy of autism as diagnostic category and cultural phenomenon from its historical roots as new, rare, and obscure condition in early 1940s to its current contested status as minority identity and/or global epidemic. Examination of material sourced from various fields and disciplines invested in autism, including psychology, neuroscience, arts and humanities, popular media, anthropology, activism, and critical autism studies. Students encounter and analyze multiple perspectives on autism and put them in conversation with one another. Attention paid to way people on spectrum define, explain, and represent their own experiences of autism and discussion of what ramifications of these multiple framings are in context of autism intervention strategy and disability policy today. Letter grading.

**145. Mental Disability Law. (4)** Lecture, three hours. Examination of definitions and some characteristics of those conditions that legal systems recognize as mental disabilities. Review of evolution of these definitions through U.S. and Western histories, with focus on role conceptions of mental illness has played in various racial, gendered, and economic regimes. Exploration of primary approaches U.S. legal system takes to address needs, vulnerabilities, and rights of people with disabilities and of people with mental disabilities. Discussion of some key challenges and controversies affecting policy and practice in this area and varying strategies for engaging those challenges. P/NP or letter grading.

**M148. Sociology of Mental Illness. (4)** (Same as Sociology M148.) Lecture, three hours; discussion, one hour. Analysis of major sociological and social psychological models of madness. Study of social processes involved in production, recognition, labeling, and treatment of mental illness. P/NP or letter grading.

**M149. Disability Rights Law. (4)** (Same as Sociology M120.) Lecture, four hours. Examination of disability-related issues impacting people of all ages across wide spectrum of settings in both public and private sectors—from preschool to higher education, from military to workplace, and from intensely urban environments to online and virtual worlds. Topics range from persistent and recurring disputes to novel controversies fueled by new technologies and changing times. P/NP or letter grading.

**150. Human Rights, International Development, and Disability. (4)** Lecture, three hours. Basic introduction to theories of human rights, sociology of development, and contemporary rights-based development theory and practice. International disability rights movement to serve as case study, following passage of U.N. *Convention on Rights of Persons with Disabilities* in 2006 to changes on ground in developing countries that are occurring today. Offered in summer only. P/NP or letter grading.

**M157. Choreographing Disability. (4)** (Same as Dance M157.) Seminar, four hours. Through study of range of performance by, featuring, or about people who identify as disabled, reading and discussion of range of writing about experiences of disability and

process of making work about disability by key artists and thinkers. Introduction to concept of choreography as political/cultural idea broadly defined as scored movement and organization and behavior of bodies, as well as choreography as poetic form for expression of ideas, creative tool, or product. Viewing and discussion of work, and embodying ideas through movement and dance-making. P/NP or letter grading.

**M161. Sports, Normativity, and Body. (4)** (Same as Gender Studies M161.) Lecture, four hours. Since creation of International Olympic Committee in 1894, athletes with disabilities have had, and been denied, formal opportunities to compete with able-bodied athletes. Overview of some major topics of discussion concerning intersections of athletic competition and disability, addressing variety of perspectives and themes on disability and sport, such as passing, sports integration, competition versus charity, and masculinity. Sources include readings, film, television, and biographical writings that address sports, body and disability generally, and Special Olympics specifically. P/NP or letter grading.

**163A-163B. Autism Media Laboratory. (5-5)** Lecture, two hours; discussion, one hour. Course 163A is requisite to course 163B. People with autism who are nonspeaking face challenges fully participating in their communities. Exploration of documentary filmmaking as catalyst to educate greater community on importance of inclusion of people with disabilities. Students work together with community teachers, autistic self-advocates who are nonspeaking or minimally speaking, to create documentary short films. Students explore issues related to autism and disability while gaining exposure to observational, interview-based, and participatory documentary shooting and editing techniques. Letter grading.

**M164A. Documentary Production for Social Change: Mobility in Los Angeles. (5)** (Same as Urban Planning M164A.) Seminar, three hours; fieldwork, two hours. Exploration of documentary filmmaking as catalyst for social change, using daily commute in Los Angeles as case study. Introduction to issues of race, ethnicity, gender, disability, and class on experiences of commuting, access to public transportation, and car-based versus alternative (bike and pedestrian) forms of commuting. Exposure to observational, interview-based, and participatory documentary shooting and editing techniques, as well as social marketing strategies that are vital to documentary production and distribution. Letter grading.

**164B. Documenting Dis/Ability on Film. (4)** Lecture, four hours. Nonfiction digital media is used as contemporary form of investigation or research or is attached to research projects, built into websites, used in campaigns for social and political activism, and exhibited at film festivals. Social-issue documentaries appear more frequently on cable, public television, and Internet. Examination of how powerful documentaries still rely on well-told stories by passionate filmmakers. P/NP or letter grading.

**M166. Health-Care Ethics. (4)** (Same as Society and Genetics M166.) Lecture, three hours; discussion, one hour. Consideration of critical ethical concepts as they apply to health-care practice, medical decision-making, and medical technology development and use. Consideration of concepts drawn from philosophy, literature and culture, and political history including freedom, equality, justice, vitality, knowledge, kinship, mercy, illness, and disability. Examination of how concept of human dignity should shape health-care decisions such as physician-aided dying or selective abortion; proper relationship between history and concept of human rights and distribution of medical resources; how political and ethical category equality should structure development and use of genetic editing; how health-care concept of patient autonomy relates to political concept of liberty or freedom; how to evaluate good life, or what philosophers call flourishing, in medical treatment decisions for individuals or development of therapies. P/NP or letter grading.

**M171. Philanthropy: Confronting Challenges of Serving Disabled. (5)** (Same as Honors Collegium M170.) Lecture, three hours. Enforced requisite: course 101 or 101W. Study of history, philosophy, and

practice of philanthropy using lens of disability studies theory in conversation with important themes of charity, paternalism, and systems of dependency. Analysis of multiple perspectives of philanthropy to gain practical experience setting priorities and making philanthropic investments in Los Angeles-based non-profit organizations serving people with disabilities. Letter grading.

**M172. Care Work: Disability Justice and Health Care. (2)** (Same as Nursing M172.) Lecture, one hour; discussion, one hour. Exploration of nature, history, models, and propositions of care, care work, disability, disability justice movement, and health care. Consideration of intersections, interdependence, and complexities of formal and informal care webs and care economies between caregivers and receivers, which includes kin, advocates, disability communities, and health professionals. Use of multi-media, scholarly texts, and theoretical frameworks from disability justice, disability studies, film, gender studies, health, labor studies, law, nursing, and public policy to investigate the concepts of care and care work. Letter grading.

**M172XP. Care Work: Disability Justice and Health Care. (3)** (Same as Nursing M172XP.) Seminar, one hour. Corequisite: course M172. Exploration of nature, history, models, and propositions of care, care work, disability, disability justice movement, and health care. Consideration of intersections, interdependence, and complexities of formal and informal care webs and care economies between caregivers and receivers, which includes kin, advocates, disability communities, and health professionals. Use of multi-media, scholarly texts, and theoretical frameworks from disability justice, disability studies, film, gender studies, health, labor studies, law, nursing, and public policy to investigate the concepts of care and care work. Emphasis on community engagement with observational and collaborative interaction and learning in governmental, non-profit, community-based organizations, or health-care networks of disability care. Letter grading.

**M183. Being Human: Identity and Mental Illness. (5)** (Same as Honors Collegium M183 and Society and Genetics M183.) Seminar, three hours. Exploration of relationship between identity and mental illness through different approaches to nature and treatment of mental disorder, from biomedical accounts of brain-based pathology (and identity) to Mad Pride movement emphasis on mental diversity. Enduring philosophical questions regarding personal identity, consciousness, selfhood and mind-body relationship are investigated through consideration of conditions such as dissociative identity disorder, trauma, psychosis, autism, and depression. P/NP or letter grading.

**187. Special Topics in Disability Studies. (4)** Lecture, one hour; discussion, two hours (when scheduled). Variable topics in one area within disability studies. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Senior Research Seminars: Disability Studies. (5)** Seminar, three hours. Enforced requisite: course 101 or 101W. Designed for advanced junior/senior Disability Studies minors. In-depth study of major themes in disability studies research. Themes vary by instructor and term. Students pursue independent research related to course theme, with guidance

from instructor, then share and critique other student works in progress. May be repeated for credit with topic change. Letter grading.

**M191F. Topics in Gender and Disability. (5)** (Same as Gender Studies M191F.) Seminar, three hours. In-depth study of major themes in disability studies and gender studies. Themes vary by instructor and term. Students pursue independent research related to course theme, with guidance from instructor, then share and critique other student works in progress. May be repeated for credit with topic change. Letter grading.

**194. Capstone Research Seminar. (2)** Seminar, two hours. Enforced requisite: course 195CE. Required of students pursuing Disability Studies minor. Integration of off-campus work with academic theories and concepts within field of disability studies. Students report on their internship experiences and analyze relationship between their internship and issues of policy, ethics, systemic responses to community needs, or personal and intellectual transformations. Students identify one faculty mentor and develop proposal for required capstone research project. Letter grading.

**195CE. Community and Corporate Internships in Disability Studies. (4)** Tutorial, to be arranged; field-work, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend biweekly meetings with graduate student instructor, and write final research paper. Faculty mentor and graduate student instructor construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major; units applied must be taken for letter grade. May not be applied toward concentration or distribution requirements. Individual contract with supervising faculty member required. Letter grading.

**196. Research Apprenticeship in Disability Studies. (4)** Tutorial, one hour. Limited to junior/senior Disability Studies minors. Entry-level research apprenticeship under guidance of faculty mentors affiliated with Disability Studies minor. Collaboration with faculty mentors on their research in area related to disability studies. May be repeated for credit. Individual contract required. Letter grading.

**198A-198B. Honors Research in Disability Studies. (2-4)** Tutorial, one hour. Enforced requisite: course 101 or 101W. Course 198A is enforced requisite to 198B. Limited to juniors/seniors. Required capstone course to Disability Studies minor for students pursuing College Honors. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. In Progress (198A) and letter (198B) grading.

**198C. Honors Research in Disability Studies. (2 to 3)** Tutorial, one hour. Limited to juniors/seniors. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199A-199B. Directed Research in Disability Studies. (2-4)** Tutorial, one hour. Enforced requisite: course 101 or 101W. Course 199A is enforced requisite to 199B. Limited to juniors/seniors. Required capstone course to Disability Studies minor. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. In Progress (199A) and letter (199B) grading.

**199C. Senior Project in Disability Studies. (2 to 3)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate,

or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# EARTH, PLANETARY, AND SPACE SCIENCES

College of Letters and Science

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Edwin A. Schauble, PhD, *Chair*

## Faculty Roster

### Professors

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Jonathan M. Aurnou, PhD  
T. Mark Harrison, PhD  
David K. Jacobs, PhD  
David C. Jewitt, PhD  
Abby Kavner, PhD  
Carolina R. Lithgow-Bertelloni, PhD (*Louis B. and Martha B. Slichter Endowed Professor of Geosciences*)  
Craig E. Manning, PhD  
Jean-Luc Margot, PhD  
Kevin D. McKeegan, PhD  
Jonathan L. Mitchell, PhD  
William I. Newman, PhD  
David A. Paige, PhD  
Gilles F. Peltzer, PhD  
Edwin A. Schauble, PhD  
Hilke E. Schlichting, PhD  
J. William Schopf, PhD  
Lars P. Stixrude, PhD  
Tina I. Treude, PhD  
Aradhna K. Tripathi, PhD  
Marco C. Velli, PhD  
An Yin, PhD  
Edward D. Young, PhD

### Professors Emeriti

Peter Bird, PhD  
Friedrich H. Busse, PhD  
Paul M. Davis, PhD  
Wayne A. Dollase, PhD  
Clarence A. Hall, Jr., PhD  
Raymond V. Ingersoll, PhD  
Margaret G. Kivelson, PhD  
Robert L. McPherron, PhD  
Arthur L. Montana, PhD  
Walter E. Reed, PhD  
Bruce N. Runnegar, PhD  
Christopher T. Russell, PhD  
Gerald Schubert, PhD  
Ronald L. Shreve, PhD  
Raymond J. Walker, PhD

### Associate Professors

Caroline D. Beghein, PhD

Lingsen Meng, PhD (*Leon and Joanne V.C. Knopoff Professor of Physics and Geophysics*)

Seugli Moon, PhD  
Ulrike Seibt, PhD

### Assistant Professors

Mackenzie D. Day, PhD  
Hao Cao, PhD  
Peng Ni, PhD

### Adjunct Professors

Yingjuan Ma, PhD  
Robert C. Newton, PhD  
Edward J. Rhodes, PhD

## Overview

The disciplines of geology, geochemistry, geophysics, paleobiology, and space physics are concerned with the structure and evolution of the solar system, Earth, and life: essentially, the physical environment and its interaction with biota. These studies entail the application of fundamental physics and chemistry to a broad subject area stretching from astronomy at one extreme to biology at the other. Areas that are emphasized in the Department of Earth, Planetary, and Space Sciences include isotope and trace element analyses, petrology and mineralogy, sedimentology, paleobiology and organic geochemistry, structural geology and tectonophysics, seismology, the Earth's interior, planetary physics, and space plasmas.

## Career Prospects

The variety of techniques applied lead to several concentrations within the three main disciplines. Students completing their studies with a BS or MS degree usually are employed by industry. Many are employed in environment-related activities; others are involved in mineral or oil exploration or in construction. Students attaining the PhD degree are usually employed by universities or governmental and industrial research groups.

The Bachelor of Arts program in Earth and Environmental Science is intended to provide a broad background in Earth sciences that is especially appropriate for students intending to become K through 12 teachers in Earth, physical, or life sciences. It may also be of interest to students who plan careers in business, dentistry, environmental sciences, government, journalism, law, medicine, or public health. Those who intend to become professional geologists, geochemists, or geophysicists and/or to continue into graduate studies in Earth or space sciences are urged to pursue one of the BS degrees.

## Undergraduate Majors

### Earth and Environmental Science BA

#### Capstone Major

The Earth and Environmental Science major is a designated capstone major. Students are re-

quired to use skill and knowledge sets from previous coursework to complete a field-based research project from conception to written report. Projects must be placed into context within the current state of understanding, and results are presented at a research symposium or published as a brief report.

### Learning Outcomes

The Earth and Environmental Science major has the following learning outcomes:

- Use of skills and knowledge set from coursework
- Definition of research methodology and data
- Placement of project into context of current state of understanding
- Completion of research project from conception to written report
- Oral presentation at a research symposium, or brief published report, of field experience results

### Entry to the Major

#### Transfer Students

Transfer applicants to the Earth and Environmental Science major with 90 or more quarter units (60 semester units) must have completed one introductory Earth sciences course with laboratory, one general chemistry course with laboratory for majors, and one calculus course. One introductory biology course (evolution) with laboratory, a second general chemistry course, and one calculus-based physics course with laboratory are recommended.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Earth, Planetary, and Space Sciences 1 (or any course from Earth, Planetary, and Space Sciences 3 through 17 or Clusters 70A); one course from Earth, Planetary, and Space Sciences 51, 61, or M71; Chemistry and Biochemistry 14A, 14B, and 14BL, or 20A, 20B, and 20L; Life Sciences 7B or another introductory organismic biology course; Mathematics 3A and 3B, or 31A and 31B; Physics 1A or 5A.

#### The Major

*Required:* Two courses from Earth, Planetary, and Space Sciences 103A, 103B, 111, 112; one capstone 199 research course in the senior year; four additional upper-division courses from Earth, Planetary, and Space Sciences other than M187, and 189 through 199; two courses from Geography 101, M102, M103, 116, 120, M126, M131, 136.

### Policies

#### Preparation for the Major

Each course must be passed with a minimum grade of C-.

## Engineering Geology BS

### Capstone Major

The Engineering Geology major is a designated capstone major. Students are required to use skill and knowledge sets from previous coursework to complete a field-based research project from conception to written report. Projects must be placed into context within the current state of understanding, and results are presented at a research symposium or published as a brief report.

### Learning Outcomes

The Engineering Geology major has the following learning outcomes:

- Use of skills and knowledge set from coursework
- Definition of research methodology and data
- Placement of project into context of current state of understanding
- Completion of research project from conception to written report
- Oral presentation at a research symposium, or brief published report, of field experience results

### Entry to the Major

#### Transfer Students

Transfer applicants to the Engineering Geology major with 90 or more quarter units (60 semester units) must have completed one introductory Earth sciences course with laboratory, one general chemistry course with laboratory for majors, and one year of calculus. A second general chemistry course and one course of calculus-based physics with laboratory are recommended.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Three courses from Earth, Planetary, and Space Sciences 1 (or any course from Earth, Planetary, and Space Sciences 3 through 17 or Clusters 70A), 51, 61, M71; Chemistry and Biochemistry 20A, 20B, 20L; Civil and Environmental Engineering M20; Mathematics 31A, 31B, 32A, 33A; Physics 1A, 1B, 1C, 4AL, 4BL. Recommended: Mathematics 32B.

#### The Major

*Required:* Earth, Planetary, and Space Sciences 103A, 103B, 111, 112, 136A, 139; four courses selected from Civil and Environmental Engineering 108, 120, 121, 125, 129L, 150, 151, C158; two capstone field research courses (Earth, Planetary, and Space Sciences 121, 121F).

### Policies

#### Preparation for the Major

Each course must be passed with a minimum grade of C-.



## Geology BS

### Capstone Major

The Geology major is a designated capstone major. Students are required to use skill and knowledge sets from previous coursework to complete a field-based research project from conception to written report. Projects must be placed into context within the current state of understanding, and results are presented at a research symposium or published as a brief report.

### Learning Outcomes

The Geology major has the following learning outcomes:

- Use of skills and knowledge set from coursework
- Definition of research methodology and data
- Placement of project into context of current state of understanding
- Completion of research project from conception to written report
- Oral presentation at a research symposium, or brief published report, of field experience results

### Entry to the Major

#### Transfer Students

Transfer applicants to the Geology major with 90 or more quarter units (60 semester units) must have completed one introductory Earth sciences course with laboratory, one calculus course, and one general chemistry course with laboratory for majors. A second calculus course and a second general chemistry course are recommended.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Earth, Planetary, and Space Sciences 1 (or any course from Earth, Planetary, and Space Sciences 3 through 17 or Clusters 70A), 51, 61, M71; Chemistry and Biochemistry 14A, 14B, and 14BL, or 20A, 20B, and 20L; Life Sciences 7B; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 1A, 1B, 4AL, and 4BL, or 5A and 5B.

#### The Major

*Required:* Earth, Planetary, and Space Sciences 103A, 103B, 111, 112; two capstone field research courses (121, 121F); five additional 100-level Earth, planetary, and space sciences courses (except Earth, Planetary, and Space Sciences M187, and 189 through 199).

Students may opt to take courses from the following groups.

*Computational Geosciences:* Earth, Planetary, and Space Sciences 136A, 150, M171

*Geobiology:* Earth, Planetary, and Space Sciences CM114A, CM114B, 116, M118

*Geochemistry:* Earth, Planetary, and Space Sciences 103C, C106, C107, C109, C113, 152, 153

*Planetary science:* Earth, Planetary, and Space Sciences 136A, C143, 155, C179

*Surface processes:* Earth, Planetary, and Space Sciences 136A, C143, 150, C162, 165

*Tectonics/Structural Geology:* Earth, Planetary, and Space Sciences 119, 133, 136A, 165

### Honors Program

The honors program in geology is intended to provide exceptional students an opportunity for advanced research and study under the tutorial guidance of a faculty member.

Students must complete a minimum of two terms (8 units) of Earth, Planetary, and Space Sciences 198 leading to the preparation of a satisfactory honors thesis.

### Policies

#### Preparation for the Major

Each course must be passed with a minimum grade of C–.

#### Honors Program

Requirements for admission to candidacy are the same as those required for admission to the Honors Programs of the College of Letters and Science. Qualified students wishing to enter the program must submit a completed application form to the departmental honors committee near the end of their junior year. Honors in geology are awarded at graduation to those students who have a cumulative grade-point average of 3.5, have completed at least 90 graded units at the University of California, and have completed a minimum of two terms (8 units) of Earth, Planetary, and Space Sciences 198 leading to the preparation of a satisfactory honors thesis. Students demonstrating exceptional ability are awarded highest honors.

## Geophysics BS

### Capstone Major

The Geophysics major is a designated capstone major. Students are required to use skill and knowledge sets from previous coursework to complete a field-based research project from conception to written report. Projects must be placed into context within the current state of understanding, and results are presented at a research symposium or published as a brief report.

### Learning Outcomes

The Geophysics major has the following learning outcomes:

- Use of skills and knowledge set from coursework
- Definition of research methodology and data
- Placement of project into context of current state of understanding
- Completion of research project from conception to written report
- Oral presentation at a research symposium, or brief published report, of field experience results

### Entry to the Major

#### Transfer Students

Transfer applicants to the Geophysics major with 90 or more quarter units (60 semester units) must have completed one introductory Earth sciences course with laboratory, one general physics course with laboratory for majors, and one year of calculus. A third calculus course and a second calculus-based physics with laboratory course are recommended.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Earth, Planetary, and Space Sciences 51, 61, M71, and one course from 1 (preferred) through 15; Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL, 4BL.

#### The Major

*Required Core:* Earth, Planetary, and Space Sciences 136A, 171, one capstone field research course (136C), one course from 152, 153, 154, 155; Physics 105A, 105B, 110A, 110B, 131.

At least three courses from one of the following areas are also required: (1) *applied geophysics*—Earth, Planetary, and Space Sciences 111, 112, 122, 136B, M140, 150, 152, (2) *marine geophysics*—courses 119, 122, 136B, M140, 150, 153, (3) *planetary geophysics*—courses M140, 150, 153, 154, 155, (4) *solid earth geophysics*—courses 119, 122, 136B, M140, 150, 152, or (5) *space physics*—Atmospheric and Oceanic Sciences C170, Earth, Planetary, and Space Sciences 136B, M140, 154, 155, Physics M122. Any course used to satisfy an area requirement cannot also be applied toward the core requirements listed above.

### Honors Program

The honors program in geophysics is intended to provide exceptional students an opportunity for advanced research and study under the tutorial guidance of a faculty member.

Students must complete a minimum of two terms (8 units) of Earth, Planetary, and Space Sciences 198 leading to the preparation of a satisfactory honors thesis.

### Policies

#### Preparation for the Major

Each course must be passed with a minimum grade of C–.

#### The Major

Substitutions of equivalent courses from engineering or other physical sciences departments must be approved by the undergraduate adviser.

#### Honors Program

Requirements for admission to candidacy are the same as those required for admission to the Honors Programs of the College of Letters and Science. Qualified students wishing to enter

the program must submit a completed application form to the departmental honors committee near the end of their junior year. Honors in geophysics are awarded at graduation to those students who have a cumulative grade-point average of 3.5, have completed at least 90 graded units at the University of California, and have completed a minimum of two terms (8 units) of Earth, Planetary, and Space Sciences 198 leading to the preparation of a satisfactory honors thesis. Students demonstrating exceptional ability are awarded highest honors.

## Undergraduate Minors

### Earth and Environmental Science Minor

In the Earth and Environmental Science minor students study the interaction of the solid Earth, oceans, and atmosphere with human activities. The minor provides background in Earth sciences that is especially appropriate for students intending to become K through 12 teachers in Earth, physical, or life sciences. It may also be of interest to students who plan careers in business, dentistry, environmental sciences, government, journalism, law, medicine, or public health.

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (8 or 9 units):* Earth, Planetary, and Space Sciences 1 (or any course from Earth, Planetary, and Space Sciences 3 through 17 or Clusters 70A), and one course from Earth, Planetary, and Space Sciences 51, 61, or M71; or two courses from Earth, Planetary, and Space Sciences 51, 61, or M71.

*Required Upper-Division Courses (20 units minimum):* Five 100-level Earth, planetary, and space sciences courses (except Earth, Planetary, and Space Sciences M187, and 189 through 199).

#### Policies

A minimum of 20 upper-division units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Geochemistry Minor

Geochemistry emphasizes use of minerals, magmas, elements, and isotopes to date events, determine rates, and track matter through its cycles in the planets and biosphere. These skills are valuable in environmental and natural-resource work and anthropology, as well as in studying the histories of the planets.

### Admission

To enter the Geochemistry minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (9 units):* Earth, Planetary, and Space Sciences 1 (or any course from Earth, Planetary, and Space Sciences 3 through 17 or Clusters 70A), 51.

*Required Upper-Division Courses (20 to 26 units):* Two courses from Earth, Planetary, and Space Sciences C106, C107, C109, and three courses from 103A, 103B, 103C, C106 or C107 or C109 (whichever course was not applied above), C113, CM114A or CM114B, 152, 153.

#### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Geology Minor

Geology is the study of the surface of the Earth and the rocks and processes that created it. Field methods, interpretation of rocks, and modern plate-tectonic models are emphasized, with the goals of finding valuable or hazardous materials and inferring geologic history. These skills are valuable in engineering, urban planning, and environmental and resource studies.

#### Admission

To enter the Geology minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (8 or 9 units):* Earth, Planetary, and Space Sciences 1 (or any course from Earth, Planetary, and Space Sciences 3 through 17 or Clusters 70A), and one course from Earth, Planetary, and Space Sciences 51, 61, or M71; or two courses from Earth, Planetary, and Space Sciences 51, 61, or M71.

*Required Upper-Division Courses (22 units):* Two courses from Earth, Planetary, and Space Sciences 103A, 103B, 111, 112, and three additional 100-level Earth, planetary, and space sciences courses (except Earth, Planetary, and Space Sciences M187, and 189 through 199).

#### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the mi-

nor. Successful completion of the minor is indicated on the transcript and diploma.

### Geophysics and Planetary Physics Minor

Classical physics, supported by field data, mathematics, and computing, is used to understand diverse processes from ocean circulation and earthquakes to the formation of planets and the flow of particles and electromagnetic fields in space. These skills are valuable in environmental, engineering, and resource studies and more broadly in any kind of career that requires quantitative analysis.

#### Admission

To enter the Geophysics and Planetary Physics minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (8 or 9 units):* Earth, Planetary, and Space Sciences 1 (or any course from Earth, Planetary, and Space Sciences 3 through 17, 51, 61, or Clusters 70A), M71.

*Required Upper-Division Courses (20 units):* Earth, Planetary, and Space Sciences 136A, M171, and three courses from M140, 152, 153, 154, 155.

#### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Geochemistry MS, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Geology MS, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.



## Geophysics and Space Physics MS, PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Planetary Science MS, PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Earth, Planetary, and Space Sciences

### Lower-Division Courses

**1. Introduction to Earth Science. (5)** Lecture, three hours; laboratory, two hours; field days. Not open to students with credit for or currently enrolled in course 100. Elements of Earth science; study of Earth materials; nature and interpretation of geologic evidence; study of geologic processes; historical aspects of geology. Mandatory field trips introduce students to solving of geologic problems in field. P/NP or letter grading.

**3. Astrobiology. (5)** Lecture, three hours; discussion, one hour. Origin, evolution, distribution, and future of life on Earth and in universe. Course material primarily from planetary and Earth sciences, paleontology and biology, astronomy, chemistry, and physics. P/NP or letter grading.

**5. Environmental Geology of Los Angeles. (4)** Lecture, three hours; discussion, two hours; field trips. Geologic hazards and natural resources of greater Los Angeles region. Topics include Los Angeles geologic hazards such as earthquakes, landslides, and floods; Southern California oil fields; gold and gem mining in region; local beach processes; and Los Angeles water resource problems. Field trips to San Andreas fault, California aqueduct, active landslides, and historic gold mines. P/NP or letter grading.

**M7. Perils of Space: Introduction to Space Weather. (4)** (Same as Atmospheric and Oceanic Sciences M7.) Lecture, four hours. Concepts of plasma physics. Dynamic sun, solar wind, and Earth's magnetosphere and ionosphere. Space storms and substorms and their impacts on astronauts, spacecraft, and surface power and communication grids. P/NP or letter grading.

**8. Earthquakes. (5)** Lecture, three hours; laboratory, one hour; one field day. Causes and effects of earthquakes. Plate motion, frictional faulting, earthquake instability, wave propagation, earthquake damage, and other social effects. Hazard reduction through earthquake forecasting and earthquake-resistant design. P/NP or letter grading.

**9. Solar System and Planets. (4)** Lecture, three hours; discussion, one hour. Properties of sun, planets, asteroids, and comets. Astronomical observations relevant to understanding solar system and its origin. Dynamical problems, including examination of fallacious hypotheses. Meteoritic evidence regarding earliest his-

tory of solar system. Chemical models of solar nebula. Space exploration and its planning. P/NP or letter grading.

**10. Exploring Mars, Red Planet. (4)** Lecture, three hours; discussion, one hour. History and future of Mars exploration, origin of planet, surface materials, and atmosphere. History of climate. Questions regarding water and life. Scientific and practical issues in mission design. P/NP or letter grading.

**13. Natural Disasters. (5)** Lecture, three hours; discussion, one hour; one field day. Global urbanization together with historical demographic population shift to coastal areas, especially around Pacific Ocean's Ring of Fire, are placing increasingly large parts of this planet's human population at risk due to earthquakes, volcanos, and tsunamis. Global climate change combines with variety of geologic processes to create enhanced risks from catastrophic mass movements (e.g., landslides), hurricanes, floods, and fires. Exploration of physical processes behind natural disasters and discussion of how these natural events affect quality of human life. P/NP or letter grading.

**15. Blue Planet: Introduction to Oceanography. (5)** Lecture, three hours; laboratory, two hours. Not open for credit to students with credit for or currently enrolled in Ecology and Evolutionary Biology 25. General introduction to geological, physical, chemical, and biological processes and history of Earth's global ocean system. P/NP or letter grading.

**16. Major Events in History of Life. (5)** Lecture, three hours; laboratory, two hours. Designed for nonmajors. History of life on Earth as revealed through fossil record. P/NP or letter grading.

**17. Dinosaurs and Their Relatives. (5)** Lecture, three hours; laboratory, two hours; one optional field trip. Designed for nonmajors. Exploration of biology, evolution, and extinction of dinosaurs and close relatives, in context of history of biosphere. Information from paleontology, biology, and geology. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Natural History of Southern California. (5)** Lecture, two hours; laboratory, three hours; five field weekends. Identification, distribution, diversity of native plants and communities; identification and interpretation of rocks, minerals, and geologic features and geologic history of physiographic regions of Southern California. Emphasis on field-based learning. P/NP or letter grading.

**51. Mineralogy: Earth and Planetary Materials. (5)** Lecture, three hours; laboratory, four hours. Enforced requisite: course 1. Recommended: completion of chemistry requirement. Principles of mineralogy. Mineral structure and bonding and crystal chemistry, with focus on materials of interest for Earth and planetary sciences and major rock-forming minerals. Laboratory study of relationship between mineral structure and properties, including hand sample identification, microscopy (optical and electron), X-ray diffraction, and spectroscopy techniques. P/NP or letter grading.

**61. Geologic Maps. (4)** Lecture, two hours; laboratory, three hours; five field days. Enforced requisite: course 1. Planning, creation, and interpretation of geologic maps, including both practical and philosophical problems that arise. Topographic and geologic mapping in field. Interpretation of published maps in laboratory. P/NP or letter grading.

**M71. Introduction to Computing for Geoscientists. (4)** (Same as Atmospheric and Oceanic Sciences M71.) Lecture, three hours; laboratory, 90 minutes; outside computing study, six to 10 hours. Introduction to writing programs, visualization of geoscience data, and comparison with models. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Principles of Earth Science. (4)** Lecture, three hours. Designed for nonmajors. Not open to students with credit for course 1. Fundamentals of physical geology and Earth history; major problems of geology, such as continental drift and development of large-scale features of Earth; physical and biological evolution. P/NP or letter grading.

**101. Earth's Energy: Diminishing Fossil Resources and Prospects for Sustainable Future. (4)** Lecture, three hours; laboratory, two hours; two optional field trips. Preparation: one lower-division atmospheric sciences, chemistry, Earth sciences, or physics course. Earth's energy resources (fossil fuels and alternatives) from Earth science and sustainability perspective. P/NP or letter grading.

**103A. Igneous Petrology. (5)** Lecture, two to three hours; laboratory, six hours; field trips. Enforced requisites: course 51, Chemistry 14B and 14BL, or 20B and 20L, Mathematics 3B or 31B. Mineralogy, chemical composition, and field occurrence of igneous rocks with reference to their origin by melting in earth. Introduction to thermodynamics as applied to petrology. Formation of magma, its movement, eruption, crystallization, and chemical evolution. Petrologic structure of crust and mantle and its relation to seismology. Overview of petrological and chemical evolution of Earth, moon, and other planets from their origin to present. P/NP or letter grading.

**103B. Sedimentary Petrology. (5)** Lecture, two to three hours; laboratory, six hours; field trips. Enforced requisite: course 103A. Recommended: course 61. Study of sedimentary rocks based on characteristics of sedimentary particles and dynamics of depositional processes. Lectures focus on development of depositional facies models, and laboratories emphasize recognition of sedimentary deposits from each major depositional facies. P/NP or letter grading.

**103C. Metamorphic Petrology. (5)** Lecture, two to three hours; laboratory, six hours; field trips. Enforced requisite: course 103A. Interpretation of metamorphic rocks based on field occurrence, mineralogical composition, texture, and application of physical and chemical principles. P/NP or letter grading.

**C106. Physical Geochemistry. (4)** Lecture, three hours. Requisite: course 51. Basic principles of physical chemistry for geologic applications. Thermodynamics and kinetics of reactions among minerals, natural waters, and magmas; construction and interpretation of phase diagrams; case studies of important geochemical and environmental issues. Concurrently scheduled with course C206. P/NP or letter grading.

**C107. Geochemistry. (4)** Lecture, three hours; discussion, one hour. Designed for junior/senior and graduate physical sciences students. Origin and abundance of elements and their isotopes; distribution and chemistry of elements in Earth and its environment. Concurrently scheduled with course C207. P/NP or letter grading.

**C109. Isotope Geochemistry. (4)** Lecture, three hours; discussion, one hour. Designed for junior/senior and graduate physical and biological sciences students. Theoretical aspects of isotope behavior: stable and radiogenic isotopes. Principles of geochronology. Use of isotopes as tracers in crust and mantle processes.

Stable isotopes as indicators of environment and paleoclimate. Concurrently scheduled with course C209. P/NP or letter grading.

**111. Stratigraphic and Field Geology. (6)** Lecture, two hours; laboratory, three hours; fieldwork, eight hours per week. Enforced requisites: courses 61, 112. Principles of stratigraphy; geologic mapping of selected area; preparation of geologic report. Letter grading.

**111G. Field Geology. (2 to 4)** Lecture, two hours; laboratory, three hours; fieldwork, one day per week. Designed for graduate students. Geologic mapping, principles of stratigraphy, structural geology, and map interpretation. S/U or letter grading.

**112. Structural Geology. (5)** Lecture, three hours; laboratory, six hours. Requisites: courses 1, 61. Recommended: course 51. Planar and linear structures at different scales in sedimentary, metamorphic, and igneous rocks. Faults and folds, their description, classification, and kinematic and dynamic analysis. Deformation, strength, fracture, and rheological properties of rocks. P/NP or letter grading.

**C113. Biological and Environmental Geochemistry. (4)** Lecture, three hours. Requisites: Chemistry 14A and 14B (or 20A and 20B), Mathematics 3A, 3B, and 3C (or 31A and 31B). Recommended: at least one lower-division Earth, planetary, and space sciences course. Intended for junior/senior life and physical sciences students. Study of chemistry of Earth's surface environment and interplay between biology, human activity, and geology. Introduction to origin and composition of Earth, including atmosphere, crust, and hydrosphere. Examination of how these reservoirs are affected by biological cycles and feedbacks to biological evolution and diversity. Local and global-scale movements of biologically important elements like carbon, nitrogen, and phosphorus. Concurrently scheduled with course C213. P/NP or letter grading.

**CM114A. Aquatic Geomicrobiology: Metabolisms. (4)** (Formerly numbered CM114.) (Same as Atmospheric and Oceanic Sciences CM114A.) Lecture, three hours. Recommended requisite: course C107 or Atmospheric and Oceanic Sciences M105. Study of fundamental geomicrobiological metabolisms and biogeochemical reactions occurring in aquatic systems and how these processes interact with environment. Metabolisms include photoautotrophic (anoxygenic and oxygenic photosynthesis), chemoheterotrophic (fermentation and respiration of organic matter), photoheterotrophic (organic matter degradation with light), and chemoautotrophic (iron, nitrogen, manganese, methane, and sulfur oxidation) pathways. Introduction of principals of bioenergetics (adenosine triphosphate production, Gibbs free energy, chemiosmosis, thermodynamic calculations) and biological isotope fractionation. Concurrently scheduled with course CM214A. P/NP or letter grading.

**CM114B. Aquatic Geomicrobiology: Environments. (4)** (Same as Atmospheric and Oceanic Sciences CM114B.) Lecture, three hours. Recommended requisite: course CM114A. Broad overview of aquatic geomicrobiological processes in diverse environmental settings (e.g., sediments, microbial mats, water column, wetlands, cold seeps, hydrothermal vents, deep biosphere), and how these processes drive element cycling on Earth. Concurrently scheduled with course CM214B. P/NP or letter grading.

**116. Paleontology. (4)** Lecture, three hours; laboratory, three hours; field trips. Requisite: Life Sciences 7A or 7B. Review of major groups of fossil organisms and their significance in geology and biology. P/NP or letter grading.

**M118. Advanced Paleontology. (4)** (Same as Ecology and Evolutionary Biology M145.) Lecture, three hours. Requisite: course 116 or Ecology and Evolutionary Biology 110 or 117. Consideration of major factors that have influenced history of life, including analytical approaches to analyzing patterns in fossil record, nature of rock record, and contribution of data from stable isotopes, functional morphology, phylogenetics, and developmental biology. P/NP or letter grading.

**119. Continental Drift and Plate Tectonics. (4)** Lecture, three hours; computer laboratory/discussion, one hour. Requisite: course 1 or 100. Designed for juniors/

seniors in physical sciences. Exploration of history and phenomenology of plate tectonics theory, with particular focus on observables and kinematics. Evidence supporting plate tectonics theory (magnetic anomalies, seismicity, gravity). Tectonic, igneous, and metamorphic processes at plate boundaries. Focus on plate kinematics both past and present and learn how to compute and plot velocities. Exploration of plate dynamics including driving mechanism and convection. P/NP or letter grading.

**120. Rubey Colloquium: Major Advances in Earth, Planetary, and Space Sciences. (4)** Lecture, three hours. Designed for juniors/seniors. Lectures on major advances in Earth science offered by distinguished authorities (including regular faculty members). Supervision of continuity and assessment of student performance by faculty member. Content varies from year to year. If laboratory work is required, course 199 must be taken concurrently. P/NP or letter grading.

**121. Advanced Field Geology. (4)** Lecture, two hours. Requisites: courses 61, 103A, 111, 112. Problems in regional geology and field research; preparation of written geologic reports. P/NP or letter grading.

**121F. Advanced Field Geology: Fieldwork. (4)** Fieldwork, 20 hours. Advanced techniques in field geologic mapping and preparation of geologic maps and cross-sections, including igneous, metamorphic, and sedimentary terrains. P/NP or letter grading.

**122. Introduction to Seismology. (4)** Lecture, three hours; discussion, two hours. Enforced requisites: Mathematics 31A, 31B, 32A, Physics 1A (or 1AH), 1B (or 1BH). Recommended: course 71, Mathematics 33B. Earth mantle and core. Elasticity, seismic wave equation, ray theory, travel time inversion, surface waves, free oscillations. Earthquakes and source theory. P/NP or letter grading.

**123. Geosciences Outreach. (4)** Lecture, two hours; discussion, two hours; field days. Recommended requisites: at least three college-level life sciences or physical sciences courses. Introduction to pedagogical approaches and methods used in geosciences community to educate demographically diverse populations, including K-12 through higher-education audiences and general public. Focus on development of motivational and public communication skill sets as practiced at outreach events and demonstrations, including communication of science in multicultural settings. Active participation required in minimum of three scheduled outreach events over course of term, providing perspective and basis for follow-up discussions on critical geosciences literacy at local, state, and national levels. Letter grading.

**125. Volcanoes. (4)** Lecture, three hours; laboratory, three hours; field trip(s). Requisite: course 1. Recommended: course 103A, Physics 1A or 1AH or 6A. Types of volcanism. Physics of magma chambers, volcanic plumbing, explosive and effusive eruptions as illustrated by historical examples. Practical methods of volcano monitoring, with field trip. P/NP or letter grading.

**C126. Advanced Petrology. (4)** Lecture, three hours; laboratory, three hours; field trips. Enforced requisite: course 103A. Understanding genesis of igneous rocks based on geochemical, tectonophysical, and other geological evidence and principles. Concurrently scheduled with course C226. P/NP or letter grading.

**133. Historical and Regional Geology. (4)** Lecture, three hours; discussion, two hours; field trips. Requisite: course 61. Recommended requisite: course 112. Principles of historical geology. Physical evolution of Earth, especially North America. One area of Earth to be investigated in detail, with emphasis on its geologic evolution through time. Letter grading.

**136A. Applied Geophysics. (4)** Lecture, three hours; laboratory, three hours. Requisites: course M71; Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 1A, 1B, 4AL, and 4BL, or 5A and 5B. Methods and knowledge involved in investigation of near-surface geophysics. Covers gravity fields, wave equations, seismic ray theory, reflection and refraction, seismic interpretation, basic earthquake source theory, and introduction to magnetic fields and electrical resistivity. P/NP or letter grading.

**136B. Applied Geophysics. (4)** Lecture, three hours; laboratory/field trips, six hours. Preparation: knowledge of MATLAB. Enforced requisite: course 136A. Principles and techniques of exploration for mineral deposits using natural and artificial electric and magnetic fields. Methods include self potential, resistivity, induced polarization, electromagnetics, magnetotellurics, magnetics. P/NP or letter grading.

**136C. Field Geophysics. (6)** Lecture, three hours; discussion, one hour; laboratory, two hours; fieldwork, 10 hours. Enforced requisite: course 136A. Application of seismic, gravimetric, magnetic, electrical, and other geophysical methods to geologic and engineering problems. Practical aspects of geophysical exploration, including planning, data collection, data reduction, and interpretation. Fieldwork on unsolved problems (week-long field trip). P/NP or letter grading.

**137. Petroleum Geology. (4)** Lecture, three hours. Requisites: courses 61, 111. Geology applied to exploration for and production of natural gas and petroleum; techniques of surface and subsurface geology; problems of petroleum geology. P/NP or letter grading.

**139. Engineering and Environmental Geology. (4)** Lecture, three hours; discussion, one hour. Requisite: course 1 or 100. Recommended: course 111. Principles and practice of soil mechanics and foundation engineering in light of geologic conditions, recognition, prediction, and control or abatement of subsidence, landslides, earthquakes, and other geologic aspects of urban planning and subsurface disposal of liquids and solid wastes. P/NP or letter grading.

**M140. Introduction to Fluid Dynamics. (4)** (Same as Atmospheric and Oceanic Sciences M120.) Lecture, three hours; discussion, one hour. Corequisite: Physics 131. Fluid statics and thermodynamics. Kinematics. Conservation laws and equations of fluid motion. Circulation theorems and vorticity dynamics. Rotating frame. Irrotational flow. Letter grading.

**C141. Basin Analysis. (4)** Lecture, three hours; laboratory, three hours. Requisites: courses 103B, 111. Mechanisms of sedimentary basin development, flexural and thermal subsidence, isostasy, subsidence analysis, quantitative basin modeling, sediment provenance, tectonic settings. Concurrently scheduled with course C241. P/NP or letter grading.

**C143. Advanced Physical Sedimentology. (4)** Lecture, three hours; fieldwork, three hours. Requisites: courses 103B, 111, or equivalent. Advanced topics related to sediments, sedimentary rocks, and information that can be extracted from each. Interpretation of depositional environment from complex sedimentary structures and textures. Includes field and lecture component and builds on previous sedimentology basics. Concurrently scheduled with course C243. P/NP or letter grading.

**150. Remote Sensing for Earth Sciences. (4)** Lecture, three hours. Recommended requisites: courses 1, 61. Designed for juniors/seniors and graduate students. Remote sensing related to development of natural resources. Characteristics of electromagnetic spectrum and review of remote sensing devices. Applicability to land-use classification, soil survey, urban studies, vegetation classification; emphasis on geologic interpretation of imagery. P/NP or letter grading.

**152. Physics of Earth. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 33A, Physics 1C (or 1CH). Crust-to-core tour of Earth and physics used to explore it. Isostasy, plate tectonics, mantle convection, and geodynamo as discovered with tools of elasticity, fluid mechanics, and thermodynamics. P/NP or letter grading.

**153. Oceans and Atmospheres. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 31A, 31B, 32A, Physics 1A, 1B, and 1C (or 1AH, 1BH, and 1CH). Physics and chemistry of Earth's oceans and atmosphere; origin and evolution of planetary atmospheres; biogeochemical cycles, atmospheric radiation and climate, energetics and dynamics of oceanic and atmospheric circulation systems. P/NP or letter grading.

**154. Solar Terrestrial Physics. (4)** Lecture, three hours; discussion, one hour. Enforced requisite or corequisite: Physics 110A. Particle and electromagnetic emis-

sions from sun under quiet and under disturbed conditions. Solar wind. Magnetospheres and ionospheres of Earth and other planets. Geomagnetic phenomena and aurora. P/NP or letter grading.

**155. Planetary Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 31A, 31B, 32A, Physics 1A, 1B, and 1C (or 1AH, 1BH, and 1CH). Formation of solar nebula; origin of planets and their satellites; comets, asteroids, and meteorites; celestial mechanics and dynamics; physics of planetary interiors, surfaces, and atmospheres. P/NP or letter grading.

**M156. Introduction to Plasma Science and Engineering. (4)** (Same as Electrical and Computer Engineering M185 and Physics M122.) Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: Electrical and Computer Engineering 101A or Physics 110B. Senior-level introductory course on electrodynamics of charged particles and their collective behavior in plasmas in laboratory, near-Earth space and astrophysical settings. Covers selected applications taken from fusion energy, space weather, materials processing, generation of coherent radiation and particle accelerators. Letter grading.

**C160. Field Seminar. (2 to 6)** Seminar, three hours; discussion, one hour; fieldwork, five to 20 days. Requisite: course 61. Field-based teaching and discussion forum that varies in focus from general geology through structure and tectonics, sedimentology, igneous and metamorphic petrology, volcanology, or other subdisciplines as prescribed. May be repeated for credit. Concurrently scheduled with course C260. P/NP or letter grading.

**C162. Application of Remote Sensing in Field. (4)** Fieldwork, five hours; laboratory, two hours. Requisite: course 150. Application of remote-sensing techniques to field situations. Digital analysis and interpretation of near-infrared, thermal-infrared, and microwave data from satellites and aircraft. Field observation of study site in California desert for testing hypotheses during week between Winter and Spring Quarters. Concurrently scheduled with course C262. P/NP or letter grading.

**165. Tectonic Geomorphology. (4)** Lecture, three hours; laboratory, two hours. Enforced requisite: course 1 or 8. Recommended: courses 61, 119, Mathematics 31A. Interactions between tectonic, climate, and surface processes shape landscapes over days to millions of years. Focus on quantifying how tectonic and surface processes interact to govern landscape evolution. How landscapes can provide insights into physical and chemical surface processes, including bedrock weathering, soil formation, hillslope transport, and river and glacial erosion. How tectonics, climate, and underlying lithology may influence those processes in landscapes. P/NP or letter grading.

**M171. Advanced Computing in Geosciences. (4)** (Formerly numbered 171.) (Same as Atmospheric and Oceanic Sciences M171.) Lecture, four hours. Enforced requisites: course M71, Mathematics 3A, 3B, and 3C (or 31A and 31B). Use of high level computing language to program microcontrollers to acquire laboratory-style experimental data. Misfit modeling and quantitative comparisons of acquired data sets and theory. Forward modeling from fundamental equations. Examples, experiments, and exercises from disciplines within geosciences. P/NP or letter grading.

**CM173. Earth Process and Evolutionary History. (6)** (Same as Ecology and Evolutionary Biology CM173.) Lecture, four hours; laboratory, three hours. Requisites: Chemistry 14A, 14B (or 20A, 20B), Life Sciences 1, 2, 3, and 4, or 7A, 7B, and 7C (or 7A and introductory course in geology). Exploration of relationship between physical processes, such as tectonics and climate, and how they affect surface and impact biology of Earth. Study of evolution of universe, Earth, and life, with integration of history of science, including Darwinian evolution and plate tectonics revolutions. Study of formation of matter offers tools to understand geologic process of climate and ecology of Earth. Past climate change to examine expected future human-influenced climate. Consideration of major events in history of life on Earth. Data and methods from geology, genetics, and geochemistry are integrated to recon-

struct past events. This reveals how Earth processes shaped life and how life shaped Earth. Concurrently scheduled with course CM273. Letter grading.

**C179. Search for Extraterrestrial Intelligence: Theory and Applications. (4)** Lecture, two hours; laboratory, two hours. Enforced requisites: Mathematics 31B, Physics 1B. Recommended: course 71, Computer Science 31, Physics 110B, Program in Computing 10A. Search for extraterrestrial intelligence (SETI) is based on number of astronomical, mathematical, statistical, and computational principles. Coverage of fundamental concepts in these disciplines in context of SETI: abundance and architecture of extrasolar planetary systems; radio astronomy, including wave propagation and dispersion; signal processing, including sampling theory and Fourier transforms; random processes, including Gaussian and Poisson statistics, and algorithm development. Design of observational program, acquisition of telescopic data, development of algorithms to analyze data, and writing of report on results. Concurrently scheduled with course C279. P/NP or letter grading.

**M187. Careers in Earth System, Environment, and Space Sciences. (1)** (Same as Atmospheric and Oceanic Sciences M187 and Environment M187.) Seminar, one hour. Examination of central role of science in understanding and addressing grand challenges in climate, earth and environment, and space exploration through seminars given by scientists, engineers, managers, and entrepreneurs from national laboratories and industry. Includes tour of National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL). Students engage speakers on science, career preparation, opportunities for undergraduate internships, and building fulfilling careers. P/NP grading.

**188. Special Topics in Earth, Planetary, and Space Sciences. (4)** Lecture/laboratory, to be arranged. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**193A-193B-193C. Current Research in Earth, Planetary, and Space Sciences. (1-1-1)** Seminar, one hour. Limited to undergraduate students. Study of current topics in Earth, planetary, and space sciences, including participation in weekly department colloquium. May be repeated for credit. P/NP grading.

**C194. Research Topics in Earth, Planetary, and Space Sciences. (1)** Research group meeting, one to three hours. Designed for departmental students participating in research group. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. Concurrently scheduled with course C296. P/NP grading.

**198. Honors Research in Earth, Planetary, and Space Sciences. (4)** Tutorial, two hours. Limited to seniors. Individual research designed to broaden and deepen students' knowledge of some phase of Earth, planetary, and space sciences. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty mentor. May be repeated for maximum of 16 units. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Earth, Planetary, and Space Sciences. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Introduction to Geophysics and Space Physics I: Solid Earth and Planets. (4)** Lecture, three hours. Requisites: Physics 105A, 110A, 112, 131. Geochemistry, cosmochemistry, and petrology; geotectonics; gravity field; seismology; heat transfer, thermal and mechanical evolution of mantle; core and geomagnetism; lunar and planetary interiors. S/U or letter grading.

**200B. Introduction to Geophysics and Space Physics II: Oceans and Atmospheres. (4)** Lecture, three hours. Requisites: Physics 105A, 110A, 112, 131. Evolution, chemistry, and heat balance of oceans and atmospheres; molecular spectra, radiative transfer, and planetary observations; dynamics of oceans and atmospheres. S/U or letter grading.

**200C. Introduction to Geophysics and Space Physics III: Plasmas—Aeronomy and Interplanetary Medium. (4)** Lecture, three hours. Requisites: Physics 105A, 110B, 112, 131. Solar surface features, heating and expansion of corona, solar wind, plasma and magnetic fields, interaction of solar wind with Earth, magnetospheric phenomena. S/U or letter grading.

**200D. Planetary Surfaces. (4)** Lecture, three hours. Introduction to basic physical processes (both exogenic and endogenic) shaping solid surfaces in solar system and description of their optical and thermophysical properties, with emphasis on simple physics-based approach. Discussion of current literature. S/U or letter grading.

**200E. Planetary Origins and Evolution. (4)** Lecture, four hours. Designed for graduate students who are interested in origins of planetary systems and history of solar system. Open to advanced undergraduate students with consent of instructor. Provides background needed to understand and/or participate in research related to formation and evolution of solar system and of other planetary systems. Description of star/planet formation process and subsequent evolution of planetary systems by integrating observations and theory. Fosters interdisciplinary knowledge and communication between Departments of Earth, Planetary, and Space Sciences and Physics and Astronomy graduate students and faculty members. S/U or letter grading.

**201. Classical Mechanics. (4)** Lecture, three hours. Kinematics, variational principles and Lagrange equations, rotational dynamics. Hamilton equations of motion, linear and nonlinear perturbation theory, applications to solar system. S/U or letter grading.

**202. Continuum Mechanics. (4)** Lecture, three hours. Kinematics and dynamics of continuous media. Properties of stress, strain, and rate-of-strain tensors. Conservation laws. Elasticity and viscosity. Heat transfer, boundary layers, and dynamical similarity. S/U or letter grading.

**203. Numerical Methods for Geosciences. (6)** Lecture, four hours. Preparation: knowledge of programming language. Requisite: Mathematics 33B. Computational precision and algorithms, linear algebra, nonlinear equations, functional approximation, integration, ordinary and partial differential equations, spectral and finite element methods, parallel computing. Sample programming exercises from Earth and space sciences. Letter grading.

**205. Inverse Theory and Data Interpretation. (4)** Lecture, three hours. Requisites: Mathematics 115A, 170A, 170B, 171. Inverse modeling problem—determination of model parameters consistent with experimental data, considering effects of random errors and nonuniqueness. Emphasis on linear and quasi-linear problems; nonlinear problems also discussed. Tools used include matrix theory, quadratic forms, orthogonal rotations, statistics, principal axis transformation

for rectangular matrices, Bachus/Gilbert resolving kernels, and Lagrange multipliers. Examples from broad range of physical sciences. S/U or letter grading.

**C206. Physical Geochemistry. (4)** Lecture, three hours. Requisite: course 51. Basic principles of physical chemistry for geologic applications. Thermodynamics and kinetics of reactions among minerals, natural waters, and magmas; construction and interpretation of phase diagrams; case studies of important geochemical and environmental issues. Concurrently scheduled with course C106. Additional independent research project and oral presentation required of graduate students. S/U or letter grading.

**C207. Geochemistry. (4)** Lecture, three hours; discussion, one hour. Designed for junior/senior and graduate physical sciences students. Origin and abundance of elements and their isotopes; distribution and chemistry of elements in Earth and its environment. Concurrently scheduled with course C107. Additional homework and class presentation required of graduate students. S/U or letter grading.

**C209. Isotope Geochemistry. (4)** Lecture, three hours; discussion, one hour. Designed for junior/senior and graduate physical and biological sciences students. Theoretical aspects of isotope behavior: stable and radiogenic isotopes. Principles of geochronology. Use of isotopes as tracers in crust and mantle processes. Stable isotopes as indicators of environment and paleoclimate. Concurrently scheduled with course C109. Additional literature survey, that may result in class presentation, expected of graduate students. S/U or letter grading.

**210. Geochemical Kinetics: Thermochronometry. (4)** Lecture, three hours; discussion, one hour. Designed for graduate physical and biological sciences students. Theoretical basis and application of thermochronometry: derivation of diffusion equation and methods of solution, relationship between heat and mass diffusion and their simultaneous solution, Boltzmann/Matano analysis, multicomponent diffusion, closure theory;  $^{40}\text{Ar}/^{39}\text{Ar}$  systematics and interpretive models, multidiffusion domain theory, petrological applications. Letter grading.

**211. Mathematical Methods of Geophysics. (4)** Lecture, four hours. Requisites: Physics 105A, 110A, 112, 131. Recommended: Physics 132. Designed to provide mathematical background required for students pursuing PhD in Geophysics and Space Physics, as well as related programs in department. Extensive survey of these methods, with focus on geophysical applications consistent with needs that geophysics students encounter in their research. Letter grading.

**C213. Biological and Environmental Geochemistry. (4)** Lecture, three hours. Requisites: Chemistry 14A and 14B (or 20A and 20B), Mathematics 3A, 3B, and 3C (or 31A and 31B). Recommended: at least one lower-division Earth, planetary, and space sciences course. Intended for graduate life and physical sciences students. Study of chemistry of Earth's surface environment and interplay between biology, human activity, and geology. Introduction to origin and composition of Earth, including atmosphere, crust, and hydrosphere. Examination of how these reservoirs are affected by biological cycles and feedbacks to biological evolution and diversity. Local and global-scale movements of biologically important elements like carbon, nitrogen, and phosphorus. Concurrently scheduled with course C113. S/U or letter grading.

**CM214A. Aquatic Geomicrobiology: Metabolisms. (4)** (Formerly numbered CM214.) (Same as Atmospheric and Oceanic Sciences CM237A.) Lecture, three hours. Recommended requisite: course C107 or Atmospheric and Oceanic Sciences M105. Study of fundamental geomicrobiological metabolisms and biogeochemical reactions occurring in aquatic systems and how these processes interact with environment. Metabolisms include photoautotrophic (anoxygenic and oxygenic photosynthesis), chemoheterotrophic (fermentation and respiration of organic matter), photoheterotrophic (organic matter degradation with light), and chemoautotrophic (iron, nitrogen, manganese, methane, and sulfur oxidation) pathways. Introduction of principals of bioenergetics (adenosine triphosphate production, Gibbs free energy, chemios-

mosis, thermodynamic calculations) and biological isotope fractionation. Concurrently scheduled with course CM114A. S/U or letter grading.

**CM214B. Aquatic Geomicrobiology: Environments. (4)** (Same as Atmospheric and Oceanic Sciences CM237B.) Lecture, three hours. Recommended requisite: course CM214A. Broad overview of aquatic geomicrobiological processes in diverse environmental settings (e.g., sediments, microbial mats, water column, wetlands, cold seeps, hydrothermal vents, deep biosphere), and how these processes drive elemental cycling on Earth. Concurrently scheduled with course CM114B. S/U or letter grading.

**M217. Molecular Evolution. (4)** (Same as Ecology and Evolutionary Biology M231.) Lecture, two hours; discussion, two hours. Series of advanced topics in molecular evolution, with special emphasis on molecular phylogenetics. Topics may include nature of genome, neutral evolution, molecular clocks, concerted evolution, molecular systematics, statistical tests, and phylogenetic algorithms. Themes may vary from year to year. May be repeated for credit. S/U or letter grading.

**219. Planetary and Orbital Dynamics. (4)** Lecture, four hours. Planetary rotations, satellite orbits, and tidal dissipation; planetary orbital system; resonance effects and chaos; spin-orbit and orbit-orbit coupling; planetary rings. S/U or letter grading.

**220. Principles of Paleobiology. (4)** Lecture/discussion, three hours. Limited to graduate science students. Open to qualified undergraduate biological and physical sciences students with consent of instructor. Current and classic problems in paleobiology, with emphasis on interdisciplinary problems involving aspects of biology, geology, organic geochemistry, and cosmology. Content varies from year to year. May be repeated for credit. S/U or letter grading.

**221. Field Geology. (4)** Lecture, one hour; discussion, one hour; fieldwork, 10 days. Enforced requisite: course 121F. Planning, execution, and presentation of geologic mapping projects at professional level. Resolution of problems in Southern California geology from synthesis of new and published research. Field area varies from year to year. May be repeated for credit. S/U or letter grading.

**222. Introduction to Seismology. (4)** Lecture, three hours. Types of seismic waves; travel-time seismology; epicenter location; amplitude variations; seismograph theory; explosion seismology; seismicity; focal conditions; surface wave analysis; microseisms and tsunamis. S/U or letter grading.

**M224A. Elastodynamics. (4)** (Same as Mechanical and Aerospace Engineering M257A.) Lecture, four hours. Requisites: Mechanical and Aerospace Engineering M256A, M256B. Equations of linear elasticity, Cauchy equation of motion, constitutive relations, boundary and initial conditions, principle of energy. Sources and waves in unbounded isotropic, anisotropic, and dissipative solids. Half-space problems. Guided waves in layered media. Applications to dynamic fracture, nondestructive evaluation (NDE), and mechanics of earthquakes. Letter grading.

**225. Physics and Chemistry of Planetary Interiors. (4)** Lecture, four hours. Chemical compositions of Earth and planets; high-pressure and temperature effects, phase transitions, and equations of state; variations of density and temperature with depth; thermal and compositional evolution. S/U or letter grading.

**C226. Advanced Petrology. (4)** Lecture, three hours; laboratory, three hours; field trips. Requisite: course 103A. Designed for graduate students. Understanding genesis of igneous rocks based on geochemical, tectonophysical, and other geological evidence and principles. Concurrently scheduled with course C126. Graduate students required to read more recommended references, make class presentations on particular topics resulting from that reading, and lead seminar-type discussions on their selected topics. S/U or letter grading.

**227. Mars. (4)** Lecture, three hours. Limited to graduate students. Results of recent and ongoing missions to Mars are revising many aspects of our understanding of planet and its history. Study highlights major revolutions in thinking about planet, and pro-

vides comprehensive overviews as well as current controversies related to Mars' core and magnetism, thermal evolution and volcanism, geology and cratering history, volatiles and climate, atmosphere and its interaction with space environment, and potential pre-biological and biological history. S/U or letter grading.

**228. Introduction to Planetary Dynamos. (4)** Lecture, three hours; laboratory/discussion, 90 minutes. Requisites: courses 200A, 200B, 200C. Designed for graduate students. Basic principles of planetary dynamo generation. Planetary core dynamics and core convection; mean field dynamo theory; kinematic dynamo theory; survey of modeling techniques and results. S/U or letter grading.

**M229. Planetary Atmospheres and Climates. (4)** (Same as Atmospheric and Oceanic Sciences M210.) Lecture, three hours. Enforced requisite: Physics 1C. Planetary atmospheric structure and composition, radiative transfer, and climate dynamics. Topics include origin and evolution of atmospheres, paleoclimate of Earth and Mars, atmospheric thermodynamics, plane-parallel radiative transfer, climate dynamics, climate forcings/feedbacks, bifurcation, and climate hysteresis. S/U or letter grading.

**230. X-Ray Crystallography. (4)** Lecture, three hours; laboratory, three hours. Requisite: course 51. Point, translation, and space group symmetry, diffraction of X-ray, reciprocal lattice theory, single crystal X-ray methods, diffraction symmetry and elementary crystal structure analysis. S/U or letter grading.

**231. Crystal Chemistry and Structure of Minerals. (4)** Lecture, three hours; laboratory, three hours. Requisite: course 51. Bonding, interatomic configurations, polymorphic transformations, isotypism, thermal and positional disorder; survey of structures of common minerals, and relation of physical and chemical properties to crystal structure. S/U or letter grading.

**233. Mineral Physics and Equation of State. (4)** Lecture, three hours. Interrelationship of physical properties of rock-forming minerals: optical reflectivity, refraction index, sound velocity, elastic constants, specific heat, and thermal expansivity. Determination of pressure, volume, and temperature relationships and planet-forming compounds. Variation of elastic constants with temperature and pressure. Application of shock-wave experiments to equations of state. S/U or letter grading.

**234. Petrologic Phase Equilibria. (4)** Lecture, three hours; discussion, three hours. Requisites: course 51, Chemistry 110B. Principles governing homogeneous and heterogeneous equilibria, with selected applications to mineral stability relations in igneous and metamorphic rocks (fractional crystallization, partial melting, hydrothermal solutions, element partitioning in coexisting phases). S/U or letter grading.

**235A-235B-235C. Current Research in Geochemistry. (1-1-1)** Seminar, one hour. Limited to graduate Earth, planetary, and space sciences students. Seminars presented by staff, outside speakers, and graduate students stressing current research in Earth and planetary chemistry. May be repeated for credit. S/U or letter grading.

**M237. How to Write and Publish Scientific Papers. (4)** (Same as Atmospheric and Oceanic Sciences M238.) Lecture, three hours. Recommended preparation: planning to prepare or in the process of preparing manuscripts. Introduction to process of scientific manuscript writing and publishing. Offers insights into fun and frustration of manuscript writing, important rules for manuscript structuring and scientific language, and advice on how to deal with review process. Students gain familiarity with general principles of successful publishing process. Addresses different stages of manuscript writing and publishing by answering when are data ready for publishing, where to publish, how to structure manuscript, best way to present data, how to properly get out message, which writing ethics to consider, how to effectively use citation program, how to communicate with reviewers and editors, and efficient ways to manage coauthors. S/U or letter grading.

**238. Metamorphic Petrology. (4)** Lecture, three hours; laboratory, six hours. Preparation: one introductory petrology and petrography course. Interpretation of metamorphic rocks in light of observation, theory, and experiment. Geological relations, petrographic evidence, metamorphic zoning, thermodynamics of phase equilibria, projections, chemographic relationships, use of piezobirefringent haloes, Rayleigh depletion model, isotopic fractionation, environmental factors of metamorphism. Laboratory study of representative metamorphic rocks and suites of rocks selected to illustrate topics discussed in lectures. S/U or letter grading.

**240. Space Plasma Physics. (4)** Lecture, three hours. Requisite: course 200C or Physics 210A. Physics of plasmas in space, including treatments based on magnetohydrodynamics and kinetic theory. Applications to solar or planetary winds, steady-state magnetospheres, magnetospheric convection, substorm processes, magnetic merging, field-aligned currents and magnetosphere/ionosphere coupling, ring current dynamics, and wave particle instabilities. S/U or letter grading.

**C241. Basin Analysis. (4)** Lecture, three hours; laboratory, three hours. Requisites: courses 103B, 111. Mechanisms of sedimentary basin development, flexural and thermal subsidence, isostasy, subsidence analysis, quantitative basin modeling, sediment provenance, tectonic settings. Concurrently scheduled with course C141. S/U or letter grading.

**242. Sandstone Petrology. (4)** Lecture, two hours; laboratory, four hours. Requisite or corequisite: course C141. Petrographic study of sandstones, with emphasis on provenance, petrofacies, and paleotectonic reconstructions. S/U or letter grading.

**C243. Advanced Physical Sedimentology. (4)** Lecture, three hours; fieldwork, three hours. Requisites: courses 103B, 111, or equivalent. Advanced topics related to sediments, sedimentary rocks, and information that can be extracted from each. Interpretation of depositional environment from complex sedimentary structures and textures. Includes field and lecture component and builds on previous sedimentology basics. Concurrently scheduled with course C143. S/U or letter grading.

**244. Tectonics of Sedimentary Basins. (4)** Lecture, two hours; discussion, two hours; field trips. Requisites: courses 103B, 119. Recommended: course C141. Plate-tectonic settings of sedimentary basins. Basin analysis, stratigraphy, paleoenvironments, sedimentology, and related subjects in context of plate-tectonic controls on basin evolution. S/U or letter grading.

**245A-245B-245C. Current Research in Geology. (1-1-1)** Seminar, one hour. Limited to graduate Earth, planetary, and space sciences students. Seminars presented by staff, outside speakers, and graduate students on current research in tectonics. May be repeated for credit. S/U grading.

**248. Advanced Structural Geology. (4)** Lecture, three hours; discussion, two hours. Requisite: course 111. Principles governing fracture, folding, and flow of rocks; solutions of structural problems at various scales; regional tectonic problems. S/U or letter grading.

**251. Seminar: Mineralogy. (4)** Seminar, three hours. Examination of groups of rock-forming minerals (e.g., feldspars), integrating such aspects as crystal structure, crystal chemistry, phase equilibria, and petrogenesis. S/U or letter grading.

**252. Seminar: Geochemistry. (4)** Seminar, two hours; discussion, two hours. Phase equilibria under crustal conditions, chemistry of ocean waters, recent and ancient sediments, structure and chemistry of upper mantle, geochronology, cosmochronology, and cosmochemistry. S/U or letter grading.

**253. Seminar: Petrology. (4)** Seminar, three hours. Problems of igneous or metamorphic petrology; methods of evaluating physical conditions of metamorphism; diffusion in mineralogic systems; origin of ultramafic rocks and problems of mantle; element fractionation among coexisting phases; other current subjects in field. S/U or letter grading.

**255. Seminar: Structural Geology and Tectonics. (4)** Seminar, three hours. Flow and fracture in Earth's crust from microscopic to continental scale and in experiments. Examples may include metamorphic terranes, glaciers, plutons, volcanoes, and consolidated or unconsolidated sediments. Modern concepts of oceanic basins; processes leading to segregation of continental-type rocks. S/U or letter grading.

**256. Seminar: Geophysics. (4)** (Formerly numbered 282.) Seminar, three hours. Seismology, geophysical prospecting, electromagnetic prospecting. Selected topics in Earth physics. Content varies from year to year. May be repeated for credit. S/U or letter grading.

**257. Seminar: Paleontology. (4)** Seminar/discussion, three hours. Advanced topics in paleobiology, biostratigraphy, paleoecology, and paleobiogeography, with emphasis on relations to other disciplines. S/U or letter grading.

**259. Seminar: Paleotectonics. (4)** Seminar, two hours; discussion, two hours. Requisite: course 244. Basin evolution and paleogeography, with emphasis on Phanerozoic of Western U.S. S/U or letter grading.

**C260. Field Seminar. (2 to 6)** Seminar, three hours; discussion, one hour; fieldwork, five to 20 days. Requisite: course 61. Field-based teaching and discussion forum that varies in focus from general geology through structure and tectonics, sedimentology, igneous and metamorphic petrology, volcanology, or other subdisciplines as prescribed. May be repeated for credit. Concurrently scheduled with course C160. S/U or letter grading.

**261. Topics in Magnetospheric Plasma Physics. (4)** Lecture, four hours. Lectures, discussions, and exercises on specific advanced topics in magnetospheric plasma physics. Previous courses examined magnetic storms, magnetospheric substorms, ultralow frequency waves, and adiabatic particle motion in Earth's radiation belts. S/U or letter grading.

**C262. Application of Remote Sensing in Field. (4)** Fieldwork, five hours; laboratory, two hours. Requisite: course 150. Application of remote-sensing techniques to field situations. Digital analysis and interpretation of near-infrared, thermal-infrared, and microwave data from satellites and aircraft. Field observation of study site in California desert for testing hypotheses during week between Winter and Spring Quarters. Concurrently scheduled with course C162. S/U or letter grading.

**M263A. Solar System Magnetohydrodynamics. (4)** (Same as Atmospheric and Oceanic Sciences M250A.) Lecture, three hours. Requisite: Atmospheric and Oceanic Sciences C205A. Derivation of MHD equations with two fluid aspects, generalized Ohm's law, small amplitude waves, discontinuities, shock waves, and instabilities. Applications to statics and dynamics of solar wind and planetary magnetospheres and to solar wind/magnetosphere/ionosphere coupling. S/U (for majors with consent of instructor after successful completion of written and oral comprehensive examination and for nonmajors at discretion of major department) or letter grading.

**264. Order of Magnitude Earth and Planetary Sciences. (4)** Seminar, three hours; discussion, three hours. Limited to departmental graduate students. Many graduate students have had little practice in making rough estimates or order of magnitude (OOM) assessments of physical problems, and even less practice at talking through problems with others. One key problem is tendency for rote memorization to take precedence over understanding. Discussion of basic problems from OOM perspective, with focus on problems appropriate to Earth, planetary, and space sciences, to inculcate physically based reasoning and promote effective on-your-feet communication. Attendance at departmental colloquium required each week. S/U or letter grading.

**265. Instrumentation, Data Processing, and Data Analysis in Space Physics. (4)** Lecture, three hours. Principles, testing, and operations of magnetometers and other instruments. Data processing, display, and archiving. Time-series analysis techniques, including filtering. Fourier series, eigenanalysis, and power spectra. S/U or letter grading.

**M270A-M270B-M270C. Seminars: Climate Dynamics. (2 to 4 each)** (Same as Atmospheric and Oceanic Sciences M272A-M272B-M272C and Geography M270A-M270B-M270C.) Seminar, two hours. Archaeological, geochemical, micropaleontological, and stratigraphic evidence for climate change throughout geological past. Rheology and dynamics of climatic subsystems: atmosphere and oceans, ice sheets and marine ice, lithosphere and mantle. Climate of other planets. Modeling, simulation, and prediction of modern climate on monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading.

**CM273. Earth Process and Evolutionary History. (6)** (Same as Ecology and Evolutionary Biology CM228.) Lecture, four hours; laboratory, three hours. Requisites: Chemistry 14A, 14B (or 20A, 20B), Life Sciences 1, 2, 3, and 4, or 7A, 7B, and 7C (or 7A and introductory course in geology). Exploration of relationship between physical processes, such as tectonics and climate, and how they affect surface and impact biology of Earth. Study of evolution of universe, Earth, and life, with integration of history of science, including Darwinian evolution and plate tectonics revolutions. Study of formation of matter offers tools to understand geologic process of climate and ecology of Earth. Past climate change to examine expected future human-influenced climate. Consideration of major events in history of life on Earth. Data and methods from geology, genetics, and geochemistry are integrated to reconstruct past events. This reveals how Earth processes shaped life and how life shaped Earth. Concurrently scheduled with course CM173. Letter grading.

**C279. Search for Extraterrestrial Intelligence: Theory and Applications. (4)** Lecture, two hours; laboratory, two hours. Enforced requisites: Mathematics 31B, Physics 1B. Recommended: course 71, Computer Science 31, Physics 110B, Program in Computing 10A. Search for extraterrestrial intelligence (SETI) is based on number of astronomical, mathematical, statistical, and computational principles. Coverage of fundamental concepts in these disciplines in context of SETI: abundance and architecture of extrasolar planetary systems; radio astronomy, including wave propagation and dispersion; signal processing, including sampling theory and Fourier transforms; random processes, including Gaussian and Poisson statistics, and algorithm development. Design of observational program, acquisition of telescopic data, development of algorithms to analyze data, and writing of report on results. Concurrently scheduled with course C179. S/U or letter grading.

**M285. Origin and Evolution of Solar System. (4)** (Same as Astronomy M285.) Lecture, four hours. Dynamical problems of solar system; chemical evidences from geochemistry, meteorites, and solar atmosphere; nucleosynthesis; solar origin, evolution, and termination; solar nebula, hydromagnetic processes, formation of planets and satellite systems. Content varies from year to year. May be repeated for credit. S/U grading.

**286A-286B-286C. Current Research in Planetary Sciences. (2-2-2)** Seminar, two hours. Problems of current interest concerning moon, planets, and meteorites. May be repeated for credit. S/U grading.

**287A-287B-287C. Current Research in Geophysics. (1-1-1)** Seminar, one hour. Current research in geophysics. May be repeated for credit. S/U grading.

**M288A-M288B-M288C. Current Research in Space Physics. (2-2-2)** (Same as Atmospheric and Oceanic Sciences M275A-M275B-M275C.) Seminar, two hours. Problems of current interest concerning particles and fields in space. May be repeated for credit. S/U grading.

**289. Seminar: Fluid Dynamics. (2)** Seminar, one to two hours. Problems of current interest in fluid dynamics, with emphasis on geophysical applications. May be repeated for credit. S/U grading.

**293A-293B-293C. Space Physics Journal Club. (1-1-1)** Seminar, one hour. Limited to graduate space physics students in Earth, Planetary, and Space Sciences, Atmospheric and Ocean Sciences, and Physics and Astronomy Departments. Review of current space physics literature. May be repeated for credit. S/U grading.



**295A-295B-295C. Current Research in Earth, Planetary, and Space Sciences.** (1-1-1) Lecture, one hour. Limited to graduate Earth, planetary, and space sciences students. Seminars presented by outside speakers, staff, and/or graduate students describing current research. Written reports required. May be repeated for credit. S/U grading.

**C296. Research Topics in Earth, Planetary, and Space Sciences.** (1) Research group meeting, one to three hours. Designed for departmental students participating in research group. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. Concurrently scheduled with course C194. S/U grading.

**297. Advanced Techniques in Geological Research.** (2 to 4) Lecture, two to four hours. S/U grading.

**298. Advanced Topics in Earth and Space Sciences.** (2 to 4) Lecture, two to four hours. S/U or letter grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Earth, Planetary, and Space Sciences.** (2) Seminar, one hour; discussion, two hours. Classroom practice in teaching, with individual and group instruction on related educational methods, materials, and evaluation. Special emphasis on integration of technology in classroom. S/U grading.

**501. Cooperative Program.** (2 to 8) Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study and/or Research.** (2 to 12) Tutorial, to be arranged. May be repeated. S/U or letter grading.

**597. Preparation for MS Comprehensive Examination or PhD Qualifying Examinations.** (2 to 8) Tutorial, to be arranged. S/U grading.

**598. MS Research and Thesis Preparation.** (2 to 12) Tutorial, to be arranged. May be repeated. S/U grading.

**599. PhD Research and Dissertation Preparation.** (2 to 12) Tutorial, to be arranged. S/U grading.

## EAST ASIAN STUDIES

*Interdepartmental Program  
College of Letters and Science*

10256 Bunche Hall  
Box 951487  
Los Angeles, CA 90095-1487

**East Asian Studies**

310-206-6571

**Program e-mail**

William Marotti, PhD, *Chair*

## Faculty Committee

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Michael F. Thies, PhD (*Political Science*)

Yinghui Wu, PhD (*Asian Languages and Cultures*)

## Overview

The Master of Arts (MA) degree in East Asian Studies offers an interdisciplinary and highly flexible program of study. With opportunities to take a range of advanced courses in the social sciences and humanities, students are able to tailor their programs to emphasize particular methodological and disciplinary approaches and to focus in depth on the region as a whole and on its dynamics in particular countries. Coursework and language offerings range from the ancient to the contemporary and allow students to prepare for a broad range of individual needs and career interests with a thorough grounding in the history and culture of the region.

## Undergraduate Study

Information on the undergraduate major in Asian Studies and minor in East Asian Studies can be found in the [International and Area Studies](#) section.

## Graduate Major

### East Asian Studies MA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## East Asian Studies

### Lower-Division Course

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

### Graduate Courses

**291A-291B. Variable Topics in East Asian Studies.** (4-4) Seminar, three hours. Selected topics on East Asia. May be repeated for credit with topic change. S/U or letter grading.

## ECOLOGY AND EVOLUTIONARY BIOLOGY

*College of Letters and Science*

101 Hershey Hall  
Box 957426  
Los Angeles, CA 90095-7246

**Ecology and Evolutionary Biology**

Graduate Office, 310-825-1959

**Graduate e-mail**

Undergraduate Office, 310-825-1680

**Message Center**

Michael E. Alfaro, PhD, *Chair*

## Faculty Roster

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Paul H. Barber, PhD

Daniel T. Blumstein, PhD

Peggy M. Fong, PhD

Gregory F. Grether, PhD

David K. Jacobs, PhD

Nathan J.B. Kraft, PhD

James O. Lloyd-Smith, PhD

Kirk E. Lohmueller, PhD

Glen M. MacDonald, PhD (*Professor of California and the American West*)

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Lawren Sack, PhD

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 H. Bradley Shaffer, PhD  
 Thomas B. Smith, PhD  
 Victoria L. Sork, PhD  
 Tina I. Treude, PhD

### Professors Emeriti

Clifford F. Brunk, PhD  
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 Elma González, PhD  
 Malcolm S. Gordon, PhD  
 Patricia A. Gowaty, PhD  
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 Henry A. Hespenheide, PhD  
 Stephen P. Hubbell, PhD  
 Kenneth A. Nagy, PhD  
 Peter M. Narins, PhD  
 Park S. Nobel, PhD  
 Philip W. Rundel, PhD  
 Charles E. Taylor, PhD  
 Richard R. Vance, PhD  
 Blaire Van Valkenburgh, PhD (*Donald R. Dickey Professor Emeritus of Vertebrate Biology*)  
 Eduardo Zeiger, PhD  
 Cheryl Ann Zimmer, PhD  
 Richard K. Zimmer, PhD

### Associate Professors

Morgan W. Tingley, PhD  
 Pamela J. Yeh, PhD

### Assistant Professors

Robert A. Eagle, PhD  
 Nandita R. Garud, PhD  
 Elsa M. Ordway, PhD  
 Felipe Zapata, PhD

### Lecturer SOE

Rachel L. Kennison, PhD

### Adjunct Professors

Jon E. Keeley, PhD  
 Barbara J. Natterson, MD

### Adjunct Associate Professors

Seth D. Riley, PhD  
 Xiaoming Wang, PhD

### Adjunct Assistant Professors

Anthony E.F. Baniaga, PhD  
 Benjamin Knowles, PhD  
 Brenda J. Larson, PhD  
 Jonathan D. Marcot, PhD  
 Debra M. Shier, PhD

## Overview

Organismic biology touches every aspect of modern life, and understanding how living organisms are adapted to their environments is the major challenge of the discipline. To meet this challenge, the Department of Ecology and Evolutionary Biology offers undergraduate and graduate instruction at all levels of biology—from regulatory and physiological processes within organisms through the natural ecology and behavior of living organisms and to the population and community dynamics of multiple species. All of these subject areas address practical problems facing the world today, and

all influence human decisions on matters ranging from conservation of the environment to advancement of medical science.

## Undergraduate Study

The Bachelor of Science (BS) degrees combine essential background studies in mathematics, chemistry, and physics with a general introduction to all of the biological subjects, as well as advanced in-depth exposure to some of them.

Students may earn a BS degree in one of three different majors within the department: Biology (general biology); Ecology, Behavior, and Evolution; and Marine Biology. The majors build on similar lower-division introductory courses and differ primarily in the upper-division requirements. The Biology major is designed for students who desire exposure to a wide range of biological subjects. The remaining two majors—Ecology, Behavior, and Evolution and Marine Biology—provide more specialized instruction and strong preparation for employment or subsequent graduate study in the respective disciplines.

## Graduate Study

The Master of Science (MS) and Doctor of Philosophy (PhD) degrees provide opportunities for advanced, concentrated study. The MS degree requires, in addition to specified coursework, completion of either a comprehensive examination or the performance of original research culminating in a thesis. The PhD degree requires independent and innovative research that ultimately results in a dissertation.

## Undergraduate Majors

### Biology BS

The Biology major is designed for students with a broad interest in biology who desire to pursue careers in a wide range of biological and related fields. It provides students with excellent background preparation for postgraduate training in medicine and other health sciences, in tracks leading to academic and public service careers in biology, in biological industries, and even in nonbiological careers such as business, agriculture, and law. Emphasis is on breadth of training to expose students to all levels of modern biology.

### Learning Outcomes

The Biology major has the following learning outcomes:

- Broad understanding of basic biology concepts and principles across different levels of biological organization, from molecules to ecosystems
- Effective oral and written communication of scientific information
- Demonstrated understanding of the processes involved in new knowledge generation, including the scientific method, data collection, and data analysis
- Ability to critically evaluate scientific concepts presented in diverse media, from scientific articles to the popular press

## Entry to the Major

### Transfer Students

Transfer applicants to the Biology major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, and one semester of organic chemistry with laboratory. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

#### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, and 14D, or 20A, 20B, 20L, 30A, 30AL, and 30B; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Life Sciences 40 or Statistics 13, or Mathematics 31A or 31AL, 31B, 32A, and Life Sciences 40 or Statistics 13; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

### The Major

Students must take two courses from each principle:

*Evolution and Genetics:* Anthropology 120, 124P, 124Q, 124S, 128P, Earth, Planetary, and Space Sciences 116, Ecology and Evolutionary Biology 103, 108, 109, 109L, 110, 111, 112, 113A, 113AL, 114A, 115, 117, 118, 120 (not open for credit to students with credit for course 185), 121, C126, 129, 130, C135, 136, 140, 143, 144, 144L, M145, C146, 149, 150, 150L, 160, 171, CM173, C174, 175, 181, 184, 185 (not open for credit to students with credit for course 120), 186, Life Sciences 107, Microbiology, Immunology, and Molecular Genetics CM156, 158, Molecular, Cell, and Developmental Biology 138, CM156, Society and Genetics M142

*Information Flow:* Anthropology 124P, 128P, Chemistry and Biochemistry C100, 153A, 166, Ecology and Evolutionary Biology 100, 100L, 116, 120 (not open for credit to students with credit for course 185), 121, 122, 125, C126, 129, 132, 134B, C135, 136, 137, 143, C146, 149, 150, 150L, 153, 156, 162, 162L, 168, 170 (not open for credit to students with credit for Physiological Science 166), 171, C172, C174, 176, M178, C179, 180A, 180B, 183, Life Sciences 107, Microbiology, Immunology, and Molecular Genetics 100L and 101 (must be taken together to satisfy requirement), 103AL, 103BL, 109AL, 109BL, 123, 132, CM156, 158, C185A, Molecular, Cell, and Developmental Biology 100, 138, 143, 144, C150, 150AL, CM156, 165B, 168, M175A, M175B, M175C, 187AL, Neuroscience M101A, M101B, M101C, 102, Physiological Science M106, 111A, 111B, CM123, 124, C126, C127, 128, C130, 136,

138, 140, C144, M145, 146, 147, 149, C152, 154, 155, 165, 166 (not open for credit to students with credit for Ecology and Evolutionary Biology 170), 167, 173, 174, 175, M176, 177, M180A, M180B, M180C

*Structure Function:* Chemistry and Biochemistry C105, 153A, 153D, 153L, Earth, Planetary, and Space Sciences 116, Ecology and Evolutionary Biology 101, 102, 103, 105, 106, 107, 109, 109L, 110, 111, 112, 113A, 113AL, 113B, 114A, 114B, 115, 117, 118, 121, 122, 123A, 123B, 124A, 125, M127, M127L, 128, 129, M131, 136, 140, 144, 144L, M145, 147, 148, 151A, 151B, 152, 155, M157, 160, 161, 162, 162L, 163, 164, 165, 166, 168, 170 (not open for credit to students with credit for Physiological Science 166), 171, C174, 181, 184, Geography 106, 107, 108, Microbiology, Immunology, and Molecular Genetics 100L and 101 (must be taken together to satisfy requirement), 103AL, 103BL, 109AL, 132, CM156, 158, 168, C185A, Molecular, Cell, and Developmental Biology 100, 138, M140, C141, 143, 144, 146, C150, 165A, 165B, 168, M175A, M175B, M175C, Neuroscience M101A, M101B, M101C, 102, Physiological Sciences 107, 108, 111A, 111B, 120, 121, 122, CM123, 124, C126, C127, 128, C130, 136, 138, 140, C144, M145, 146, 147, 149, C152, 153, 154, 155, 165, 166 (not open for credit to students with credit for Ecology and Evolutionary Biology 170), 167, 173, 174, 175, M176, 177, M180A, M180B, M180C

*Transformations of Energy and Matter:* Atmospheric and Oceanic Sciences 102, 103, 104, M105, 130, 145, Chemistry and Biochemistry 103, 110A, 110B, 114, C123A, C123B, 136, C143A, C143B, 144, C145, 153A, 153B, 153C, 153D, 153L, 154, C159, C164, Ecology and Evolutionary Biology 103, 109, 109L, 117, 123A, 123B, 124A, M131, M139, 143, 151A, 153, 161, 162, 162L, 170 (not open for credit to students with credit for Physiological Science 166), 184, Environmental Health Sciences 100, Microbiology, Immunology, and Molecular Genetics 101

*Systems:* Anthropology 124P, 128P, Atmospheric and Oceanic Sciences 102, 103, 104, M105, 130, 145, Biostatistics 100B, Chemistry and Biochemistry 103, 153A, 153L, Earth, Planetary, and Space Sciences 116, Ecology and Evolutionary Biology 101, 102, 105, 106, 107, 108, 110, 111, 112, 113A, 113AL, 113B, 114A, 114B, 115, 116, 117, C119A, C119B, 120 (not open for credit to students with credit for course 185), 122, 123A, 123B, 124A, 124B, 125, C126, M127, M127L, 128, 129, M131, 132, 133, 136, 137, M139, 140, 142, 144, C146, 147, 148, 149, 150, 150L, 151A, 151B, 152, 153, 154, 155, 156, 160, 161, 162, 162L, 163, 164, 165, 166, 168, 170 (not open for credit to students with credit for Physiological Science 166), C172, 176, C177, M178, C179, 180A, 180B, 181, 182, 183, 184, Environmental Health Sciences 100, Geography 106, 107, 108, Life Sciences 107, M174, Microbiology, Immunology, and Molecular Genetics 100L and 101 (must be taken together to satisfy requirement), 103AL, 103BL, 105, 109AL, 109BL, 123, 132, C134, 158, 168, 180A, 180B, C185A, Molecular, Cell, and Developmental Biology 100, 138, M140, C141, 143, 144, 146, C150, 150AL, CM156, 160, 165A, 165B, 168, M175A,

M175B, M175C, 187AL, Neuroscience M101A, M101B, M101C, 102, Physiological Science 100, M106, 107, 108, 111A, 111B, 120, 121, 122, CM123, 124, C126, C127, 128, C130, M135, 136, 138, 140, C144, M145, 146, 147, 149, C152, 153, 154, 155, 165, 166 (not open for credit to students with credit for Ecology and Evolutionary Biology 170), 167, 173, 174, 175, M176, 177, M180A, M180B, M180C, Psychology 115, 133B, Society and Genetics M142

## Field Biology

The department offers three quarter-long programs of advanced courses in field biology: the Field Biology Quarter (FBQ), the Marine Biology Quarter (MBQ), and the joint Field Marine Biology Quarter (FMBQ). These programs focus on the biology of organisms living in their natural environments, emphasize independent student research projects, and take place at field sites away from the UCLA campus. The course composition varies somewhat from year to year, but each program always carries 16 units of course credit. The Field Biology Quarter involves some combination of Ecology and Evolutionary Biology 113B, 114B, 118, 124A, 124B, 125, C126, 132, 134B, and 151B. The Marine Biology Quarter includes some combination of Ecology and Evolutionary Biology 102, 106, 123A, 123B, 147, 148, 163, 164, 165, and 182. The Field and Marine Biology quarters may occur during fall, winter, or spring quarter, depending on location and faculty participation. To participate, students must enroll in all courses in the respective program. Participants in both programs are selected by personal interview. Information and applications are available in the Undergraduate Advising Office.

## Honors Program

An overall grade-point average of 3.4 and a 3.4 in the major are required for graduation with honors. Highest honors are awarded to majors who have a GPA of 3.6 overall and a 3.6 in the major at graduation and who have successfully completed Ecology and Evolutionary Biology 198A and 198B. Students do not need to apply for departmental honors. All students are reviewed for honors.

## Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, 10C, 30, and 60, and (3) completing one course from Computer Science CM186, Psychology 186A, or 186B. A grade of C- or better is required in each course, with a combined grade-point average in the specialization of at least 2.0. Students must petition for admission to the program and are advised to do so after completing Program in Computing 10B (petitions should be filed in the Undergraduate Advising Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Each core curriculum course must be passed with a grade of C- or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving a grade below C- in two core curriculum courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

### The Major

Each Life Sciences core curriculum course must be passed with a grade of C- or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving a grade below C- in three core curriculum courses, either in separate courses or repetitions of the same course, are ineligible for the Biology major.

A minimum of five upper-division courses for the major must be taken within the Ecology and Evolutionary Biology Department.

A minimum of two laboratory courses must be taken, including a minimum of one upper-division ecology and evolutionary biology laboratory course.

Courses applied to major requirements may be applied to one core principle only. Courses listed in multiple principles may not be applied simultaneously.

Field quarter instructors determine to which core principle courses apply (four requirements).

A maximum of 8 units of the Ecology and Evolutionary Biology 198 series or 4 units of Ecology and Evolutionary Biology 199 may be applied toward the major. The principal investigator determines to which principle the course applies, after the student's work and quarter are complete. The course must be for a minimum of 4 units. Credit for 199 courses from other departments may not be applied.

Each course applied toward requirements for the major must be taken for a letter grade. Courses applied to upper-division major requirements must have a minimum of 4 units. Courses with fewer than four units may be taken together to satisfy one course requirement. A maximum of one course requirement may be satisfied. A 6-unit course counts as one course on the requirements for the major.

With consent of the instructors and department, a maximum of 4 units of 200-level courses may be applied toward major requirements.

## Ecology, Behavior, and Evolution BS

The Ecology, Behavior, and Evolution major is appropriate for students preparing for graduate study in ecology, behavior, and evolution or for employment in areas such as environmental biology, animal behavior, conservation, teaching, museum work, and governmental positions dealing with environmental issues of wide importance and impact. A strong field component involving study in terrestrial and marine locales



such as coastal, desert, and mountain environments in California and the Southwest and in the Neotropics is required.

## Capstone Major

The Ecology, Behavior, and Evolution major is a designated capstone major. Students apply theory and technique learned through four years of classroom and laboratory experience to their own independent projects. The main purpose of the capstone is to provide a unique field experience that involves designing and executing a research project. Students are aided in the scientific process of learning about a new ecosystem, developing relevant questions, designing conceptually based projects, troubleshooting and completing the work, and writing a publication-ready manuscript. They are also expected to exhibit strong teamwork, problem-solving, and communication skills.

## Learning Outcomes

The Ecology, Behavior, and Evolution major has the following learning outcomes:

- Demonstrated broad knowledge of fundamentals of ecology, behavior and evolution, or marine biology acquired through coursework
- Development of skills in library research, data interpretation, synthesis, and scientific writing
- Use of current primary scientific literature, including database searches, identification of appropriate sources, and reading and understanding papers
- Understanding of key questions and hypotheses, interpretation of results and conclusions, and discrimination of quality through critique
- Use of knowledge gained for conception and execution of student project that includes self-developed questions and hypotheses, design of appropriate theoretical or empirical/experimental approach, execution of that approach, and analysis and interpretation of data
- Communication of original scientific work to colleagues and mentors through capstone scientific paper
- Demonstrated communication skills through oral or poster presentation at a symposium
- Display of strong teamwork and problem-solving skills

## Entry to the Major

### Transfer Students

Transfer applicants to the Ecology, Behavior, and Evolution major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, and one semester of organic chemistry with laboratory. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

#### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, and 14D, or 20A, 20B, 20L, 30A, 30AL, and 30B; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Life Sciences 40 or Statistics 13, or Mathematics 31A or 31AL, 31B, 32A, and Life Sciences 40 or Statistics 13; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

#### The Major

Students must complete the following courses:

1. At least 4 morphology and systematics units (one course) from Ecology and Evolutionary Biology 101, 103, 105, 110, 111, 112, 113A, 113AL, 114A, 115, 117, 130, 140, 144L, M157, or 184
2. At least 4 physiology units (one course) from Ecology and Evolutionary Biology 117, M157, 162, 162L, 170, Physiological Science 165, or 166. Students with credit for Ecology and Evolutionary Biology 170 cannot also take Physiological Science 166
3. At least 12 ecology, behavior, and evolution units (three courses) from Anthropology 128P, Ecology and Evolutionary Biology 100, 113A, 113AL, 116, C119A, C119B, 120, 121, 122, C126, 128, 129, 130, 133, C135, 136, 137, 142, 143, 144, 144L, C146, 149, 150, 150L, 151A, 152, 153, 154, 155, M157, 161, 162, 168, CM173 (or Earth, Planetary, and Space Sciences CM173), C174, 175, M178 (or Bioengineering CM186 or Computational and Systems Biology M186 or Computer Science CM186), 183, 184, 185, 186, Life Sciences 107 (students with credit for Life Sciences 4 cannot take Life Sciences 107). Students with credit for Ecology and Evolutionary Biology 120 cannot also take course 185
4. One capstone field quarter consisting of 12 to 16 units from the Field Biology Quarter (FBQ), Marine Biology Quarter (MBQ), join Field Marine Biology Quarter (FMBQ), or pre-approved equivalent (see undergraduate adviser)
5. At least 8 units (two courses) from Anthropology 128P, chemistry (except Chemistry and Biochemistry 188SA through 199; Chemistry and Biochemistry 153A and 153L are strongly recommended), Earth, planetary, and space sciences (geology only; except Earth, Planetary, and Space Sciences 188 through 199), ecology and evolutionary biology (except Ecology and Evolutionary Biology 188SA through 196), geography (except Geography 188SA through 199), Life Sciences 107 (students with credit for Life Sciences 4 cannot take Life Sciences 107), mathematics (except Mathematics 105A, 105B, 105C, 106, 188SA through 199), microbiology (except Microbiology 193A through 199), Molecular, Cell, and Developmental Biology 172, physics (except Physics 188SA through 199); recommended: taxon-oriented courses in ecological, behavioral, and evolutionary processes such as Ecology and Evolutionary Biology 111, 112, 113A, 113AL, 114A, 115

## Field Biology

The department offers three quarter-long programs of advanced courses in field biology: the Field Biology Quarter (FBQ), the Marine Biology Quarter (MBQ), and the joint Field Marine Biology Quarter (FMBQ). These programs focus on the biology of organisms living in their natural environments, emphasize independent student research projects, and take place at field sites away from the UCLA campus. The course composition varies somewhat from year to year, but each program always carries 16 units of course credit. The Field Biology Quarter involves some combination of Ecology and Evolutionary Biology 113B, 114B, 118, 124A, 124B, 125, C126, 132, 134B, and 151B. The Marine Biology Quarter includes some combination of Ecology and Evolutionary Biology 102, 106, 123A, 123B, 147, 148, 163, 164, 165, and 182. The Field and Marine Biology quarters may occur during fall, winter, or spring quarter, depending on location and faculty participation. To participate, students must enroll in all courses in the respective program. Participants in both programs are selected by personal interview. Information and applications are available in the [Undergraduate Advising Office](#).

## Honors Program

An overall grade-point average of 3.4 and a 3.4 in the major are required for graduation with honors. Highest honors are awarded to majors who have a GPA of 3.6 overall and a 3.6 in the major at graduation and who have successfully completed Ecology and Evolutionary Biology 198A and 198B. Students do not need to apply for departmental honors. All students are reviewed for honors.

## Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, 10C, 30, and 60, and (3) completing one course from Computer Science CM186, Psychology 186A, or 186B. A grade of C- or better is required in each course, with a combined grade-point average in the specialization of at least 2.0. Students must petition for admission to the program and are advised to do so after completing Program in Computing 10B (petitions should be filed in the Undergraduate Advising Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Each core curriculum course must be passed with a grade of C- or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving a grade below C- in two core curriculum courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

## The Major

A maximum of 8 units of the Ecology and Evolutionary Biology 198 series or 4 units of Ecology and Evolutionary Biology 199 may be applied toward the major. Credit for 199 courses from other departments may not be applied.

Courses offered as part of the Field Biology Quarter (FBQ) are open to all qualified students, but strict priority is given to students who are Ecology, Behavior, and Evolution majors, are graduating seniors, have taken a broad range of ecology, behavior, and evolution coursework, and have maintained a good grade-point average.

With consent of the instructors and department, students may enroll in 200-level courses and apply them toward major requirements.

Each course applied toward requirements for preparation for the major and the major must be taken for a letter grade. Ecology, Behavior, and Evolution majors must earn a C– or better in each course taken as preparation for the major, and at least a 2.0 (C) overall average in all courses applied toward the major. Courses applied to upper-division major requirements must have a minimum of 4 units. A 6-unit course counts as one course on the requirements for the major.

As requisites for the Marine Biology Quarter, students must have a 3.0 overall grade-point average and have taken Statistics 13 or equivalent. Preference for the Marine Biology Quarter is given to Ecology, Behavior, and Evolution and Marine Biology majors. It is strongly recommended that students complete Ecology and Evolutionary Biology 109 and 109L prior to applying for the Marine Biology Quarter. Contact the [Undergraduate Advising Office](#) for all requirements for the Marine and Field Biology quarters.

## Marine Biology BS

The Marine Biology major is designed for students who wish to specialize in the area of marine sciences. Completion of this major provides students with both an excellent background in biology and specialization in various disciplines such as oceanography, subtidal and intertidal ecology, and physiology of marine organisms. Graduates are well prepared for post-graduate opportunities in the marine sciences, many other areas of biology, and medicine. The major provides valuable field experience with concomitant individual research opportunities in marine biology.

## Capstone Major

The Marine Biology major is a designated capstone major. Students apply theory and technique learned through four years of classroom and laboratory experience to their own independent projects. The main purpose of the capstone is to provide a unique field experience that involves designing and executing a research project. Students are aided in the scientific process of learning about a new ecosystem, developing relevant questions, designing conceptually based projects, troubleshooting and completing the work, and writing a publi-

cation-ready manuscript. They are also expected to exhibit strong teamwork, problem-solving, and communication skills.

## Learning Outcomes

The Marine Biology major has the following learning outcomes:

- Demonstrated broad knowledge of fundamentals of ecology, behavior and evolution, or marine biology acquired through coursework
- Development of skills in library research, data interpretation, synthesis, and scientific writing
- Use of current primary scientific literature, including database searches, identification of appropriate sources, and reading and understanding papers
- Understanding of key questions and hypotheses, interpretation of results and conclusions, and discrimination of quality through critique
- Use of knowledge gained for conception and execution of student project that includes self-developed questions and hypotheses, design of appropriate theoretical or empirical/experimental approach, execution of that approach, and analysis and interpretation of data
- Communication of original scientific work to colleagues and mentors through capstone scientific paper
- Demonstrated communication skills through oral or poster presentation at a symposium
- Display of strong teamwork and problem-solving skills

## Entry to the Major

### Transfer Students

Transfer applicants to the Marine Biology major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, and one semester of organic chemistry with laboratory. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

#### Life Sciences Core Curriculum

*Required:* Atmospheric and Oceanic Sciences 1 or Earth, Planetary, and Space Sciences 15; Chemistry and Biochemistry 14A, 14B, 14BL, 14C, and 14D, or 20A, 20B, 20L, 30A, 30AL, and 30B; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Life Sciences 40 or Statistics 13, or Mathematics 31A or 31AL, 31B, 32A, and Life Sciences 40 or Statistics 13; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

## The Major

Students must complete the following courses:

1. Ecology and Evolutionary Biology 109 and 109L
2. At least 4 laboratory units (one course) from Ecology and Evolutionary Biology 101, 105, 110, 112, 136, 170, or 181
3. At least 4 units of marine organismic biology or physiology (one course) from Ecology and Evolutionary Biology 101 (unless taken under item 2), 105 (unless taken under item 2), 107, 112, 117, 128, 140, 142, 170 (unless taken under item 2), C174, 184, or Physiological Science 166. Students with credit for Ecology and Evolutionary Biology 170 cannot also take Physiological Science 166
4. At least 4 units of ecology and behavior (one course) from Anthropology 128P, Ecology and Evolutionary Biology 100, 116, C119A, C119B, 122, C126, 128, 129, M131 (or Geography M110), 133, 136, 137, 140, 142, 143, C146, 151A, 152, 154, 155, M157, 161, 162, 170, C172, M178 (or Bioengineering CM186 or Computational and Systems Biology M186 or Computer Science CM186), 183, or 184
5. At least 4 evolution units (one course) from Anthropology M128S (or Society and Genetics M142), Ecology and Evolutionary Biology 116, 117, 120, 121, 130, 133, C135, 140, 143, 144, 144L, C146, 149, 150, 150L, CM173 (or Earth, Planetary, and Space Sciences CM173), C174, 175, 184, 185, 186, or Life Sciences 107 (students with credit for Life Sciences 4 cannot take Life Sciences 107). Students with credit for Ecology and Evolutionary Biology 120 cannot also take course 185
6. One capstone field quarter consisting of 12 to 16 units from the Marine Biology Quarter (MBQ) or pre-approved equivalent (see undergraduate adviser)
7. One additional physical, chemical, or geological oceanography course from Atmospheric and Ocean Sciences 102, 103, 104, M105 (or Ecology and Evolutionary Biology M139), 130, Chemistry and Biochemistry 103, 153A, Earth, Planetary, and Space Sciences 100, 116, 119, C141, 153, Ecology and Evolutionary Biology M131 (or Geography M110), 153, 198B, 199, Geography 101, M118 (or Atmospheric and Oceanic Sciences M106), 130, 182A, Mechanical and Aerospace Engineering 103, 150A, or Molecular, Cell, and Developmental Biology 172

## Field Biology

The department offers three quarter-long programs of advanced courses in field biology: the Field Biology Quarter (FBQ), the Marine Biology Quarter (MBQ), and the joint Field Marine Biology Quarter (FMBQ). These programs focus on the biology of organisms living in their natural environments, emphasize independent student research projects, and take place at field sites away from the UCLA campus. The course composition varies somewhat from year to year, but each program always carries 16 units of course credit. The Field Biology Quarter involves some combination of Ecology and Evolutionary Biology 113B, 114B, 118, 124A, 124B, 125, C126, 132, 134B, and 151B. The Marine Biology Quarter includes some combination of Ecology and Evolutionary Biology 102, 106, 123A, 123B, 147, 148, 163, 164, 165, and 182. The Field and Marine Biology quarters



may occur during fall, winter, or spring quarter, depending on location and faculty participation. To participate, students must enroll in all courses in the respective program. Participants in both programs are selected by personal interview. Information and applications are available in the Undergraduate Advising Office.

### Honors Program

An overall grade-point average of 3.4 and a 3.4 in the major are required for graduation with honors. Highest honors are awarded to majors who have a GPA of 3.6 overall and a 3.6 in the major at graduation and who have successfully completed Ecology and Evolutionary Biology 198A and 198B. Students do not need to apply for departmental honors. All students are reviewed for honors.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing Program in Computing 10A, 10B, 10C, 30, and 60, and (3) completing one course from Computer Science CM186, Psychology 186A, or 186B. A grade of C- or better is required in each course, with a combined grade-point average in the specialization of at least 2.0. Students must petition for admission to the program and are advised to do so after completing Program in Computing 10B (petitions should be filed in the Undergraduate Advising Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

### Policies

#### Preparation for the Major

Each core curriculum course must be passed with a grade of C- or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving a grade below C- in two core curriculum courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

#### The Major

Credit for 199 courses from other departments may not be applied.

With consent of the instructors and department, students may enroll in 200-level courses and apply them toward major requirements.

Each course applied toward requirements for preparation for the major and the major must be taken for a letter grade. Marine Biology majors must earn a C- or better in each course taken as preparation for the major, and at least a 2.0 (C) overall average in all courses applied toward the major. Courses applied to upper-division major requirements must have a minimum of 4 units. A 6-unit course counts as one course on the requirements for the major.

As requisites for the Marine Biology Quarter, students must have a 3.0 overall grade-point average and have taken Statistics 13 or equivalent. Preference for the Marine Biology Quarter is given to Ecology, Behavior, and Evolution majors, and Marine Biology majors. Students

must complete Ecology and Evolutionary Biology 109 and 109L prior to participating in the Marine Biology Quarter. Contact the [Undergraduate Advising Office](#) for all requirements for the Marine and Field Biology quarters.

## Undergraduate Minors

### Conservation Biology Minor

The Conservation Biology minor is designed for students who wish to augment their major program of study with courses addressing issues central to the conservation and sustainability of biodiversity and natural ecosystem processes. The minor seeks to provide students with a greater depth of experience and understanding of the role that science can play in developing conservation policy.

#### Admission

To enter the minor, students must (1) be in good academic standing (2.0 grade-point average or better), (2) have completed Life Sciences 7B and Ecology and Evolutionary Biology 100 with minimum grades of C or better, and (3) submit a petition through [Message Center](#) to the Undergraduate Advising Office. All degree requirements, including the specific requirements for this minor, must be fulfilled within the unit maximum set forth by the College of Letters and Science.

Non-life sciences majors wishing to minor in Conservation Biology should be aware that preparation courses in chemistry, life sciences, mathematics, and physics are requisites to some of the upper-division courses accepted for the minor.

#### The Minor

*Required Lower-Division Course (5 units):* Life Sciences 7B.

*Required Upper-Division Courses (28 units minimum):* Ecology and Evolutionary Biology 100, and four to six courses (24 units minimum) from 100L, 101, 103, 105, 109, 109L, 111, 112, 113A, 113AL, 114A, 114B, C119A, C119B, 122, M127 (or Environment M102 or Geography M102), 129, M131 (or Geography M110), 140, 142, 143, 144, 144L, C146, 149, 151A, 152, 153, 154, 155, 161, 162, 162L, 168, C174, 176, 180A, 180B, 183, 184, Geography M102, M103 (or Environment M103), 106, 107, 116, 117, M118 (or Atmospheric and Oceanic Sciences M106), M126 (or Environment M126), M131, 133. Courses completed as part of the Field Biology Quarter and Marine Biology Quarter may be applied if not taken to fulfill a field quarter requirement; consult with the undergraduate counselors for more information. A maximum of two upper-division geography courses may be applied to the minor.

#### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor. Transfer credit for any of the above is subject to departmental approval; consult with

the undergraduate counselors before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade, and students must have a minimum grade of C (2.0) in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Evolutionary Medicine Minor

The Evolutionary Medicine minor is designed for students who wish to augment their major program of study with courses that combine the disciplines of ecology and evolutionary biology, anthropology, psychology, and zoology with medicine to create new paradigms for investigating and understanding disease. The minor provides students with a greater depth of experience and understanding of the integration of evolutionary biology and medical education.

#### Admission

To enter the minor, students must (1) be in good academic standing (2.0 grade-point average or better), (2) have completed Life Sciences 7B and Ecology and Evolutionary Biology 100 with minimum grades of C or better, and (3) submit a petition through [Message Center](#) to the Undergraduate Advising Office. All degree requirements, including the specific requirements for this minor, must be fulfilled within the unit maximum set forth by the College of Letters and Science.

Non-life sciences majors wishing to minor in Evolutionary Medicine should be aware that preparation courses in chemistry, life sciences, mathematics, and physics are requisites to some of the upper-division courses accepted for the minor.

#### The Minor

*Required Lower-Division Course (5 units):* Life Sciences 7B.

*Required Upper-Division Courses (24 units minimum):* Ecology and Evolutionary Biology 100, 120 or 185, and four to five courses from the following (no more than two courses from any area): Anthropology 124P, 124Q, 124S, 126P, 128P, 129, Community Health Sciences 100, 130, Ecology and Evolutionary Biology 110, 117, C119A, C119B, 121, C126, 129, 130, 143, 149, 150, 150L, M157, 171, C174, 175, 184, 186, Epidemiology 100, 197, Geography 136, Gerontology M108, 120, Honors Collegium 141, Human Genetics CM124, C144, Microbiology 106, 107, CM156, 158, 168, 174, Molecular, Cell, and Developmental Biology CM156, 168, 172, Neuroscience M101A, M101B, M101C, 101L, Philosophy 137, 155A, 155B, Physiological Science 124, 125, 165, Psychology 115, 118, 119C, 119F, Public Health C150, Social Welfare 164, Sociology 119, 143, 170.

*Required Research Project or Internship (4 units minimum):* Ecology and Evolutionary Biology 198A and 198B or 199 or a suitable research internship from another department, and must be taken for letter grades.

Participation in the Annual Biology Research Symposium (Poster Session) sponsored by the department in spring quarter is highly recommended.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor. Transfer credit for any of the above is subject to departmental approval; consult with the undergraduate counselors before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade, and students must have a minimum grade of C (2.0) in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Biology MS, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Ecology and Evolutionary Biology

### Lower-Division Courses

**10. Plants and Civilization. (4)** Lecture, three hours; demonstration, one hour. Designed for nonmajors. Origin of crop plants; man's role in development, distribution, and modification of food, fiber, medicinal, and other plants in relation to their natural history. P/NP or letter grading.

**11. Biomedical Research Issues in Minority Communities. (5)** Discussion, four hours. Limited to 30 students. Discussions and student presentations on biomedical research as it affects minority communities, with emphasis on methodology, design, consequences, and ethics of current research. Discussion leaders provide information on preparation and training for research careers. P/NP or letter grading.

**12. Biodiversity and Extinction: Crisis and Conservation. (4)** Lecture, three hours; discussion, one hour. Examination of ecological and evolutionary principles necessary to understand nature and importance of worldwide environmental crisis. Research by students of specific conservation issues and presentation of results to class. P/NP or letter grading.

**17. Evolution for Everyone. (5)** Lecture, three hours; discussion, two hours. Exploration in detail of Darwinian natural selection, with emphasis on evidence and implications for modern problems people and societies face, including antibiotic resistance, insect resistance to pesticides, and coevolution of pollinators with crop plants. Nature of science in context of questions about ongoing real-time Darwinian processes. Letter grading.

**18. Why Ecology Matters: Science Behind Environmental Issues. (5)** Lecture, three hours; laboratory, two hours. Basic ecological concepts, scientific method, and ecological basis for local and global environmental issues. Major challenges to be faced in this century, including need to find interdisciplinary and

collaborative solutions to world's worsening environmental problems (e.g., global climate change, biodiversity loss, deforestation, pollution, declining water resources, declining fisheries). Environmental literacy to equip students to become leaders in growing green economy and to help forge solutions to current and future environmental crises that threaten natural resource base. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**21. Field Biology. (4)** Lecture, three hours; discussion, two hours, or field trips, three to four hours. Recommended preparation: Life Sciences 15. Not open for credit to students with credit for course 122 or Life Sciences 1. Introduction to natural history of Western North America, especially Southern California. Classification, distribution, and ecology of common plants and animals. P/NP or letter grading.

**25. Living Ocean. (5)** Lecture, three hours; laboratory, one hour; field trips, three hours. Not open for credit to students with credit for Earth, Planetary, and Space Sciences 15. Physical and chemical processes that take place in oceans, with emphasis on their effects on organisms. P/NP or letter grading.

**50. Desert Life. (4)** Lecture, three hours; laboratory, two hours. Introduction to fundamental structural, physiological, and behavioral features of desert organisms, with special emphasis on deserts of Western North America. P/NP or letter grading.

**87. California's DNA: Field Course. (1)** Lecture, one hour; fieldwork, four hours (every other week). Limited to freshmen. Students join CALeDNA community science program and do fieldwork to sample soil and sediments in California. Familiarization with University of California natural reserves spanning coast to woodland, and desert to mountains. Analysis of samples for DNA to capture snapshot of local biodiversity. Prepares students for more intensive, related upper-division science course. Guided Saturday field trips or independent trips. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**95. Lower-Division Internship in Biology. (4)** Tutorial/fieldwork, three hours per week per unit. Internship course for lower-division students to be supervised by Center for Community Learning, fieldwork site, and faculty adviser. Consult Undergraduate Office for more information. May be repeated twice. Individual contract with supervising faculty member required. P/NP grading.

**96. Communicating Science: Bringing Complex Concepts to Life. (2)** Seminar, three hours. Limited to Ecology and Evolutionary Biology Department majors. Development of tools for research, integrating and presenting complex scientific concepts concisely and effectively. Basic animation techniques and work in groups to illustrate life sciences concepts. How to engage audiences and convey clear messages. Letter grading.

**97. Variable Topics in Ecology and Evolutionary Biology. (1 to 4)** Seminar, three to 12 hours. Current issues in research in ecology and evolutionary biology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with consent of instructor. P/NP or letter grading.

**97XA. PEERS Freshman Seminar: Succeeding in Science. (1)** Seminar, one hour. Limited to students in Program for Excellence in Education and Research in Sciences (PEERS). Series of lectures, workshops, and discussions to enhance student success in sciences by developing critical academic survival skills, acquainting students with practice of science, and highlighting opportunities available to participate in research as undergraduate students. P/NP grading.

**97XB. PEERS Sophomore Seminar: Pathways in Science. (1)** Seminar, one hour. Limited to students in Program for Excellence in Education and Research in Sciences (PEERS). Series of lectures and workshops to enhance student success in sciences by acquainting students with practice of science, opportunities available to participate in research as undergraduate students, and careers available to students with science degrees. P/NP grading.

**97XC. AAP Freshman Seminar: Succeeding in Science Majors and Careers. (1)** Seminar, one hour. Limited to science majors in Academic Advancement Program (AAP) who took Mathematics 1 in fall term. Series of lectures, workshops, and discussions designed to enhance student success in sciences by developing critical academic survival skills, acquainting students with campus resources, introducing students to practice of science, and highlighting opportunities available to participate in research as undergraduate students. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Introduction to Ecology and Behavior. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 7B. Not open for credit to students with credit for course 118, 122, 124A, 124B, 125, C126, 129, 132, 134B, 136, or 151B. Introduction to methods and topics in ecology and behavior. Growth and regulation of populations, organization of communities and ecosystems, biogeography, and behaviors animals use to find food, choose mates, and interact in social groups. Letter grading.

**100L. Introduction to Ecology and Behavior Laboratory. (4)** Laboratory, four hours. Requisites: course 100 (may be taken concurrently), Life Sciences 1 or 7B. Introduction to research methods in ecology and behavior, resulting in independent research proposals and to gain understanding of scientific method, critical evaluation of research papers, and development of scientific writing skills. Involves work outside and off-campus meetings. To apply this course to the Biology upper-division major laboratory requirement, the corresponding lecture course must be completed with a passing grade. Letter grading.

**101. Marine Botany. (6)** Lecture, four hours; laboratory, six hours; three to four field trips. Requisite: Life Sciences 1 or 7B. Introduction to biology and ecology of marine plants, including algae, sea grasses, and mangroves, with focus on form and function of marine plants and their ecological role in different marine habitats and ecosystems. Letter grading.

**102. Biology of Marine Invertebrates. (4)** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Requisite: Life Sciences 1 or 7B. Morphology, systematics, life histories and natural history, ecology, behavior, and physiology of marine invertebrates. Given off campus at marine science center. P/NP or letter grading.

**103. Plant Diversity and Evolution. (5)** Lecture, three hours; laboratory, three hours; field trip. Requisites: Life Sciences 1 and 4, or 7A and 7B. Introduction to green plant tree of life, with emphasis on using phylogenetic perspective to examine major transitions in plant evolution, including evolution and diversification of land plants, vascular plants, seed plants, and currently ecologically dominant flowering plants. Introduction to phylogenetics, providing overview of theory

and methodology to reconstruct and use phylogenetic trees to study organismal evolution. Exploration of 700 million years of plant evolution, with emphasis on morphological, functional, ecological, and biogeographical perspectives. Letter grading.

**105. Biology of Invertebrates. (6)** Lecture, three hours; laboratory/field trips, six hours. Requisite: Life Sciences 1 or 7B. Introduction to systematics, evolution, natural history, morphology, and physiology of invertebrates. P/NP or letter grading.

**106. Experimental Marine Invertebrate Biology. (4 or 6)** Lecture, two hours; laboratory, 12 hours. Requisites: course 105, Physiological Science 166 (may be taken concurrently). Offered either as 6-unit quarter-long course or as 4-unit Marine Biology Quarter course. Advanced course of natural history, physiology, biochemistry of invertebrates, with emphasis on independent laboratory and field investigations. P/NP or letter grading.

**107. Evolution, Development, and Function of Invertebrate Animals. (6)** Lecture, three hours; laboratory, three hours; three weekend field trips. Requisite: course 105 or completion of Marine Biology Quarter. Advanced invertebrate biology course exploring evolutionary relationship of animal groups and evolution of marine species, comparative development and developmental genetics of invertebrate form, and form and function as they relate to marine invertebrates. Letter grading.

**108. Biodiversity in Age of Humans. (5)** Lecture, two and one half hours; discussion, one hour; field trip, six to eight hours. Students learn how to use scientific method, ask and answer questions about eDNA, analyze literature, and develop professional skills applicable to any major or career. Series of biointeractive videos, interactive worksheets, and short lectures outside of class set baseline knowledge for problem solving and applied learning in classroom. Letter grading.

**109. Introduction to Marine Science. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Strongly recommended for prospective Marine Biology Quarter students. Introduction to physical and biological world of 70 percent of planet: oceans. Designed to be integrative, with focus on geological evolution of seas, physical and chemical properties of water, and how these abiotic processes shape ecology and evolution of marine organisms and environments. Letter grading.

**109L. Introduction to Marine Science Laboratory. (4)** Laboratory, three hours; four field trips. Requisites: course 109 (may be taken concurrently), Life Sciences 1 or 7B. Introduction to marine environments and methods used to study them. Exploration of variety of concepts in marine science, ranging from oceanography to behavior, primary productivity, and marine biodiversity, with emphasis on experimental design and scientific writing. To apply this course to the Biology upper-division major laboratory requirement, the corresponding lecture course must be completed with a passing grade. Letter grading.

**110. Vertebrate Morphology. (6)** Lecture, three hours; laboratory, five hours. Requisites: Life Sciences 1, 2, and 3, or 7A and 7B. Study of vertebrate morphology, function, and evolution from viewpoint of comparative anatomy of adult forms, biomechanics, development, and paleontology. Laboratory study of selected vertebrates. Letter grading.

**111. Biology of Vertebrates. (5)** Lecture, three hours; laboratory, three hours; four one- to two-day field trips. Requisite: Life Sciences 1 or 7B. Adaptations, behavior, and ecology of vertebrates. Letter grading.

**112. Ichthyology. (6)** Lecture, three hours; laboratory, six hours; field trips. Requisite: Life Sciences 1 or 7B. Highly recommended: courses 110, 111. Biology of freshwater and marine fishes, with emphasis on their evolution, systematics, morphology, zoogeography, and ecology. Field trips to examine fishes of Southern California shoreline, tidepools, and coastal streams. Letter grading.

**113A. Herpetology. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Recommended requisite: course 120. Exploration and summarization of evolution, ecology, life history, and

conservation biology of world's reptile and amphibian fauna. Topics include conservation assessments both globally and in California, discussion sections focused on student-led critical evaluations of current literature, and in-class meetings with professional herpetologists to share their professional experiences and job opportunities. Letter grading.

**113AL. Herpetology Laboratory. (4)** Laboratory, six hours; field trips. Corequisite: course 113A. Primary focus on learning defining features, biogeography, and natural history of world's reptile and amphibian fauna, with special focus on California species. Field trips to observe living species in field, including one extended three-day trip. Letter grading.

**113B. Field Herpetology. (8)** Requisite: Life Sciences 1. Recommended: courses 100, 111. Two weeks of off-campus research projects followed by two-week lecture course and offered only as part of Field Biology Quarter. Biology, particularly ecology and behavior, of reptiles and amphibians in their natural habitat. Students carry out supervised research projects, then write up and orally present their results in seminar fashion. Letter grading.

**114A. Ornithology. (5)** Lecture, three hours; laboratory/field trips, three hours. Requisite: Life Sciences 1 or 7B. Recommended: course 100. Systematics, distribution, physiology, behavior, and ecology of birds. Letter grading.

**114B. Field Ornithology. (8)** Requisite: Life Sciences 1. Recommended: course 100. Two to three weeks of off-campus research projects followed by lecture course and offered only as part of Field Biology Quarter. Biology, particularly ecology and behavior, of birds in their natural habitat. Letter grading.

**115. Mammalogy. (5)** Lecture, three hours; laboratory, three hours. Requisite: Life Sciences 1 or 7B. Topics in mammalian biology, including evolution, ecology, behavior, functional morphology, systematics, physiology, and biogeography. Letter grading.

**116. Conservation Biology. (4)** Lecture, three hours; discussion, two hours. Requisite: Life Sciences 1 or 7B. Recommended: course 100. Not open for credit to students with credit for Environment 121. Study of ecological and evolutionary principles as they apply to preservation of genetic, species, and ecosystem diversity. Discussion sections focus on interactions of science, policy, and economics in conserving biodiversity. Oral and written student presentation on specific conservation issues. Letter grading.

**117. Evolution of Vertebrates. (5)** Lecture, three hours; laboratory, three hours. Recommended requisite: course 110. Survey of origin and evolution of vertebrates through examination of fossil record. Focus on fossil record of tetrapods, with emphasis on anatomical and physiological transformations in amphibians, reptiles, birds, and mammals. Letter grading.

**118. Plant Adaptations. (8)** Lecture, one hour; field trip, 10 hours. Requisite: course 100. Five-week course offered only as part of Field Biology Quarter. Field-oriented introduction to mechanisms by which vascular plants adapt themselves to their abiotic and biotic environments using community, population, and ecophysiological levels of integration. Letter grading.

**C119A. Mathematical and Computational Modeling in Ecology. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 30B or Mathematics 3B or 31A. Recommended: courses 100, 122, Life Sciences 1 or 7B, Mathematics 3C. Introduction to modeling dynamics of ecological systems, including formulation and analysis of mathematical models, basic techniques of scientific programming, probability and stochastic modeling, and methods to relate models to data. Examples from ecology but techniques and principles applicable throughout life and physical sciences. Concurrently scheduled with course C219A. P/NP or letter grading.

**C119B. Modeling in Ecological Research. (4)** Lecture, two hours; discussion, two hours. Recommended requisite: course C119A. Advanced techniques in mathematical and computational modeling of ecological dynamics and other population dynamic problems. Independent research projects developed by students. Topics include model formulation, sto-

chastic models, fitting models to data, sensitivity analysis, presentation of model results, and other topics from current literature. Concurrently scheduled with course C219B. P/NP or letter grading.

**120. Evolution. (4)** Lecture, three hours; discussion, two hours. Requisites: Life Sciences 1, 2, 3, 4, and 23L, or 7A, 7B, 7C, and 23L, Mathematics 3A and 3B (or 31A or Life Sciences 30B). Not open for credit to students with credit for course 185. Designed for departmental majors specializing in environmental and population biology. Introduction to mechanics and processes of evolution, with emphasis on natural selection, population genetics, speciation, evolutionary rates, and patterns of adaptation. P/NP or letter grading.

**121. Molecular Evolution. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A and 23L. Molecular biology, with emphasis on evolutionary aspects. DNA replication, RNA transcription, protein synthesis, gene expression, and molecular evolution. Letter grading.

**122. Ecology. (4)** Lecture, three hours; discussion, two hours. Requisites: course 100, Life Sciences 1 or 7B, Mathematics 3B or 31A or Life Sciences 30B. Highly recommended: Mathematics 31B, 32A. Designed for departmental majors specializing in environmental and population biology. Introduction to population and community ecology, with emphasis on growth and distributions of populations, interactions between species, and structure, dynamics, and functions of communities and ecosystems. P/NP or letter grading.

**123A-123B. Field Marine Ecology. (4 or 8 each)** Lecture, five hours; laboratory, 15 hours. Recommended requisites: courses 100, 122. Offered either as 4- or 8-unit five-week intensive course given off campus as part of Marine Biology Quarter. Survey of current topics in marine ecology, including analysis of primary research literature combined with field study of ecology of marine organisms, populations, communities, and ecosystems. Original research project required. Letter grading. **123A.** In residence at research station located outside continental U.S. **123B.** In residence at research station located within U.S., including Alaska and Hawaii.

**124A-124B. Field Ecology. (4 or 8 each)** Lecture, five hours; laboratory or field trip, 15 hours. Requisites: course 100, Life Sciences 1 or 7B. Recommended: courses 111, 120, 122. Offered as part of Field Biology Quarter. Field and laboratory research in ecology; collection, analysis, and write-up of numerical data, with emphasis on design and execution of field studies. Letter grading. **124A.** In residence at research station located outside continental U.S. for part of or for duration of term. **124B.** In residence at research station located within U.S., including Alaska and Hawaii, for part of or for duration of term.

**125. Tropical Animal Communication. (4 or 8)** Lecture, three hours; discussion, two hours. Requisites: course 100, Life Sciences 1 or 7B. Offered either as 4-unit quarter-long course or as 8-unit Field Biology Quarter course. Animal communication behavior, tropical vertebrate biology, and evolution of information processing systems. Eight-unit course covers same basic lecture material in five or six intensive weeks, followed by extended field trips where students do individual projects in animal communication. Letter grading.

**C126. Behavioral Ecology. (4 or 8)** Lecture, three hours; discussion, two hours. Requisites: course 100, Life Sciences 1 or 7B, Mathematics 3C or 32A or Life Sciences 30B. Recommended: course 129. Offered either as 4-unit quarter-long course or as 8-unit Field Biology Quarter course. Evolutionary perspective of behavioral ecology, with extended consideration of selfish DNA, conflict with genomes, natural selection and coevolution, kin selection and diversity in group functioning and cooperation, social learning, game theory and alternative life histories, and human behavioral ecology. Eight-unit course covers several major areas in animal behavior more broadly, including foraging, sexual selection and predator-prey interactions in five intensive weeks, followed by extended field trip where students do individual projects. Concurrently scheduled with course C242. Letter grading.

**M127. Soils and Environment. (4)** (Same as Environment M102 and Geography M102.) Lecture, three hours; discussion, one hour; field trips. General treatment of soils and environmental implications: soil development, morphology, and worldwide distribution of soil orders; physical, chemical, hydrologic, and biological properties; water use, erosion, and pollution; management of soils as related to plant growth and distribution. P/NP or letter grading.

**M127L. Soils and Environment: Field. (1)** (Same as Environment M102L and Geography M102L.) Laboratory, one hour; field excursions. Corequisite: course M127. Investigations and demonstrations supporting material in course M127, including excavating, describing, and naming soils in field, soil forming processes, geomorphology, and soils. P/NP or letter grading.

**128. Plant Physiological Ecology. (5)** Lecture, three hours; laboratory, three hours; one two-day field trip. Requisites: Life Sciences 1 or 7B, Physics 1C and 4BL, or 5B or 6C. Study of plant/environment interactions under natural conditions. Transpiration and photosynthesis, leaf temperatures, and water movement in soil/plant/atmosphere continuum. Letter grading.

**129. Animal Behavior. (4)** Lecture, three hours; discussion, two hours. Requisites: course 100, Life Sciences 1 or 7B. Introduction to behavioral ecology. Methods and results of evolutionary approaches to study of animal behavior, including foraging strategies, social competition, sexual selection, mating systems, cooperation, and social organization. Letter grading.

**130. Principles of Systematic Biology. (4)** Lecture, three hours; discussion, two hours. Requisite: Life Sciences 1 or 7B. Recommended: courses 120, 135. Concepts, principles, and methods of comparative biology as they apply to inference of evolutionary relationships among organisms. Principles and application of biological nomenclature. Letter grading.

**M131. Ecosystem Ecology. (4)** (Same as Geography M110.) Lecture, three hours; field trips. Requisite: Geography 1 or Life Sciences 7B. Designed for juniors/seniors. Development of principles of ecosystem ecology, with focus on understanding links between ecosystem structure and function. Emphasis on energy and water balances, nutrient cycling, plant-soil-microbe interactions, landscape heterogeneity, and human disturbance to ecosystems. P/NP or letter grading.

**132. Field Behavioral Ecology. (8)** Lecture, two hours; laboratory/field trip, 10 hours. Requisites: course 100, Life Sciences 1 or 7B. Recommended: course 129. Five-week course offered only as part of Field Biology Quarter. Field research in behavioral ecology, emphasizing animal communication. Design and execution of individual and small group field projects during extended field trip. Letter grading.

**133. Elements of Theoretical and Computational Biology. (4)** Lecture, three hours; discussion, one hour; laboratory, two hours. Requisites: Life Sciences 1, 2, 3, 4, 23L, and Mathematics 3A, 3B, and 3C, or 31A and 31B, or Life Sciences 30B. Strongly recommended: elementary statistics course. Introduction of basic core mathematical ideas and models necessary to understand contemporary ecology and evolutionary biology. Population ecology and growth, community ecology, population genetics, natural selection. P/NP or letter grading.

**134B. Field Physiological Ecology of Desert Animals. (8)** Fieldwork, 15 hours. Requisite: Life Sciences 1 or 7B. Recommended: course 100. Two weeks of off-campus research projects with two-week lecture course (four hours per day) and offered only as part of Field Biology Quarter. Consideration of physiological, behavioral, morphological, and ecological mechanisms desert animals use to enhance their survival in arid habitat. Students carry out supervised research projects, then write up and orally present their results in seminar fashion. Letter grading.

**C135. Population Genetics. (4)** Lecture, three hours; discussion, one hour. Enforced prerequisite: Life Sciences 4 or 7A. Strongly recommended: course 100, Mathematics 31A, and 31B or Life Sciences 30B. Basic principles of genetics of population, dealing with genetic structure of natural populations and mechanisms of

evolution. Equilibrium conditions and forces altering gene frequencies, polygenic inheritance, molecular evolution, and methods of quantitative genetics. Concurrently scheduled with course C235. Letter grading.

**136. Ecological Restoration. (6)** Lecture, two and one half hours; laboratory, three hours; three field trips. Requisites: course 100, Life Sciences 1 or 7B. Study of ecosystems that have been degraded by overuse or unsustainable extraction of natural resources, foundation of restoration ecology including historical knowledge, reference sites, soil preparation, biodiversity, California natives, succession, disturbances, and best management practices when restoring landscape. Students learn to identify classic symptoms of unhealthy ecosystem and important metrics to determine if and when ecosystem is recovering. Students evaluate Stone Canyon Creek at UCLA. Students develop site and vegetation maps, conduct soil and water tests, and assess overall health of area. Students develop recommendations for restoration plan. Mandatory all-day field trips. Letter grading.

**137. Chemical Communication. (4)** Lecture, three hours; discussion, one hour. Requisites: Chemistry 14A, 14B, 14BL, 14C, 14CL, and 14D, or 20A, 20B, 20L, 30A, 30AL, 30B, and 30BL, Life Sciences 1, 2, 3, 23L. Chemical signals are most important means by which organisms communicate. Exploration of how chemical signals are produced, transported, and influence behavior of microbes, plants, and animals. Synthetic approach, with emphasis on applications to cell biology, physiology, and ecology. P/NP or letter grading.

**M139. Introduction to Chemical Oceanography. (4)** (Same as Atmospheric and Oceanic Sciences M105.) Lecture, three hours; discussion, one hour. Introductory course for physical sciences, life sciences, and engineering majors interested in oceanic environment. Chemical composition of oceans and nature of physical, chemical, and biological processes governing this composition in past and present. Cycles of major and minor oceanic constituents, with focus on those that are most important for life (i.e., carbon, nitrogen, phosphorus, silicon, and oxygen). Investigation of primary production, export production, remineralization, diagenesis, air-sea gas exchange processes. Letter grading.

**140. Biology of Marine Mammals. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Examination of evolution, systematics, natural history, anatomy, physiology, and conservation of mammals secondarily adapted to life in oceans: cetaceans, pinnipeds, sirenians, marine otters, and polar bear. Through lectures and readings from recent primary literature, students gain understanding of special adaptations to mammalian life in aquatic environment, roles of marine mammals in oceanic ecosystems, and general principles of marine mammal population biology. Study of historical and contemporary exploitation, conservation, and management of marine mammal stocks. Letter grading.

**142. Aquatic Communities. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Overview of species and communities in marine and freshwater environments. Exploration of interactions of physical and biological factors that shape communities and how scientists test hypotheses. Emphasis on critical reading of primary literature. Letter grading.

**143. Viral Ecology and Evolution. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 7A, 7B, 7C, 23L. Viruses are most common biological entity on planet, and have broad-ranging ecological and evolutionary environmental and medical impacts. This makes understanding roles of viruses central to understanding how ecosystems work, how microorganisms change over time in face of viral infection, how viral pandemics occur and progress, and how many human diseases affect individual health. Students gain comprehensive understanding of how viruses operate in environmental and medical systems, and how they and their hosts evolve over time; and reasoned perspective on future impacts of viruses in changing ecosystems, and on human societies and health. Emphasis on development of mechanistic understanding of viruses. Letter grading.

**144. Prehistoric California. (4)** Lecture, three hours; discussion, one hour; field trips. Requisite: Life Sciences 7B. Recommended: course 100. Survey of history of life as illustrated in fossil record of California. Emphasis on how faunas have changed over time, especially during periods of diversification and extinction. Relation of influence of major events of geologic, climatic, and environmental change on living organisms to environmental change on human timescales. Emphasis on how scientists collect and evaluate fossil data through understanding of living organisms. Letter grading.

**144L. Prehistoric California Laboratory. (4)** Laboratory, three hours. Corequisite: course 144. Survey of major groups of organisms from oceans and on land that can be found in fossil record of California, and relation of them to some of major events in history of life. Emphasis on how faunas have changed over time, especially during periods of diversification and extinction. Consideration of what can be ascertained about life and environments of past from fossils of California and rocks that contain them. Letter grading.

**M145. Advanced Paleontology. (4)** (Same as Earth, Planetary, and Space Sciences M118.) Lecture, three hours. Requisite: course 110 or 117 or Earth, Planetary, and Space Sciences 116. Consideration of major factors that have influenced history of life, including analytical approaches to analyzing patterns in fossil record, nature of rock record, and contribution of data from stable isotopes, functional morphology, phylogenetics, and developmental biology. P/NP or letter grading.

**C146. Conservation Genetics. (4)** Lecture, three hours; discussion, one hour. Requisites: course 150 or Life Sciences 107, Life Sciences 7A, 7B, 7C. Conservation genetics is interdisciplinary field that integrates genetic methods and concepts from population genetics, evolutionary biology, molecular ecology, and systematics to understand how to conserve and manage populations and species of natural organisms, and understand genetic processes underlying why some go extinct. Case studies of plants and animals cover range of topics including habitat loss, population size, and inbreeding depression; landscape change and genetic connectivity of populations; climate change and local adaptation; management of wild and natural populations; and invasive species. Concurrently scheduled with course C246. Letter grading.

**147. Biological Oceanography (4)** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Requisites: Chemistry 14A, 14B, and 14BL, or 20A, 20B, 20L, and 30AL, Life Sciences 1, 3, 23L. Lectures include physical, chemical, and biological factors affecting abundance and distribution of organisms in marine environment. Laboratory includes experimental studies of local marine organisms, with emphasis on primary and secondary production and nutrient flux. Letter grading.

**148. Biology of Marine Plants. (4)** Five-week intensive course. Lecture, five hours; laboratory, 15 hours. Requisites: Chemistry 14A, 14B, and 14BL, or 20A, 20B, 20L, and 30AL, Life Sciences 1, 3, and 23L, or 7A, 7B, and 23L. Introduction to general biology of marine algae, including basics of structure reproduction, life histories, systematics, and introduction to physiology and ecology of marine algae. Techniques in culture and laboratory investigation and utilization of algae. Given off campus at marine science center. Letter grading.

**149. Evolutionary Genomics. (4)** Lecture, two hours; laboratory, two hours. Requisites: Life Sciences 7A, 7B, 7C, 23L. Evolutionary genomics is study of variation and changes in genomic sequences due to natural selection pressures. Virtually all organisms on this planet experience evolutionary pressures. Evolutionary pressures act on genomic variation, and in turn can change genomic composition of populations and whole species. Study of how evolutionary forces of mutation, drift, selection, recombination, and migration can change genomes. Analysis of genomic data to make evolutionary inferences. Letter grading.

**150. Principles of Genetics. (4)** Lecture, three hours; discussion, one hour. Requisites: Chemistry 14A or 20A, 14C or 30A, Life Sciences 7A, 7B, 7C, 23L. Ge-



netics in most diverse and inclusive of biological sciences. Fields as divergent as medicine and evolution require understanding of fundamental concepts of heredity as they apply to individuals and populations. Many important social questions require understanding of genetics for informed decision making. Study of foundations of genetics at level expected of all biologists. Students learn basic terminology of field and physical and biochemical basis of various modes of heredity. Students gain understanding of some social implications of various aspects of genetics, and tools necessary to form informed opinions on these issues. Letter grading.

**150L. Principles of Genetics Laboratory. (4)** Laboratory, four hours. Corequisite: course 150. Genetics is most diverse and most inclusive of biological sciences. Fields as divergent as medicine and evolution require understanding of fundamental concepts of heredity as they apply to individuals and populations, and skills to ask and answer questions using genetic techniques. Letter grading.

**151A. Tropical Ecology. (4)** Lecture, one hour; discussion, two hours. Requisite: Life Sciences 1 or 7B. Broad introduction to biodiversity, community structure, and dynamics and ecosystem function of range of tropical forest habitats. Discussion of such themes as biogeography, forest structure, plant growth forms, animal communities, herbivory, forest dynamics, and disturbance regimes. P/NP or letter grading.

**151B. Field Tropical Ecology. (8)** Lecture, three hours; fieldwork, five hours. Requisites: course 100, Life Sciences 1 or 7B. Two weeks of off-campus research projects followed by two-week lecture course and offered only as part of Field Biology Quarter. Introduction to biodiversity, community structure, and dynamics and ecosystem function in tropical forest habitat. Letter grading.

**152. World Vegetation Ecology and Ecophysiology. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 1 or 7B. Diversity of physiological and ecological adaptations in biomes of world, explaining distribution and dynamics of world vegetation types. Focus on processes across scales from cells to ecosystem to globe, instrumentation for environmental and ecophysiological measurements, and experiments used to make discoveries about plant adaptation. Letter grading.

**153. Physics and Chemistry of Biotic Environments. (4)** Lecture, three hours; discussion, one hour. Requisites: Chemistry 14A, 14B, and 14BL (or 20A, 20B, and 20L), Life Sciences 1. Recommended: Life Sciences 2, 3, 4, 23L, Physics 6A. Chemical and physical principles that are critical to functional responses by organisms to their habitats. Focus is integrative, providing comprehensive training in basic sciences of physics and chemistry as applied to environmental processes, and consequences of these processes for individual performance, populations, and communities. Covers variety of topics in applied chemistry, including proton pumps, carbonate biogeochemistry and ocean acidification, and allometric scaling of metabolism and effects of temperature on physiological function. Fundamentals of boundary-layer physics and their role in organism's life history. Physics as natural life process, including how organisms are mechanically structures to avoid, resist, or comply to fluid (air and water) motion. P/NP or letter grading.

**154. California Ecosystems. (5)** Lecture, three hours; laboratory or field trip, four hours. Requisite: Life Sciences 1 or 7B. Recommended: course 100. Introduction to structure, biodiversity, and dynamics of California ecosystems, with focus on Southern California, and impact of human activities on these systems. P/NP or letter grading.

**155. Community Ecology. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Recommended: course 100 or 122. Community ecology is study of biodiversity in ecological context: structure and dynamics of natural species assemblages in space and time, and ecological and evolutionary mechanisms that determine which species are present or absent from particular assemblages. Examination of existing theories of community organization and evidence, both observational and experimental, bearing on these theories. Consideration of diverse

array of communities—plant, animal, microbial, terrestrial, and marine—to give appreciation of extraordinary natural history and diversity of life on Earth as it exists in its living ecological context. Discussion of how ecological communities are responding now and will respond in future to anticipated global change, and conservation implications of these changes. Letter grading.

**156. Biology and Social Justice. (4)** Lecture, four hours. Consideration of intersection of biological discovery and human society to better understand how scientific advances have both promoted and mitigated social inequality. Letter grading.

**M157. Biology of Superheroes: Exploring Limits of Form and Function. (4)** (Same as Society and Genetics M157.) Lecture, four hours; discussion, one hour. Requisites: Life Sciences 1 and 4, or 7A and 7B. Combines topics posed in popular graphic novels, movies, and television with primary scientific literature to explore bizarre phenomena in natural world and delve into basic scientific theory and principles. Topics covered include evolution, genetics, physiology, biomechanics, brain-machine interfacing, and artificial intelligence among others. Students synthesize primary literature on diverse subjects presented. Letter grading.

**158. Introduction to Diversity, Health Disparities, and Environment. (2)** Seminar, one hour; discussion, one hour. Requisite: Life Sciences 7B. Focus on intersection of health disparities and environment. Seminar includes guest lecturers focused on environmental determinants of health, and panel discussions focused on careers addressing health disparities. Discussion where students deconstruct research talks to better understand science and how research on health disparities is conducted. Entry course for three-quarter UCLA-Howard Hughes Medical Institute Health Disparities program. Letter grading.

**M159. Biological Modeling: Mathematical and Computational Approaches. (5)** (Same as Computational and Systems Biology M150.) Lecture, four hours; laboratory, three hours. Requisites: Life Sciences 7A, 7B, 7C, Mathematics 33A and 33B, with grades of C or better. Recommended Requisites: Physics 1A, 1B, and 1C, or 5A, 5B, and 5C, with grades of C or better. Students learn how to translate their biological knowledge and intuition into mathematical equations and computer simulations, and how to interpret and glean biological insights from quantitative results and predictions. Review and integration of core mathematical and computational approaches in novel ways. Students gain experience translating and intuition about systems through many examples across range of biological levels, such as predator-prey, disease transmission, cancer initiation, cell migration, neural systems, vascular networks, sleep, drug interactions, gene expression, and more. Students learn how to manipulate data, basics of coding, and how to instantiate their mathematical models and biological intuition through numerical solutions and simulations. Letter grading.

**160. Introduction to Plant Biology. (4)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 162. Introduction to aspects of plant biology. Topics include plant body, reproduction, plant diversity, gene expression, and basic plant function. Letter grading.

**161. Plant Ecology. (4)** Lecture, two and one half hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Introduction to ecology of terrestrial plants, covering individuals, populations, communities, and global processes. Topics include plant form and function, seed dormancy and population dynamics, life histories, disturbance and succession, community structure and dynamics, and global change. P/NP or letter grading.

**161L. Plant Ecology Laboratory. (4)** Laboratory, four hours. Requisites: course 161 (may be taken concurrently), Life Sciences 7B. Introduction to foundational principles, theory, and field application of ecology. Emphasis on ecology of terrestrial plants, use of these principles to predict consequences, and uncertainties associated with human-caused changes in environment. Examination of both biotic and abiotic elements of environment that influence distribution and abun-

dance of plant species. Includes range of activities, from observations of plant materials in laboratory and in UCLA botanical garden, to manipulative greenhouse experiments with fast growing annual plants, to computer-based explorations of dynamics of foundational ecological models. Letter grading.

**162. Plant Physiology. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 1, 2, 3, and 23L, or 7A, 7B, 7C, and 23L. Basic aspects of plant function, including photochemical, biochemical, and physiological aspects of photosynthesis. Carbon and nitrogen metabolism and its regulation; organellar interactions and compartmentation. Water relations, ion transport, flowering, hormone action, and plant responses to stress. Letter grading.

**162L. Plant Physiology and Ecophysiology Laboratory. (4)** Laboratory, 12 hours. Requisites: course 152 or 162 (may be taken concurrently), Life Sciences 1, 2, 3, and 23L, or 7A, 7B, 7C, and 23L. Focus on whole-plant physiology and ecophysiology from biochemical and molecular processes to whole-plant function and field performance to gain understanding and appreciation of plant function, including dynamic processes of growth, development, and reproduction. Exercises provide training in approaches and instrumentation such that students become scientists, applying physiological techniques to answer questions on plant function, including use of programs such as FunAnatomy (plant anatomy) and FastPlant (growing experiment). To apply this course to the Biology upper-division major laboratory requirement, the corresponding lecture course must be completed with a passing grade. Letter grading.

**163. Biology of Marine Tetrapods. (4)** Lecture, five hours; laboratory and fieldwork, 15 hours. Requisites: Chemistry 14A, 14B, and 14BL, or 20A, 20B, 20L, and 30AL, Life Sciences 1, 3, and 23L, or 7A, 7B, and 23L. Highly recommended: course 111. Five-week intensive course offered only as part of Marine Biology Quarter. Survey of higher vertebrates living in marine habitats, including estuarine amphibians, marine reptiles, seabirds, and marine mammals. Laboratory emphasizes observational and experimental approaches to study of morphology, systematics, ecology, and behavior of local marine birds and mammals. Given off campus at marine science center. Letter grading.

**164. Field Biology of Marine Fishes. (4)** Lecture, five hours; laboratory, 15 hours. Requisite: Life Sciences 1. Recommended: Mathematics 3A, 3B, 3C. Five-week intensive course offered only as part of Marine Biology Quarter. Selected aspects of natural history, ecology, and behavior of diverse assemblage of local marine fishes. Fieldwork strongly emphasized. Given off campus at marine science center. P/NP or letter grading.

**165. Ecological Physiology of Marine Vertebrates. (4)** Lecture, five hours; laboratory, 15 hours. Requisites: Chemistry 14B and 14BL, or 20B and 30AL, Life Sciences 1, 3, 23L. Recommended: Life Sciences 30B or Mathematics 3C or 32A, and Physics 1C and 4BL, or 6C or 6CH. Five-week intensive course offered only as part of Marine Biology Quarter. Introduction to physiological adaptations of marine vertebrates to major physicochemical variables in world oceans and to major marine habitats. Given off campus at marine science center. Letter grading.

**166. Biology of Marine-Land Interface. (4)** Lecture, five hours; fieldwork, 15 hours. Enforced requisites: courses 109, 109L, Chemistry 14A, 14B, 14BL (or 20A, 20B, 20L), Life Sciences 1, Physics 6A, Statistics 13. Recommended: Life Sciences 2, 3, 4. Land-sea interface is one of most biologically rich, yet challenging habitats on Earth. Organisms must contend with wide range of environmental conditions, including extreme variations in temperature, oxygen, pH, ultraviolet radiation, osmotic stress, and water availability. These habitats are among best natural laboratories for investigating patterns and processes of organism-environment interactions. Basic training in characterization of physical and chemical environmental features to establish basic tenets of organismal performance, as well as population and community dynamics in response to extreme environmental challenges. Forging of critical new linkages between chemistry,

physics, and biology through lecture, laboratory, and field investigations. Offered as part of Marine Biology Quarter. Letter grading.

**167. Natural History Collections in Biological Sciences. (4)** Lecture, two and one half hours; discussion, one hour. Requisite: Life Sciences 7B. Consideration of how natural history collections play vital role in research, learning, and engagement. Topics include history of museum collections; history of naming species; collection curation; collections-based research; decolonization and diversity, equity, accessibility, and inclusion practices; and education and outreach using museum collections. Students learn to curate collections and gain understanding of how collections are used for education, outreach, and research. Letter grading.

**167L. Natural History Collections in Biological Sciences Laboratory. (4)** Laboratory, four hours. Requisite: course 167 (may be taken concurrently). Consideration of how natural history collections play vital role in research, learning, and engagement. Topics include history of museum collections; history of naming species; collection curation; collections-based research; decolonization and diversity, equity, accessibility, and inclusion practices; and education and outreach using museum collections. Students learn to curate collections and gain understanding of how collections are used for education, outreach, and research. Culminates in final project, where students synthesize and implement their knowledge to produce educational, outreach, or research product using specimens from museum. Letter grading.

**168. Global Change Ecology. (4)** Lecture, three hours; discussion, one hour. Exploration of physical climate system and its variability, carbon cycle and related biogeochemistry and ecosystem processes, land-use change, urbanization, and interactions among ecosystems, climate, biogeochemistry, and impact of global change on societally relevant issues and concerns. Global change ecology is field at interface between ecological systems and all aspects of environmental change that affects substantial part of globe. Focus on use of observations and models, consideration of multiple scales of change (temporal and spatial), interaction of human behaviors and choices with natural systems, and linkages across different aspects of global change science. Letter grading.

**170. Animal Environmental Physiology. (6)** Lecture, three hours; laboratory, six hours. Requisites: Chemistry 14D, or 30B and 30BL, Life Sciences 1, 2, 3, 4, and 23L, or Life Sciences 7A, 7B, 7C, and 23L, 30B or Mathematics 3C or 32A, Physics 1C and 4BL, or 5B or 6C or 6CH. Not open for credit to students with credit for Physiological Science 166. Designed for Ecology, Behavior, and Evolution majors. Introduction to physiology (function) of animal organs and organ systems, with emphasis on environmental interactions and ecological adaptations. Letter grading.

**171. Coming of Age on Planet Earth. (4)** Lecture, three hours; discussion, one hour. Across phylogenetically broad range of species, individuals in same developmental stage of life share vulnerabilities and similar challenges. Exploration of shared challenges facing animals as they transition from juveniles to mature adults through integration of behavioral ecology, neuroscience, life history theory, and phylogenetic modeling. Emphasis on life history theory, phylogenetic analyses, and development of testable hypotheses. Students gain understanding of how Tinbergian framework can be applied to understanding developmental characteristics; ability to conceive of and perform formal systematic review; skills necessary to create and interpret phylogenies; and framework for applying lenses of behavioral ecology, neuroscience, and evolutionary biology to better understand coming of age on planet Earth. Letter grading.

**C172. Advanced Statistics in Ecology and Evolutionary Biology. (4)** Lecture, two hours; laboratory, two hours. Enforced Requisite: Life Sciences 40 or Statistics 10 or 13. Overview of and application of advanced statistical methods that go beyond linear models and mean comparison, including bootstrapping, permutations, Bayesian statistics, mixed models, clustering, and network analysis. At course end students should be able to explain which statis-

tical approaches are appropriate for different types of research questions and critically evaluate their outputs. All statistical analysis conducted in R. Concurrently scheduled with course C202. P/NP or letter grading.

**CM173. Earth Process and Evolutionary History. (6)** (Same as Earth, Planetary, and Space Sciences CM173.) Lecture, four hours; laboratory, three hours. Requisites: Chemistry 14A, 14B (or 20A, 20B), Life Sciences 1, 2, 3, and 4, or 7A, 7B, and 7C (or 7A and introductory course in geology). Exploration of relationship between physical processes, such as tectonics and climate, and how they affect surface and impact biology of Earth. Study of evolution of universe, Earth, and life, with integration of history of science, including Darwinian evolution and plate tectonics revolutions. Study of formation of matter offers tools to understand geologic process of climate and ecology of Earth. Past climate change to examine expected future human-influenced climate. Consideration of major events in history of life on Earth. Data and methods from geology, genetics, and geochemistry are integrated to reconstruct past events. This reveals how Earth processes shaped life and how life shaped Earth. Concurrently scheduled with course CM228. Letter grading.

**C174. Comparative Biology and Macroevolution. (4)** Lecture, three hours; laboratory, three hours. Requisite: Life Sciences 1 or 7B. Recommended: one introductory statistics course. Modern comparative biology provides framework for studying broad questions in evolution—How do body shapes evolve? What are dynamics of evolutionary arms race? Why are there so many species in tropics? Why are there so many beetles and so few crocodiles? Did dinosaurs put brakes on diversification of mammals? Examination of why tree of life is essential to understanding patterns of biological diversity and how phylogenetic comparative methods are used to test macroevolutionary hypotheses. Concurrently scheduled with course C230. Letter grading.

**175. Evolutionary Dynamics of Sex. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Fitness dynamics of reproduction when females and males are in conflict over reproductive decisions, with focus on animals with human examples as appropriate. Emphasis on natural selection thinking, sexual selection, and origins of sexual conflict, including Fisherian sex allocation, evolution of manipulation through deceptive communication, and theory of Darwinian sexual conflict. Letter grading.

**176. Ecological Ethics. (4)** Seminar, four hours. Requisite: Life Sciences 1 or 7B. Debates and discussions on current ethical considerations relevant to fields of ecology, evolution, conservation, and behavior. Letter grading.

**C177. Practical Computing for Evolutionary Biologists and Ecologists. (4)** Lecture, three hours; laboratory, two hours. Requisite: Life Sciences 1 or 7B. Introduction to fundamental skills needed for manipulation, analysis, and visualization of large data sets. Basic programming and scripting in Python as well as working in shell, regular expressions, and related topics. Concurrently scheduled with course C234. Letter grading.

**M178. Computational Systems Biology: Modeling and Simulation of Biological Systems. (5)** (Same as Bioengineering CM186, Computational and Systems Biology M186, and Computer Science CM186.) Lecture, four hours; laboratory, two hours; discussion, one hour. Requisites: Life Sciences 30A, 30B, Mathematics 32A or M32T, 33A, and 33B; or Mathematics 31A, 31B, 32A or M32T, 33A, and 33B. Dynamic biosystem modeling and computer simulation methods for studying biological/biomedical processes and systems at multiple levels of organization. Intermediate linear and nonlinear control system, multicompartmental, epidemiological, pharmacokinetic, and other biomodeling methods applied to life sciences problems at molecular, cellular, organ, and population levels. Both theory- and data-driven modeling, with focus on translating biomodeling goals and data into dynamical mathematical models, and implementing them for simulation, quantification, and analysis. Numerical simulation, optimization, and parameter identi-

fiability and search algorithms, with model discrimination and analysis and software exercises in PC laboratory assignments. Letter grading.

**C179. Communicating Science to Informal Audiences. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 158, 187. Science communication is essential skill for advancing scientific research and society. Students work collaboratively to communicate results of original research using formal (e.g., written paper and poster/multimedia presentation) and/or informal (e.g., video, brochure, digital media, etc.) forms of science communication. Students also create reflective communication piece (written, podcast, video) about what they learned through process of research that could be shared with broad audience. Concurrently scheduled with course C237. Letter grading.

**180A-180B. Seminars: Biology and Society. (2-4)** Seminar, two hours (course 180A) and four hours (course 180B). Investigations and discussions of current socially important issues involving substantial biological considerations, either or both as background for policy and as consequences of policy. May be repeated once for credit with instructor change. Letter grading.

**181. Parasitology. (6)** Lecture, three hours; laboratory, six hours. Requisites: Life Sciences 1, 3, and 23L, or 7A, 7B, and 23L. Introduction to principles, biology, and evolution of infectiousness, symbiosis, and parasitism, emphasizing protozoan and helminth parasites, including those of man. Letter grading.

**182. Marine Parasitology. (4)** Lecture, five hours; laboratory, 15 hours. Requisite: Life Sciences 1 or 7B. Recommended: courses 112, 181. Five-week intensive course offered only as part of Marine Biology Quarter. Introduction to natural history and ecology of host-parasite interaction involving intertidal fish hosts. Laboratory includes collection and preparation techniques. Given off-campus at marine science center. Letter grading.

**183. Finding Ecological Solutions to Environmental Problems. (4)** Seminar, two hours; discussion, two and one half hours. Requisite: course 100. Ecological practicum in which students work in teams with client (e.g., non-profit, governmental) to research and propose solutions to diverse ecological problems. Students learn practical skills to apply ecological science to solving of diverse and interdisciplinary environmental problems, in intimate and participatory environment. Students learn and are expected to produce high-quality academic work at professional level. Letter grading.

**184. Evolution, Development, and Disease. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 7B. Recommended prerequisite: course 103, 110, 120, M157, C174, or 185. Exploration of developmental mechanisms underlying evolution of animal design, including impacts of environment on these mechanisms. Exploration of what happens to animal form, including that of humans, when these developmental mechanisms are disrupted by environmental and genetic factors. Letter grading.

**185. Evolutionary Medicine. (4)** Lecture, two and one half hours; discussion, one hour. Requisite: Life Sciences 1 or 7B. Not open for credit to students with credit for course 120. Designed for departmental majors specializing in environmental and population biology and in medicine. Introduction to mechanics and processes of evolution, with emphasis on natural selection, population genetics, speciation, evolutionary rates, and patterns of adaptation. Coverage of fundamental principles of evolution, with special focus on medicine and human health. P/NP or letter grading.

**186. Evolutionary Medicine: Clinical Perspective on Medical, Surgical, and Psychiatric Disorders. (4)** Lecture, three hours; discussion, one hour. From breast cancer and heart failure to self-injury, obsessive-compulsive and eating disorders, all contemporary medical issues have evolutionary roots. Understanding of application of evolutionary thought to issues faced by physicians, veterinarians, psychologists, and other healthcare providers. Development of awareness and understanding of evolutionary roots of these disorders provides future healthcare providers

with expanded perspective that enhances their practice and benefits their patients in whatever field they enter. Letter grading.

**187. Variable Topics in Ecology and Evolutionary Biology. (4)** Lecture, three hours; discussion, one hour. Prerequisites: Life Sciences 1, 2, 3, 4, and 23L, or 7A, 7B, 7C, and 23L. Investigation, discussion, and study of current important issues involving substantial biological considerations in ecology and evolutionary biology. Contact Undergraduate Advising Office for current topics. May be repeated for credit. P/NP or letter grading.

**188. Special Courses in Ecology and Evolutionary Biology. (2)** Seminar, two hours. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Ecology and Evolutionary Biology. (1)** Seminar, one hour. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. P/NP grading.

**191. Variable Topics Research Seminars: Ecology and Evolutionary Biology. (4)** Seminar, three hours. Seminars on current issues in research in ecology and evolutionary biology. Consult Schedule of Classes for topics and instructors. If content is approved in advance by Undergraduate Advising Office, undergraduate departmental majors may petition to use course to satisfy or partially satisfy elective requirement. May be repeated for credit with consent of instructor. P/NP or letter grading.

**192A-192B. Undergraduate Assistant in Ecology and Evolutionary Biology. (4-2)** Seminar, 12 hours (course 192A) and six hours (course 192B). Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students in assisting with courses related to biology. Students assist in preparation of materials and development of innovative programs with guidance of faculty members in small course settings. Consult Undergraduate Advising Of-

fice for further information. May not be applied toward course requirements for departmental majors. May be repeated for credit. P/NP grading.

**193. Journal Club Seminars: Ecology and Evolutionary Biology. (1)** Seminar, two hours. Enforced corequisite: one course from 198A through 198D or 199. Limited to undergraduate students. Development of in-depth understanding of and ability to discuss current literature in field of students' own research. May be repeated for credit. P/NP grading.

**194A. Research Group or Internship Seminars: Access to Research Careers. (2)** Seminar, six hours. Designed for juniors/seniors in research traineeships or those who have strong commitment to pursue graduate studies in molecular, biochemical, physiological, or biomedical fields. Weekly presentation and discussion of paper selected from current literature. No more than 4 units may be applied toward departmental majors. May be repeated for credit. Letter grading.

**194B. Research Group or Internship Seminars: Ecology and Evolutionary Biology. (1)** Seminar, two hours. Corequisite: one course from 198A through 198D or 199. Designed to encourage participation and stimulate progress in specific research areas for undergraduate students who are part of departmental research group or internship. Discussion of use of specific research methods and current literature in field or of research of faculty members or students. May be repeated for credit. P/NP or letter grading.

**195. Community or Corporate Internships in Ecology and Evolutionary Biology. (4)** Tutorial, 12 hours. Internship course for juniors/seniors to be supervised by Center for Community Learning, fieldwork site, and faculty adviser. Consult Undergraduate Advising Office for more information. Students meet on regular basis with instructor and provide periodic reports of their experience. May not be applied toward requirements for departmental majors. May be repeated twice for credit. Individual contract with supervising faculty member required. P/NP grading.

**196. Research Apprenticeship in Ecology and Evolutionary Biology. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A-198D. Honors Research in Ecology and Evolutionary Biology. (4 each)** Tutorial, 12 hours. Limited to juniors/seniors. Supervised individual research designed to broaden and deepen students' knowledge of some phase of biology. Must be taken with Ecology and Evolutionary Biology Department faculty for at least two terms and for total of at least 8 units. Eight units may be applied toward departmental majors. Individual contract required. In Progress (198A) and letter (198B) grading. Students may elect to enroll in additional research through courses 198C and 198D (letter grading). Report on progress must be presented to undergraduate adviser each term 198 course is taken.

**199. Directed Research in Ecology and Evolutionary Biology. (2 to 4)** Tutorial, six to 12 hours. Preparation: submission of written proposal outlining study or research to be undertaken. Studies to involve laboratory or field-related research, not literature surveys or library research. Proposal to be developed in consultation with instructor and submitted for approval to undergraduate adviser before day instruction begins in that term. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. At end of term culminating report describing progress of study or research and signed by student and instructor must be presented to undergraduate adviser. Only one 199 course may be applied toward departmental majors. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**200A. Evolutionary Biology. (4)** (Formerly numbered M200A.) Lecture, two hours; discussion, two hours. Current concepts and topics in evolutionary biology, including microevolution, speciation and species concepts, analytical biogeography, adaptive radiation,

mass extinction, community evolution, molecular evolution, and development of evolutionary thought. S/U or letter grading.

**200B. Ecology. (4)** Lecture, two hours; discussion, two hours. Principles and current topics in ecology. Topics may include island biogeography, disturbance ecology, chemical ecology, and physiological ecology. S/U or letter grading.

**200C. Advanced Animal Behavior. (4)** Lecture, two hours; discussion, two hours. Survey of major topics in field of behavioral ecology. Topics include introduction to variety of research pursuits in field and questions and debates at leading edges of research. Advanced interdisciplinary primer that spans topics from mechanisms of behavior at molecular and cellular levels to consequences of behavior for Darwinian fitness and ecological and evolutionary processes. S/U or letter grading.

**201. Introduction to R for Ecology and Evolutionary Biology. (1)** Lecture, six hours; discussion, six hours. Designed for departmental PhD students. Offered as intensive two-day course at beginning of term. Introduction to R language. Topics include working at command line, writing scripts and functions, flow control, graphics, and conducting basic simulations in discrete and continuous time. S/U grading.

**C202. Advanced Statistics in Ecology and Evolutionary Biology. (4)** Lecture, two hours; laboratory, two hours. Enforced Requisite: Life Sciences 40 or Statistics 10 or 13. Overview of and application of advanced statistical methods that go beyond linear models and mean comparison, including bootstrapping, permutations, Bayesian statistics, mixed models, clustering, and network analysis. At course end students should be able to explain which statistical approaches are appropriate for different types of research questions and critically evaluate their outputs. All statistical analysis conducted in R. Concurrently scheduled with course C172. S/U or letter grading.

**203. Marine Botany and Physiology. (4)** Lecture, two hours; discussion, one hour; laboratory, six hours; experimental project. Designed for graduate students. Structure, reproduction, life histories, and biology of marine algae, with emphasis on physiological ecology and biochemistry. Techniques in culture and physiological, ecological, and biochemical investigation of algae. Given off campus at marine science center. S/U or letter grading.

**204. Advanced Biology of Algae. (4)** Lecture, four hours; discussion, one hour. Consideration of current research in experimental phycology. Topics include discussion of appropriate aspects of chemical and physical oceanography and limnology; algal physiology; biochemistry, physiological ecology, and algal processes in ocean and freshwater habitats. S/U or letter grading.

**205. Marine Invertebrate Biology. (4)** Lecture, four hours; laboratory, eight hours. Functional morphology, life histories, and systematics of marine invertebrates of all major and most minor taxa; emphasis on living animal and its habitat. Given off campus at marine science center. S/U or letter grading.

**206. Advanced Ichthyology. (4)** Lecture, three hours; laboratory, three hours. Requisite: course 111 or 112. Advanced study of various aspects of fish biology. Theme varies from year to year. May be repeated for credit. S/U or letter grading.

**208. Advanced Vertebrate Morphology. (4)** Lecture, two hours; laboratory, eight hours. Requisite: course 110. Emphasis on functional approach to evolution of vertebrate locomotor, feeding, and circulatory systems. Laboratory includes comparative and experimental analyses of morphological adaptation. Independent project required. May be repeated once for credit. S/U or letter grading.

**209. Behavior of Arthropods. (4)** Lecture, three hours; discussion, one hour. Advanced study of topics in behavior of terrestrial arthropods, including communication, feeding, reproductive, and social behavior. Emphasis on both mechanistic and adaptive approaches toward understanding behavior. Independent project required. S/U or letter grading.

**210. Advanced Ornithology. (4)** Lecture, two hours; laboratory, two hours; fieldwork, two hours. Prerequisite: course 114A. Advanced study of topics in modern avian biology. Emphasis on experimental approaches to investigations of physiology (energetics, nutrition, osmoregulation), ecology (population and community organization), and behavior (foraging, breeding, sociality). S/U or letter grading.

**217. Marine Ecology. (4)** Lecture, four hours; discussion, one hour. Designed for graduate students. Structure, diversity, and energetics of marine communities; behavior, population dynamics, and biogeography of component species; associated oceanography and geology. Given off campus at marine science center. S/U or letter grading.

**218. Oceanology. (4)** Lecture, four hours; discussion, one hour. Designed for graduate students. Ecology and dynamics of pelagic and benthic associations; physicochemical properties of seawater and marine substrates and their biological significance; qualitative and quantitative methods of oceanology. Given off campus at marine science center. S/U or letter grading.

**C219A. Mathematical and Computational Modeling in Ecology. (4)** Lecture, three hours; discussion, one hour. Prerequisite: Life Sciences 30B or Mathematics 3B or 31A. Recommended: courses 100, 122, Life Sciences 1 or 7B, Mathematics 3C. Introduction to modeling dynamics of ecological systems, including formulation and analysis of mathematical models, basic techniques of scientific programming, probability and stochastic modeling, and methods to relate models to data. Examples from ecology but techniques and principles applicable throughout life and physical sciences. Concurrently scheduled with course C119A. S/U or letter grading.

**C219B. Modeling in Ecological Research. (4)** Lecture, two hours; discussion, two hours. Recommended prerequisite: course C219A. Advanced techniques in mathematical and computational modeling of ecological dynamics and other population dynamic problems. Independent research projects developed by students. Topics include model formulation, stochastic models, fitting models to data, sensitivity analysis, presentation of model results, and other topics from current literature. Concurrently scheduled with course C119B. S/U or letter grading.

**220. Conservation Science: Theory and Practice. (3)** Lecture, three hours. Limited to graduate students. Conceptual foundations of conservation science and its applications to real-world conservation problems. Designed for students who intend to be academic researchers and want to learn about conservation in way that can make research immediately relevant, and those who intend to be conservation practitioners and want to be exposed to cutting-edge theory and thinking to tackle today's complex conservation challenges. May be repeated for credit. S/U grading.

**224. Marine Molecular Biology. (8)** Lecture, three hours; laboratory, eight hours. Preparation: background in marine sciences, basic cell biology and biochemistry. Ten-week intensive course designed to train marine biologists in advanced techniques of cell and molecular biology. Independent project required. Given off campus at marine science center. S/U or letter grading.

**M226. Global Health Measures for Biological Emergencies. (4)** (Same as Epidemiology M226.) Lecture, four hours. Prerequisite: Epidemiology 220. Mitigation of bioterrorism falls outside traditional public health programs and public health graduate education. Because of seriousness of such threats, it is important that individuals trained in public health understand problems and responses. Letter grading.

**CM228. Earth Process and Evolutionary History. (6)** (Same as Earth, Planetary, and Space Sciences CM273.) Lecture, four hours; laboratory, three hours. Prerequisites: Chemistry 14A, 14B (or 20A, 20B), Life Sciences 1, 2, 3, and 4, or 7A, 7B, and 7C (or 7A and introductory course in geology). Exploration of relationship between physical processes, such as tectonics and climate, and how they affect surface and impact biology of Earth. Study of evolution of universe, Earth, and life, with integration of history of science, including Darwinian evolution and plate tec-

tonics revolutions. Study of formation of matter offers tools to understand geologic process of climate and ecology of Earth. Past climate change to examine expected future human-influenced climate. Consideration of major events in history of life on Earth. Data and methods from geology, genetics, and geochemistry are integrated to reconstruct past events. This reveals how Earth processes shaped life and how life shaped Earth. Concurrently scheduled with course CM173. Letter grading.

**C230. Comparative Biology and Macroevolution. (4)** Lecture, three hours; laboratory, three hours. Prerequisite: Life Sciences 1 or 7B. Recommended: one introductory statistics course. Modern comparative biology provides framework for studying broad questions in evolution—How do body shapes evolve? What are dynamics of evolutionary arms race? Why are there so many species in tropics? Why are there so many beetles and so few crocodiles? Did dinosaurs put brakes on diversification of mammals? Examination of why tree of life is essential to understanding patterns of biological diversity and how phylogenetic comparative methods are used to test macroevolutionary hypotheses. Concurrently scheduled with course C174. S/U or letter grading.

**M231. Molecular Evolution. (4)** (Same as Earth, Planetary, and Space Sciences M217.) Lecture, two hours; discussion, two hours. Series of advanced topics in molecular evolution, with special emphasis on molecular phylogenetics. Topics may include nature of genome, neutral evolution, molecular clocks, concerted evolution, molecular systematics, statistical tests, and phylogenetic algorithms. Themes may vary from year to year. May be repeated for credit. S/U or letter grading.

**M232. Evolutionary Ecology. (4)** (Formerly numbered 232.) (Same as Biomathematics M212.) Lecture, two and one half hours. Prerequisite: course M200A or 200B, or equivalent. Concepts and topics include fundamental concepts of evolutionary ecology, including life history theory, quantitative genetics and phenotypic evolution, and advances made in field in last decade. May be repeated for credit. Letter grading.

**233. UCLA/La Kretz Workshop in Conservation Genomics. (2)** Lecture, two hours; discussion, one hour; laboratory, two hours. Five-day field experience at La Kretz Center Field Station and Stunt Ranch in Santa Monica Mountains. Conservation biology and genetics have had long and intimate relationship and constitute one key application of evolutionary analysis to real-world biological problems. Impacts of population genetics, phylogenetics, and phylogeography have been particularly striking for conservation biology and have helped solve some of most pressing problems in biological conservation. Annual workshop to provide training environment for small group of motivated graduate students to explore how conservation problems can best be addressed with genomic-level data. Hands-on experience on efficient collection, troubleshooting, and analysis of large datasets for conservation-relevant problems. Active participation from members of several U.S. government agencies at forefront of endangered species protection and management, providing forum for exploring relevant aspects of conservation genomics to managers. S/U grading.

**C234. Practical Computing for Evolutionary Biologists and Ecologists. (4)** Lecture, three hours; laboratory, two hours. Prerequisite: Life Sciences 1 or 7B. Introduction to fundamental skills needed for manipulation, analysis, and visualization of large data sets. Basic programming and scripting in Python as well as working in shell, regular expressions, and related topics. Concurrently scheduled with course C177. Letter grading.

**C235. Population Genetics. (4)** Lecture, three hours; discussion, one hour. Basic principles of genetics of population, dealing with genetic structure of natural populations and mechanisms of evolution. Equilibrium conditions and forces altering gene frequencies, polygenic inheritance, molecular evolution, and methods of quantitative genetics. Concurrently scheduled with course C135. S/U or letter grading.

**236. Seminar: Marine Molecular Biology. (4)** Seminar, 10 hours. Prerequisite: course 224. Seminar on current issues and work in marine molecular biology. Given off campus at marine science center. S/U or letter grading.

**C237. Communicating Science to Informal Audiences. (4)** Lecture, three hours; discussion, one hour. Prerequisites: courses 158, 187. Science communication is essential skill for advancing scientific research and society. Students work collaboratively to communicate results of original research using formal (e.g., written paper and poster/multimedia presentation) and/or informal (e.g., video, brochure, digital media, etc.) forms of science communication. Students also create reflective communication piece (written, podcast, video) about what they learned through process of research that could be shared with broad audience. Concurrently scheduled with course C179. Letter grading.

**M238. Ocean Biogeochemical Dynamics and Climate. (4)** (Same as Atmospheric and Oceanic Sciences M235.) Lecture, three hours. Interaction of ocean biogeochemical cycles with physical climate system. Biogeochemical processes controlling carbon dioxide and oxygen in oceans and atmosphere over time-scales from few million years to several years. Anthropogenic perturbation of global carbon cycle and climate. Response of ocean ecosystems to past and future global changes. Use of isotopes to study ocean biogeochemical cycles and climate. Interactions between biogeochemical cycles on land and in ocean. S/U or letter grading.

**240. Physiology of Marine Animals. (4)** Lecture, four hours; discussion, one hour. Designed for graduate students. Lecture and laboratory studies on cellular, tissue, organ, and animal physiology; regulatory biology; metabolic characteristics of cells, energy transformations. Given off campus at marine science center. S/U or letter grading.

**C242. Behavioral Ecology. (4)** Lecture, three hours; discussion, two hours. Prerequisites: course 100, Life Sciences 1 or 7B, Mathematics 3C or 32A or Life Sciences 30B. Recommended: course 129. Evolutionary perspective of behavioral ecology, with extended consideration of selfish DNA, conflict with genomes, natural selection and coevolution, kin selection and diversity in group functioning and cooperation, social learning, game theory and alternative life histories, and human behavioral ecology. Concurrently scheduled with course C126. Letter grading.

**243. Animal Communication. (4)** Lecture, three hours; discussion, one hour. Prerequisites: Mathematics 3C or 32A, and Physics 1C and 4BL, or 6C or 6CH. Physical properties of animal signals and physiological mechanisms underlying their generation and reception. Lectures treat signal analysis, signal transmission, and receptor design in light of constraints placed on each sensory modality. Examples of communication systems using visual, auditory, chemical, electrical, and magnetic cues, with emphasis on biological adaptations for efficiently signaling species-specific information. S/U or letter grading.

**244. Advanced Insect Physiology. (4)** Lecture, two hours; laboratory, five hours. Detailed discussion of current problems in insect physiology, with advanced laboratory. S/U or letter grading.

**C246. Conservation Genetics. (4)** Lecture, three hours; discussion, one hour. Prerequisites: course 150 or Life Sciences 170, Life Sciences 7A, 7B, 7C. Conservation genetics is interdisciplinary field that integrates genetic methods and concepts from population genetics, evolutionary biology, molecular ecology, and systematics to understand how to conserve and manage populations and species of natural organisms, and understand genetic processes underlying why some go extinct. Case studies of plants and animals cover range of topics including habitat loss, population size, and inbreeding depression; landscape change and genetic connectivity of populations; climate change and local adaptation; management of wild and natural populations; and invasive species. Concurrently scheduled with course C146. S/U or letter grading.



**247. Advanced Plant Biology. (4)** Lecture, three hours; discussion, two hours. Requisite: course 162 or Molecular, Cell, and Developmental Biology C141. Open to undergraduates with consent of instructor. Designed to expose first-year graduate students to topics of current interest in plant biology. Subjects include plant genetics, growth and development, organelle structure, development and function, and plant-specific metabolic processes (photosynthesis, nitrogen fixation, metabolism of small molecules). S/U or letter grading.

**250. Professional Skills for Biological Research. (2 to 3)** Seminar, two hours. Preparation, writing, and submission of research proposals. Collection and maintenance of field and laboratory data, preparation of scientific presentations, review of literature, and publishing strategies. Optional field trip offered during some years for 1 extra unit. S/U or letter grading.

**251. Seminar: Systematics. (2)** Seminar, two to four hours. Current topics in systematic biology, including methods development and specific applications in study of phylogeny. Theme varies from year to year. May be repeated for credit. S/U or letter grading.

**253. Seminar: Plant Structure. (2)** Seminar, two hours. S/U or letter grading.

**255. Seminar: Invertebrate Zoology. (2)** Seminar, two hours. S/U or letter grading.

**259. Seminar: Herpetology. (2)** Seminar, three hours. Seminar on current approaches to herpetology. Main theme varies from year to year in areas such as biogeography, ecology, behavior, environmental physiology. S/U or letter grading.

**260. Seminar: Biology of Terrestrial Vertebrates. (2)** Seminar, two hours. S/U or letter grading.

**261. Molecular Ecology of Plant Populations. (2)** Seminar, two hours. Requisite: course M200A. Integration of ecological, population genetic, and evolutionary concepts to understand evolutionary ecology and conservation biology of plant populations in natural and disturbed settings, with application to both terrestrial and marine systems. Letter grading.

**263. Seminar: Population Genetics. (2 or 4)** Seminar, three to six hours. Seminar on topics of current interest in population genetics, such as kin selection, sociobiology, cultural evolution, conservation genetics, etc. S/U or letter grading.

**264. Seminar: Stomatal Function. (4)** Seminar, two hours; discussion, two hours. Open to undergraduates with consent of instructor. Structure and function of guard cells; gas exchange; environmental and hormonal regulation of stomatal responses; sensory transduction; stomatal adaptations. S/U or letter grading.

**265. Seminar: Biophysical Plant Ecology. (2)** Seminar, two hours. S/U or letter grading.

**267. Seminar: Current Topics in Evolutionary Ecology. (2)** Seminar, two hours. S/U or letter grading.

**268. Seminar: Population Biology. (2)** Seminar, two hours. S/U or letter grading.

**269. Seminar: Animal Ecology. (2)** Seminar, three hours. Advanced study of specific topics in animal ecology and related fields. S/U or letter grading.

**270. Seminar: Environmental Physiology. (2)** Seminar, two hours. S/U grading.

**271. Seminar: Phycology and Mycology. (2)** Seminar, two hours. Requisite: course 101. Advanced study in biology of algae and fungi. Topics in physiological ecology, physiology, and biochemistry of algae and fungi, and their industrial uses. Algae and fungi as experimental organisms. Phylogeny and origin of eukaryote organisms. Evolutionary origin of chloroplasts. S/U or letter grading.

**272. Seminar: Marine Biology. (2)** Seminar, two hours. S/U or letter grading.

**273. Seminar: Entomology. (2)** Seminar, two hours. Discussion of specific topics in entomology and related fields. Main theme varies from year to year, but usually emphasizes areas such as behavior, ecology, and evolution. S/U grading.

**274. Seminar: Behavioral Ecology. (2)** Seminar, two hours. Discussion of theoretical and empirical aspects of topics in behavioral ecology. S/U or letter grading.

**279. Seminar: Evolutionary Biology. (2)** Seminar, two hours. Requisite: course M231. Emphasis on particular issue in evolutionary biology, varying in topic whenever offered. Topics may include advances in phylogenetic methodology; relationship between development and evolution; biogeography, climate change, and faunal evolution; dispersal mechanisms and macroevolutionary patterns; adaptation and diversification; macroevolutionary patterns in fossil record. S/U or letter grading.

**282. Seminar: Ichthyology. (2)** Seminar, two hours. Requisite: course 111 or 112. Student presentations and discussion of specific topics in ichthyology. Theme varies from year to year. May be repeated for credit. S/U or letter grading.

**M286. Seminar: Statistical Problem Solving for Population Biology. (2)** (Same as Statistics M286.) Seminar, two hours. Designed for graduate students. Statistical solutions to complex data analysis and/or experimental design problems encountered by biology graduate students in their own research. S/U or letter grading.

**288. Seminar: Plant Cell Biology. (2)** Seminar, two hours. Recommended preparation: course 162. S/U or letter grading.

**M290. Seminar: Comparative Physiology. (2)** (Same as Physiological Science M290.) Seminar, two and one half hours. Discussion of specific topics in comparative physiology of animals. Topics vary from year to year, with emphasis on systems physiology, neuroethology, or behavioral physiology. S/U or letter grading.

**291. Seminar: Physiology and Biochemistry of Arthropods. (2)** Seminar, two hours. S/U or letter grading.

**296. Seminar: Ecology and Evolutionary Biology. (1 to 4)** Seminar, three hours. Advanced study and analysis of current topics in cellular, organismic, and population biology. Discussion of current research and literature in research specialty of faculty member teaching course. S/U or letter grading.

**297. Selected Topics in Ecology and Evolutionary Biology. (1 to 4)** Seminar, one to three hours. Advanced study and analysis of variable research topics in research issues in ecology and evolutionary biology. Consult Schedule of Classes for topics and instructors. May be repeated for credit with consent of instructor. S/U or letter grading.

**299. Seminar: Parasitology. (2)** Seminar, two hours. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Preparation for Teaching Biology in Higher Education. (2)** Seminar, to be arranged. Designed for graduate students. Study of problems and methodologies in teaching biology, which includes workshops, seminars, apprentice teaching, and peer observation. S/U grading.

**496. Preparation for Teaching Biology in Higher Education. (2)** Lecture, two hours. Designed for graduate students. Strongly recommended as sequel to course 495 discussions on teaching, theory, and development of advanced skills. Study of methods and approaches to teaching of specific areas in biology, with emphasis on laboratory teaching, instructor/student interaction, and undergraduate motivation. S/U grading.

**596. Directed Individual (or Tutorial) Studies. (2 to 12)** Tutorial, to be arranged. Letter grading.

**596F. Directed Individual (or Tutorial) Studies. (2 to 8)** Tutorial, to be arranged. Given off campus at marine science center. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. May not be applied toward MA or PhD course requirements. S/U grading.

**598. MA Thesis Research and Writing. (2 to 12)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Writing. (2 to 12)** Tutorial, to be arranged. S/U grading.

## ECONOMICS

*College of Letters and Science*

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Los Angeles, CA 90095-1477

**Economics**  
310-825-1011

Jinyong Hahn, PhD, *Chair*  
John W. Asker, PhD, *Undergraduate Vice Chair*  
Ichiro Obara, PhD, *Graduate Vice Chair*  
Andrew G. Atkeson, PhD, *Director, Business Economics*

## Faculty Roster

### Professors

John W. Asker, PhD (*Armen A. Alchian Professor of Economic Theory*)  
Andrew G. Atkeson, PhD (*Stanley M. Zimmerman Endowed Professor of Economics and Finance*)  
Martha J. Bailey, PhD  
Simon A. Board, PhD (*Benjamin Graham Endowed Professor of Value Investing*)  
Ariel T. Burstein, PhD  
Denis N. Chetverikov, PhD (*Charles E. Davidson Endowed Term Professor of Economics*)  
Dora L. Costa, PhD (*Kenneth L. Sokoloff Professor of Economic History*)  
Sebastian Edwards, PhD (*Henry Ford II Professor of International Management*)  
Pablo D. Fajgelbaum, PhD (*Dubchansky Endowed Professor of Economics*)  
Jinyong Hahn, PhD  
Gary D. Hansen, PhD  
Hugo A. Hopenhayn, PhD  
Oleg Itskhoki, PhD (*Venu and Ana Kotamraju Endowed Professor of Economics*)  
Zhipeng Liao, PhD  
Adriana Lleras-Muney, PhD  
Rosa L. Matzkin, PhD (*Charles E. Davidson Endowed Professor of Economics*)  
Maurizio Mazzocco, PhD  
Kathleen M. McGarry, PhD  
Moritz Meyer-ter-Vehn, PhD  
Ichiro Obara, PhD  
Lee E. Ohanian, PhD  
Peter E. Rossi, PhD (*James A. Collins Professor of Management*)  
Andres Santos, PhD  
Aaron Tornell, PhD  
Jonathan E. Vogel, PhD  
Till M. von Wachter, PhD  
Pierre-Olivier Weill, PhD

### Professors Emeriti

William R. Allen, PhD  
Masanao Aoki, PhD  
Costas Azariadis, PhD  
Moshe Buchinsky, PhD  
Harold Demsetz, PhD  
Bryan C. Ellickson, PhD

Roger E. Farmer, PhD  
 Arnold C. Harberger, PhD  
 Benjamin Klein, PhD  
 Deepak K. Lal, DPhil (*James S. Coleman Professor Emeritus of International Development Studies*)  
 Naomi R. Lamoreaux, PhD  
 Axel S. Leijonhufvud, PhD  
 John J. McCall, PhD  
 Joseph M. Ostroy, PhD  
 John G. Riley, PhD  
 Finis R. Welch, PhD  
 William R. Zame, PhD

### Associate Professors

David R. Baqaee, PhD  
 Natalie D. Bau, PhD  
 Saki Bigio, PhD  
 Michela Giorcelli, PhD  
 Martin B. Hackmann, PhD  
 Jay Y. Lu, PhD  
 Sule Ozler, PhD

### Assistant Professors

Alexander W. Bloedel, PhD  
 Daniel Clark, PhD  
 Bernardo S. da Silveira, PhD  
 Felipe M. Goncalves, PhD  
 João Guerreiro, PhD  
 Daniel Haanwinckel, PhD  
 Juliana Londoño-Vélez, PhD  
 Rodrigo R.A. Pinto, PhD  
 William M. Rafey, PhD  
 Michael A. Rubens, PhD  
 Tomasz M. Sadzik, PhD  
 Yotam Shem-Tov, PhD  
 Shuyang Sheng, PhD

### Lecturer

Edward P. McDevitt, PhD

### Adjunct Associate Professor

Randall R. Rojas, PhD

### Adjunct Assistant Professors

Kimberly S. Boswell, PhD  
 Patrick D. Convery, MBA, PhD  
 Olivia I. Osei-Twumasi, PhD  
 William E. Simon, Jr., JD, PhD  
 Christopher J. Surro, PhD

## Overview

The UCLA Department of Economics is one top-ranked departments in the world. Through their research, the young and active faculty shape policy and inform the public on critical issues affecting the U.S. and the world. The department's work covers diverse topics such as the origins and persistence of the Great Depression and its lessons for today's economy, the relationship between education and health outcomes, cartels and antitrust policy, the economics of health care, and the impact of immigration on labor markets. Many faculty have received special recognition for their body of research by election to prestigious institutions such as the National Academy of Science, the American Academy of Arts and Sciences, and the Econometric Society, or have received celebrated awards such as the Guggenheim and Sloan Fellowships.

The undergraduate students are equally impressive. They are among the brightest students on campus and consistently go on to find success in the job market and in graduate school. Approximately 3,000 majors make the department the largest among major economics departments across the country, and one of the largest majors on campus. Students come from countries around the world, but the majority call California their home. Many are the first in their families to attend college, and the department is proud of them and their accomplishments.

An economics degree opens the door to a world of opportunities beyond UCLA. Department alumni play important roles in business, entertainment, and academia. Many maintain strong ties with UCLA and with the department. Undergraduate students go on to attend business school, law school, medical school, and graduate school in a variety of disciplines.

## Undergraduate Study

The Economics Department undergraduate program is designed for students who wish to gain a thorough understanding of both empirical and theoretical approaches to economics. Emphasis is on economic principles applied to resolving interpersonal conflicts of interest and coordinating productive activity in a world of scarce resources. Because students must gain a thorough theoretical and technical competence before extensive study of the applied specializations in the discipline, the analytic core of the major in Economics is closely structured. Some courses are appropriate for non-majors, but the curriculum is most suitable for students who wish to make the study of economics the primary focus in their undergraduate education.

The undergraduate major provides students with analytical training in reference to socioeconomic phenomena and provides an excellent theoretical background for those pursuing graduate education in economics, law, management, public administration, journalism, social welfare, architecture and urban planning, and education.

## Graduate Study

The graduate program is designed primarily for students pursuing the PhD degree. The doctorate is awarded to those students who have achieved the level of study and training required for a professional economist. The degree recognizes students' ability to make scholarly contributions in their fields of specialization and to undertake advanced research in those areas.

## Undergraduate Majors

### Economics BA

#### Learning Outcomes

The Economics major has the following learning outcomes:

- Application of economic analyses to everyday life, and visualization of economics in real-world situations
- Application of learning to policy-relevant issues
- Ability to understand current events
- Ability to assess the likely impact of specific policies put forth by government entities
- Evaluation of the role played by assumptions in arguments made for and against economic and policy issues
- Use of quantitative evidence and economic models to assess the validity of economic and policy-relevant arguments
- Understanding of statistical methodology and interpretation of statistical evidence
- Use of data to construct quantitative economics arguments, and to understand the statistical problems associated with interpreting the results
- Understanding of the role of sample selection/endogeneity in affecting results, and how to correct for these issues
- Formulation of written arguments that state assumptions and hypotheses, and evaluation of their pros and cons based on evidence
- Oral presentation of a carefully reasoned economic argument, and response to related questions
- Graphic presentation of a carefully reasoned economic argument by means of graphs, figures, charts, and presentation software
- Working knowledge of information databases, and knowledge of how to use the Web in gathering reliable information
- Location and use of primary data sources such as surveys
- Use of knowledge gained to understand and evaluate current economic events and new economic ideas

## Entry to the Major

### Admission

Application for the Economics major should be submitted to the department undergraduate counseling office through the Message Center. To apply, students must have completed at least 72 quarter units (but no more than 135 quarter units), one 12-unit term in residence in regular session at UCLA, and all courses listed under preparation for the major. Grades for preparation for the major courses must be reflected on the Degree Audit Report (DAR) prior to submission.

### Pre-major

While students are completing the lower-division preparation for the major courses, they may be classified as Economics pre-majors.

### Transfer Students

Transfer applicants to the Economics major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one microeconomics course, one macroeconomics course, two calculus courses from the mathematics/physical sciences sequence, and one English critical reading and writing course. Transfer students must successfully complete all remaining pre-major re-

requirements within their first three registered terms at UCLA.

Transfer credit for any of the above is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Economics 1, 2, 11, 41; one Writing II course or English Composition 129B; Mathematics 31A, and 31B or 31E.

### The Major

*Required:* Twelve upper-division economics courses as follows: Economics 101, 102, 103, 103L, 104, 104L, and six Economics Department upper-division elective courses. No more than two of the elective courses may also be selected from Management 120A, 120B, 122, 127A, 130A, 180 (real estate finance only).

### Honors Program

Students must complete Economics 198A and 198B in which a thesis is written.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade. A 2.0 (C) grade is required in each pre-major course. To enter the major, students must have a minimum 2.5 grade-point average in the economics and mathematics preparation courses and a GPA of at least 2.0 in any upper-division courses taken for the major before applying.

For students admitted to UCLA in fall 2023 and later, repetition of more than two pre-major economics courses or of any preparation course more than once, including equivalent courses taken elsewhere, results in automatic denial of admission to the major.

For students admitted to UCLA prior to fall 2023, repetition of more than one preparation course or of any preparation course more than once, including equivalent courses taken elsewhere, results in automatic denial of admission to the major.

### The Major

Each course must be taken for a letter grade. Transfer credit is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major. Laboratory courses are required for all upper-division economics courses when they are offered and listed as mandatory co-requisite.

To graduate, students must have at least a 2.0 grade-point average in their upper-division major courses, with grades of C- or better in Economics 101, 102, 103, 103L, 104, and 104L. A minimum grade of D or better is required in the six upper-division elective courses for the major.

## Honors Program

The departmental honors program is open to majors who have a cumulative grade-point average of at least 3.5 in the major and in all courses taken at UCLA prior to application.

To qualify for departmental honors at graduation, students must (1) select at least seven of the required upper-division economics courses from the approved list designated for departmental honors, (2) complete a two-term senior thesis acceptable to the departmental honors committee in Economics 198A and 198B, and (3) complete the major requirements with at least a 3.5 grade-point average in the economics courses. Highest honors are awarded at the discretion of the departmental honors committee based on grade-point average and quality of the senior thesis.

Economics 198A and 198B, the courses required for thesis preparation, may be counted as upper-division courses toward the field in which the thesis is written (for purposes of satisfying the requirements for the major). More information and application forms are available from an undergraduate counselor in 2263 Bunche Hall.

## Business Economics BA

The Business Economics BA program offers a major for students seeking a business orientation in their study of economics. It does not replicate the traditional undergraduate business school curriculum. Instead, it offers a more tightly focused curriculum that is guided by the rigorous logic and integrative perspective of economics. It is designed to prepare students for graduate education in business, economics, and law. The program requires students to include specific courses offered by the department and the John E. Anderson Graduate School of Management (see [the major](#)).

## Learning Outcomes

The Business Economics major has the following learning outcomes:

- Understanding, through application of microeconomics, of the interaction of individuals and organizations in markets; and of the role of public policy in shaping those interactions
- Understanding, through application of macroeconomics, of the functioning of market economies at regional, national, and global levels; and of the role of public policy in shaping those interactions
- Understanding and application of accounting principles to analysis of business problems
- Acquisition and use of data to evaluate hypotheses with tables, charts, and statistical analyses
- Use of appropriate analytical perspectives and approaches to frame problems involving the interaction of people, organizations, markets, and society; identify effective strategic approaches to problem solving; and gather and organize key information to facilitate problem solving

## Entry to the Major

### Admission

Applications for admission by current UCLA students are handled exclusively by the Department of Economics. To apply, students must have completed at least 72 quarter units (but no more than 135 quarter units), one 12-unit fall, winter, or spring term in residence at UCLA, and all courses listed under preparation for the major. Applications are available on the undergraduate economics Bruin Learn website and are accepted online during the first three weeks of each quarter as well as summer session A. In addition, they must (1) have a 2.0 (C) minimum grade in each preparation course, (2) have a minimum 3.0 (B) overall average in all preparation courses excluding the Writing II course, and (3) have a minimum 2.0 (C) grade-point average in their upper-division courses taken for the major before applying (Economics 101 applies on the major preparation grade-point average).

The requisite grade-point averages plus completion of the preparation for the major courses do not guarantee admission to the program.

### Pre-major

While students are completing the preparation courses for the major, they may be classified as Business Economics pre-majors.

### Transfer Students

Transfer applicants to the Business Economics major must complete the following introductory courses prior to admission to UCLA: one microeconomics course, one macroeconomics course, two calculus courses from the mathematics/physical sciences sequence, one English composition/critical thinking course. Transfer students who wish to enter UCLA as Business Economics pre-majors must meet the admission screening requirements. For information, contact Undergraduate Admission.

Transfer credit for any of the above is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Economics 1, 2, 11, 41, 101; one Writing II course; Management 1A, 1B; Mathematics 31A, and 31B or 31E.

### The Major

*Required:* Economics 102, 103, 103L, 104, 104L, and at least two courses from the 106 series; English Composition 131B; five upper-division elective courses in economics and management (no more than three management courses from Management 108, 120A, 120B, 122, 123, 124, 126, 127A, 127B, 130A, 140 may be applied toward the elective requirement). In addition to Economics 103 and 103L, and 104 and 104L, at least two economics courses with laboratories must be completed



and may be selected from either the Economics 106 series or an economics elective.

### Honors Program

Students must complete Economics 198A and 198B in which a thesis is written.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade.

For students admitted to UCLA in fall 2023 and later, repetition of more than two pre-major economics courses or of any preparation course more than once, including equivalent courses taken elsewhere, results in automatic denial of admission to the major.

For students admitted to UCLA prior to fall 2023, repetition of more than one preparation course or of any preparation course more than once, including equivalent courses taken elsewhere, results in automatic denial of admission to the major.

#### The Major

Each upper-division major course must be taken for a letter grade. Transfer credit for any of the major courses is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major. Laboratory courses are required for all upper-division economics courses when they are offered and listed as mandatory co-requisite.

To graduate, students must have a minimum 2.0 grade-point average in their upper-division major courses, with at least a C- in each course. (Economics 101 applies on the preparation for the major, therefore requiring a minimum grade of C.)

### Honors Program

The departmental honors program is open to majors who have a cumulative grade-point average of at least 3.5 in the major and in all courses taken at UCLA prior to application.

To qualify for departmental honors at graduation, students must (1) select at least seven of the required upper-division economics courses from the approved list designated for departmental honors, (2) complete a two-term senior thesis acceptable to the departmental honors committee in Economics 198A and 198B, and (3) complete the major requirements with at least a 3.5 grade-point average in the economics courses. Highest honors are awarded at the discretion of the departmental honors committee based on grade-point average and quality of the senior thesis.

Economics 198A and 198B, the courses required for thesis preparation, may be counted as upper-division courses toward the field in which the thesis is written (for purposes of satisfying the requirements for the major). More information and application forms are available from an undergraduate counselor in 2263 Bunche Hall.

## Mathematics/Economics BS

See the [Mathematics/Economics](#) interdepartmental program section for a description of the major.

## Graduate Majors

### Economics MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Quantitative Economics

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Economics

### Lower-Division Courses

**1. Principles of Economics. (4)** Lecture, three hours; discussion, one hour. Not open to students with credit for former course 100. Introduction to principles of economic analysis, economic institutions, and issues of economic policy. Emphasis on allocation of resources and distribution of income through price system. P/NP or letter grading.

**2. Principles of Economics. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 1. Not open to students with credit for former course 100. Introduction to principles of economic analysis, economic institutions, and issues of economic policy. Emphasis on aggregative economics, including national income, monetary and fiscal policy, and international trade. P/NP or letter grading.

**3A. Introduction to Investments. (2)** Lecture, two hours. Broad introduction to investments. No previous financial, economic, or math background needed. Students learn organizing framework with which to understand investing landscape with highlight on key concepts and functionality related to business and personal investments. Topics include why financial markets exist and how they work, efficient market hypothesis, risk versus reward, investment styles, valuation techniques, simple quantitative analysis, power of compound interest, financial crises, and role private equity, venture capital, innovation and start-ups, and personal financial advisers. Serves as excellent introduction to career paths in finance and for those who want to increase their financial literacy. P/NP grading.

**3B. Introduction to Investments. (2)** Lecture, two hours. Requisite: course 3A. Broad introduction to investments. No previous financial, economic, or math background needed. Students learn organizing framework with which to understand investing landscape with highlight on key concepts and functionality related to business and personal investments. Topics include exchange rates, central banks, financial statements, value creation, interpreting financial ratios,

power of compound interest and understanding present value, diversification, capital asset pricing model, Sharpe ratio, and understanding asset's beta, hedge funds. Serves as excellent introduction to career paths in finance and for those who want to increase their financial literacy. P/NP grading.

**4. Introduction to Investments. (4)** Lecture, two hours. Broad introduction to investments. No previous financial, economic, or math background needed. Students learn organizing framework with which to understand investing landscape with highlight on key concepts and functionality related to business and personal investments. Topics include why financial markets exist and how they work, efficient market hypothesis, risk versus reward, investment styles, valuation techniques, simple quantitative analysis, power of compound interest, financial crises, and role private equity, venture capital, innovation and start-ups, personal financial advisers, exchange rates, central banks, financial statements, value creation, interpreting financial ratios, understanding present value, diversification, capital asset pricing model, Sharpe ratio, and understanding asset's beta, hedge funds. Serves as excellent introduction to career paths in finance and for those who want to increase their financial literacy. P/NP or letter grading.

**5. Economics for everyone. (5)** Lecture, three hours; discussion, one hour. Introduction to models and tools used by economists in practical real-world context. Study of important topical issues such as inequality, health care, and environmental policies. Students learn about available data sources and become better equipped to understand current events. May not be used to fulfill entrance requirements for any Economics Department major. P/NP or letter grading.

**10P. Economics Toolkit: Introduction to Python for Economists. (4)** Lecture, three hours. Python is commonly used programming language for data science. It is powerful and easy to learn tool that can be applied to make simple histograms or fit complicated machine learning models. Introduction to using Python for basic data exploration, analysis, and visualization. Emphasis on applications with economic data and econometric analysis. P/NP grading.

**10R. Economics Toolkit: Introduction to R for Economists. (4)** Lecture, three hours. Hands-on introduction to data analysis in economics using R. Covers essential mathematical tools and introduces mechanics of R. No prior knowledge of R, computer programming, statistics, or economics is required. P/NP grading.

**11. Microeconomic Theory. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 1, 2, Mathematics 31A, 31B, with grades of C or better. Laws of demand, supply, returns, and costs; price and output determination in different market situations. P/NP or letter grading.

**12. Introduction to Personal Finance. (4)** Lecture, three hours; discussion, one hour. Introduction to personal finance. No previous financial, economic, or mathematics background required. Open to nonmajors. Covers wide array of topics at introductory level that are of interest to students on practical level and more broadly for students seeking to deepen their understanding of key features of financial system, financial institutions, and various aspects of personal finance encountered by typical household over their life cycle. Topics covered include interest rates, time value of money, types of loans most relevant to typical household, credit and debit cards, savings and investment, stocks and bonds, risk and diversification, personal income taxes, varieties of insurance, retirement and savings plans, macroeconomic concepts, social security, Medicare, and aspects of behavioral economics. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**41. Probability and Statistics for Economists. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: Mathematics 31A, 31B, with grades of C or better. Not open to students with credit for former Statistics 11. Introduction to theory and practice of math-



ematical statistics with emphasis on its use in economics. Introduction of basic statistical concepts such as random variables, probability distributions, estimation, confidence intervals, and hypothesis testing. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Economic Toolkit. (4)** Lecture, three hours. Coverage of essential mathematical and programming skills needed for study of Economics. Review of calculus (first derivatives, partial derivatives, elementary integral calculus), Excel (handling data, using simple arithmetical, mathematical, and financial functions, use of Solver), and extended introduction to statistical language R and/or Stata. Consult instructor for specific software. Offered in summer only. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Microeconomic Theory. (4)** Lecture, three hours; discussion, one hour. Requisite: course 11. Theory of factor pricing and income distribution, general equilibrium, implications of pricing process for optimum allocation of resources, game theory, and interest and capital. P/NP or letter grading.

**102. Macroeconomic Theory. (4)** Lecture, three hours; discussion, one hour. Requisite: course 101. Theory of income, employment, and price level. Analysis of secular growth and business fluctuations; introduction to monetary and fiscal policy. P/NP or letter grading.

**103. Introduction to Econometrics. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 11, and 41 or Mathematics 170A and 170B or 170E and 170S or Statistics 100A and 100B. Enforced corequisite: 103L. Introduction to theory and practice of univariate regression analysis with emphasis on its use in economics. Introduction to method of least squares, Gauss-Markov theorem, confidence intervals and hypothesis tests in univariate regression context, and standard errors in case of heteroscedasticity and serial correlation. Emphasis on applications with real data and computer software (R programming language) to implement discussed methods. P/NP or letter grading.

**103L. Econometrics Laboratory. (1)** Lecture, one hour; laboratory, one hour. Enforced requisites: courses 11, and 41 or Mathematics 170A and 170B or 170E and 170S or Statistics 100A and 100B. Enforced corequisite: 103. Econometric analysis of case-based studies. Hands-on data collection and problem solving. Use of econometric software. P/NP or letter grading.

**104. Data Science for Economists. (4)** Lecture, three hours; laboratory, one hour. Enforced requisites: courses 11, 103. Enforced corequisite: course 104L. In-depth discussion of multivariate regression. Introduction to estimation of multivariate regression, and confidence intervals and hypothesis tests in context of multivariate regression. Discussion of instrumental variables and binary choice models. Emphasis on hands-on experience on data analytics and real data applications. P/NP or letter grading.

**104L. Data Science for Economists Laboratory. (1)** Lecture, one hour; laboratory, one hour. Enforced requisites: courses 11, 103. Enforced corequisite: course 104. Econometric analysis of case-based studies. Hands-on data collection and problem solving. Use of econometric software. P/NP or letter grading.

**106A. Economics in Practice. (4)** Seminar, three hours. Enforced requisites: courses 11, 101, 102. Enforced corequisite: course 106AL. Students, in groups of four, address three small problems and one large and more complex problem. Discussion of student-proposed solutions to problems in their groups, with small-group discussions to student presentations of results in class. Detailed coaching and feedback by MBA students on student analysis and presentations. Final written and oral presentations required. P/NP or letter grading.

**106AL. Economics in Practice Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 101, 102. Enforced corequisite: course 106A. Case-based analysis requiring students to apply material from course 106A to real-world problems regarding issues such as economic theory and empirical methods. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**106D. Designed Markets. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 101. Enforced corequisite: course 106DL. Discussion of markets and other institutions that were purposefully designed, mostly by economists. Choices designers face when designing such markets, Markets and their context and corresponding economic models. Topics include matching between medical residents and hospitals, matching between high school students and New York and Boston high schools, kidney transplants, course allocation in business schools, eBay auctions, and prediction markets. Examination of how to optimize one's actions and outcomes in such markets. P/NP or letter grading.

**106DL. Designed Markets Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 101. Enforced corequisite: course 106D. Case-based analysis requiring students to apply material from course 106D to real-world problems regarding topics such as matching between medical residents and hospitals, matching between high school students and New York and Boston high schools, kidney transplants, course allocation in business schools, eBay auctions, and prediction markets. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**106E. Economics of Entrepreneurship. (4)** Lecture, three hours. Requisite: course 101. Enforced corequisite: course 106EL. Enrollment priority to Business Economics majors. Application of economic theory to practice of managing new businesses—combining elements of strategy, marketing, and entrepreneurial finance courses. Examination of both strategic decisions of entrepreneurs (pricing, advertising, deterring entry) and more practical issues (funding, business plans, patents). Letter grading.

**106EL. Economics of Entrepreneurship Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 101. Enforced corequisite: course 106E. Case-based analysis requiring students to apply material from course 106E to real-world problems regarding topics involving combining elements of strategy, marketing, and entrepreneurial finance courses. Examination of both strategic decisions of entrepreneurs (pricing, advertising, deterring entry) and more practical issues (funding, business plans, patents). Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**106F. Finance. (4)** Lecture, three hours. Requisite: course 102. Enforced corequisite: course 106FB. Not open for credit to students with credit for Management 130A. Only one course from Economics 106F and Management 130A may be applied toward Economics and Business Economics majors. Enrollment priority to Business Economics majors. Introduction to principles of asset valuation and role of financial markets in market economy. Basic topics include time value of

money, discounted cash flow analysis, CAPM model, and applications to public policy. P/NP or letter grading.

**106FB. Finance Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 102. Enforced corequisite: course 106F. Case-based analysis requiring students to apply theory from course 106F to real-world problems regarding topics such as discounted cash flow analysis, CAPM model, applications to public policy, and more. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**106G. Introduction to Game Theory. (4)** Lecture, three hours; discussion, one to two hours (when scheduled). Requisite: course 101. Enforced corequisite: course 106GL. Enrollment priority to Business Economics majors. Introduction to basic ideas of game theory and strategic thinking. Discussion of ideas such as dominance, backward induction, Nash equilibrium, commitment, credibility, asymmetric information, and signaling, with application to examples from economics, politics, business, and other real-life situations. Letter grading.

**106GL. Introduction to Game Theory Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 101. Enforced corequisite: course 106G. Case-based analysis requiring students to apply material from course 106G to real-world problems involving game theory and strategic thinking in economics, politics, business, and other real-life situations. Hands-on data collection and problem solving and presentation of student analyses in writing with possible oral presentations. P/NP or letter grading.

**106I. Organization of Firms. (4)** Lecture, three hours. Enforced requisites: courses 11, 101. Enforced corequisite: course 106IL. Enrollment priority to Business Economics majors. Role of firms in traditional economic theory and modern developments in theory of firms. Topics include relationship between employer and employee, principal-agent models and moral hazard, formal versus relational contracts, successful firms as coherent systems of mutually supporting parts, property rights and asset ownership, boundaries of firms, employment versus independent contracting, internal organization of firms, role and levels of firm hierarchy. P/NP or letter grading.

**106IL. Organization of Firms Laboratory. (1)** Lecture, one hour; laboratory, one hour. Enforced requisites: courses 11, 101. Enforced corequisite: course 106I. Case-based analysis requiring students to apply material from course 106I to real-world problems. Hands-on data collection and problem solving and presentation of student analyses in writing and with oral presentations. P/NP or letter grading.

**106M. Financial Markets and Financial Institutions. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 101, 102. Enforced corequisite: course 106ML. Application of analytical tools of economics and finance to real-world problems in financial markets to link models students have learned in prior courses to patterns observed in financial markets and to understand when it is that further theoretical refinements are required to better account for certain observed patterns. Development of understanding of potential effects of monetary and regulatory policies on financial markets. Topics include bond market, stock market, foreign exchange market, financial crises, and financial regulation. Analysis and discussion of lessons of subprime crisis and European sovereign debt crisis. P/NP or letter grading.

**106ML. Financial Markets and Financial Institutions Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 101, 102. Enforced corequisite: course 106M. Case-based analysis requiring students to apply material from course 106M to real-world problems involving financial markets and financial institutions. Issues include potential effects of monetary and regulatory policies on financial markets. Topics include bond market, stock market, foreign exchange market, financial crises, and financial regulation. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**106P. Pricing and Strategy. (4)** Lecture, three hours. Requisite: course 101. Enforced corequisite: course 106PL. Enrollment priority to Business Economics majors. Advanced pricing topics typically include linear programming and shadow pricing, peak load pricing, two-part pricing, strategic pricing, and auctions and bidding. Letter grading.

**106PL. Pricing and Strategy Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 101. Enforced corequisite: course 106P. Case-based analysis requiring students to apply material from course 106P to real-world problems involving linear programming and shadow pricing, peak load pricing, two-part pricing, strategic pricing, and auctions and bidding. Hands-on data collection and problem solving and presentation of student analyses in writing. P/NP or letter grading.

**106S. Competitive Strategy. (4)** Lecture, three hours. Enforced requisites: courses 11, 101. Enforced corequisite: course 106SL. Examination of competitive strategy and competitive advantage using game theoretic models and case studies. Topics include economics of scale, network effects, switching costs, and platform markets. Written final project and presentation required. P/NP or letter grading.

**106SL. Competitive Strategy. (1)** Lecture, one hour; laboratory, one hour. Enforced requisites: courses 11, 101. Enforced corequisite: course 106S. Case-based analysis requiring students to apply material from course 106S. Hands-on data collection and problem solving and presentation of student analyses in writing and with oral presentations. P/NP or letter grading.

**106T. Economics of Technology and E-Commerce. (4)** Lecture, three hours. Requisites: courses 11, 101. Enforced corequisite: course 106TL. Use of rigorous economic tools to analyze world of technology and e-commerce. Examination of economic theory, empirical analysis, and case studies to study variety of new markets. Topics include bidding in online auctions, two-sided markets, matching markets, and reputation mechanisms. Written case on one particular firm and presentation required. P/NP or letter grading.

**106TL. Economics of Technology and E-Commerce Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 101. Enforced corequisite: course 106T. Case-based analysis requiring students to apply theory from course 106T to real-world problems regarding issues such as bidding in online auctions, two-sided markets, matching markets, reputation mechanisms, and more. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**106V. Investments. (4)** Lecture, three hours. Requisite: course 102. Recommended: course 106F. Enforced corequisite: course 106VL. Enrollment priority to Business Economics majors. Introduction to principles investment and portfolio theory. Topics include optimal portfolio construction, fixed income analysis, option pricing theory, and active portfolio management. P/NP or letter grading.

**106VL. Investments Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 102. Recommended: course 106F. Enforced corequisite: course 106V. Case-based analysis requiring students to apply theory from course 106V to real-world problems regarding issues such as portfolio management, option pricing, and other investment topics. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**107. History of Economic Theory. (4)** Lecture, three hours. Enforced requisites: courses 11, 101, 102. Survey of economic analysis from Grecian antiquity to early 20th century, concentrating on 18th and 19th centuries; special attention to selected writers, including Aristotle, mercantilists, Physiocrats, Hume, Smith, Malthus, Ricardo, Marx, marginalists, and Marshall. P/NP or letter grading.

**111. Theories of Development. (4)** Lecture, three hours. Requisites: courses 11, 101, 103. Corequisite: course 111L. Application of theoretical and empirical tools from microeconomics to provide insights into problems confronting low-income countries today and to

evaluate policies that are likely to be effective in improving well-being of poorest on globe. P/NP or letter grading.

**111L. Theories of Development Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 101, 103. Corequisite: course 111. Case-based analysis requiring students to apply material from course 111 to real-world problems involving development. Topics and analysis include measures of development, sources of economic growth and development, impediments to development, and policy prescriptions. P/NP or letter grading.

**112. Policies for Economic Development. (4)** Lecture, three hours. Requisite: course 102 or 111. Suggested strategies for economic development: inflation, balanced growth, industry versus agriculture, import substitution, export-oriented expansion, foreign aid, and others. Selected case studies. P/NP or letter grading.

**M112A. International Development. (4)** (Same as Public Policy CM171.) Lecture, three hours. Requisite: course 102 or 111. Why are some countries rich, while other countries are poor? What can policymakers do to reduce poverty? Discussion of current research on these questions. Study of both methodologies used to answer questions in development economics, like natural experiments and randomized control trials, as well as relationship between development and institutions, education, growth, culture, and gender. Reading intensive, seminar-style course. Students are expected to read academic articles in economics and actively participate in discussions. Students also learn how to use data to evaluate policies. P/NP or letter grading.

**113. Globalization and Gender. (4)** Lecture, three hours. Requisite: course 11. Examination of gender dimensions of economic development and globalization from perspective of feminist economics. This perspective implies foregrounding labor, broadly defined to include paid and unpaid work; examining gender differences in work; access to resources; and well-being outcomes; and how these are affected by macroeconomic policies and how gender inequalities are relevant for societal well-being. Since early 1980s economic globalization has been achieved on basis of common set of macroeconomic policies pursued in industrial and developing countries alike. These policies frame both gender-differentiated impacts of policy and initiatives that are implemented to reduce inequalities between men and women. Examination of impact of these policies on gender inequalities in developing countries. P/NP or letter grading.

**121. International Trade Theory. (4)** Lecture, three hours; discussion, one hour. Requisite: course 101. Corequisite: course 121L. Not open to students with credit for former course 120. Theory of international trade: bases, direction, terms, volume, and gains of trade. Effects of tariffs, quantitative restrictions, and international integration. Effects of free and restricted trade on economic welfare and political stability. P/NP or letter grading.

**121L. International Trade Theory Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 101. Corequisite: course 121. Case-based analysis requiring students to apply material from course 121 to real-world problems involving international trade. Topics and analysis include theory of international trade: bases, direction, terms, volume, and gains of trade; effects of tariffs, quantitative restrictions, and international integration; effects of free and restricted trade on economic welfare and political stability. P/NP or letter grading.

**122. International Finance. (4)** Lecture, three hours; discussion, one hour. Requisite: course 102. Enforced corequisite: course 122L. Not open to students with credit for former course 120. Emphasis on interpretation of balance of payments and adjustment to national and international equilibria through changes in price levels, exchange rates, and national income. Other topics include making international payments, determination of exchange rates under various monetary standards, capital movements, exchange controls, and international monetary organization. P/NP or letter grading.

**122L. International Finance Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 102. Enforced corequisite: course 122. Case-based analysis requiring students to apply material from course 122 to real-world problems involving international finance. Topics and analysis include balance of payments, exchange rates under various monetary arrangements, capital flows, exchange controls, and international monetary organization. Hands-on data collection and problem solving and presentation of student analyses in writing. P/NP or letter grading.

**123. Forecasting Exchange Rates and Constructing Currency Portfolios. (4)** (Formerly numbered M123.) Lecture, three hours; discussion, one hour. Requisites: courses 41, 102, 103, 103L, or consent of instructor. Enforced corequisite: course 123L. Study of main theoretical models of exchange rates and how to design computer codes to make real-time exchange rate forecasts by applying such models to real-world data. Different statistical tests to evaluate accuracy of forecasts and to assess risk-reward trade-offs of currency portfolios. Students gain applied research and presentation skills. Discussion of books and newspaper articles about financial markets and impact of economic news on exchange rates. Students expected to be familiar with use of spreadsheets, such as Excel. Coding basics is highly recommended. P/NP or letter grading.

**123L. Forecasting Exchange Rates and Constructing Currency Portfolios Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 41, 102, 103, 103L, or consent of instructor. Enforced corequisite: course 123. Hands-on approach in which students write computer codes associated with concepts learned in Economics 123. Students apply these codes to real-world data in order to generate exchange rate forecasts and evaluate prediction accuracy of their forecasting models. Students use these forecasts to construct short-long portfolios of currencies and assess reward-risk trade-offs of such portfolios. To generate and evaluate forecasts, students use Tradestation software, which can be access in Social Sciences Computing laboratories. P/NP or letter grading.

**C126A-C126B-C126C. Seminars: International Economics. (4-4-4)** Seminar, three hours. Requisites: courses 11, 101, 102. Limited to seniors. Overview of most current developments in international economics for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C285A-C285B-C285C. P/NP or letter grading.

**130. Public Economics. (4)** Lecture, three hours. Requisites: courses 11, 101, 103. Enforced corequisite: course 130L. Role of government in market economy. Alternative justifications for government intervention. Principles and effects of spending programs (especially social insurance and health), taxation, deficit financing, and federal credit programs. Taxation in open economy. Properties of public choice mechanisms. P/NP or letter grading.

**130L. Public Economics Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 101. Enforced corequisite: course 130. Case-based analysis requiring students to apply theory from course 130 to real-world problems regarding government spending programs, taxation, deficit financing, and federal credit programs. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**131. Economics of Health and Healthcare. (4)** Lecture, three hours. Requisites: courses 11, 101, 103. Enforced corequisite: course 131L. Economic analysis of health and healthcare. Presentation of several detailed economic models, including models of addiction, demand for healthcare, demand for insurance, nonprofit behavior, and other models. Evaluation of quantitative information from course readings and development of better understanding of econometric concepts and results. P/NP or letter grading.

**131L. Economics of Health and Healthcare Laboratory. (1)** Lecture, one hour; laboratory, one hour. Enforced requisites: courses 11, 101, 103. Enforced corequisite: course 131. Case-based analysis requiring students to apply theory from course 131 to real-world problems regarding economics of health and healthcare. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**132. Topics in Taxation and Social Insurance. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 101. In-depth examination of selected topics related to current policy debates. Topics vary from year to year but typically emphasize tax policy or social insurance. Topics may include optimal taxation; tax inefficiencies and their implications for labor supply, savings, and investment; income redistribution and personal income tax; corporate taxation and implications for firms' investment and financing decisions; Social Security and SSDI reform; and welfare programs. P/NP or letter grading.

**133. Intergenerational Poverty in America. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 101, 103. Enforced corequisite: course 133L. Examination of how poverty influences child development and, ultimately, their income and well-being in adulthood. Overview of poverty and intergenerational mobility in America, looking at historical trends and placing U.S. in international context. To understand why poverty is persistent across generations in U.S., study of economic model of skill formation in childhood. Consideration of existing research exploring how number of factors explain intergenerational persistence of poverty, including parental time, pollution, infant and child health, justice system, neighborhoods, stress, and preschool/education systems. Discussion of evidence on whether various public policies can improve mobility. P/NP or letter grading.

**133L. Intergenerational Poverty in America Laboratory. (1)** Lecture, one hour; laboratory, one hour. Enforced requisites: courses 11, 101, 103. Enforced corequisite: course 133. Case-based analysis requiring students to apply theory and analysis from course 133 to real-world problems regarding intergenerational poverty in America. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**134. Environmental Economics. (4)** Lecture, three hours. Requisites: course 41 or Statistics 12 or 13, and course 101. Introduction to major ideas in natural resources and environmental economics, with emphasis on designing incentives to protect environment. Highlights important role of using empirical data to test hypotheses about pollution's causes and consequences. P/NP or letter grading.

**M135. Economic Models of Public Choice. (4)** (Same as Political Science M105.) Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: any lower-division political science course. Enforced requisite: course 11. Designed for juniors/seniors. Analysis of methods and consequences of arriving at collective decisions through political mechanisms. Topics include free-rider problem, voting and majority choice, demand revelation, and political bargaining. P/NP or letter grading.

**137. Introduction to Urban and Regional Economics. (4)** Lecture, three hours. Requisite: course 11. Survey of broad range of policy and theoretical issues that are raised when economic analysis is applied in urban setting. Topics include urbanization and urban growth, housing markets, location decisions of households and firms, transportation, urban labor markets, and local public sector. P/NP or letter grading.

**140. Computational Methods for Economists. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 101, 102, 103, Mathematics 31A, 31B, 32A, 33A, 33B. Enforced corequisite: course 140L. Introduction to variety of computational methods used in economics. Use of Python and numerical techniques to solve models in macroeconomics and finance, microeconomics, and econometrics. Students should be familiar with scientific programming language such as R or MATLAB but are not required to know Python. P/NP or letter grading.

**140L. Computational Methods for Economists Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 101, 102, 103, Mathematics 31A, 31B, 32A, 33A, 33B. Enforced corequisite: course 140. Problem-solving and project-based laboratory requiring students to apply computational methods from course 140 to solve models in macroeconomics and finance, microeconomics, and econometrics. Students should be familiar with scientific programming language such as R or MATLAB but are not required to know Python. P/NP or letter grading.

**141. Topics in Microeconomics: Mathematical Finance. (5)** Lecture, three hours; computer laboratory, one hour. Requisites: course 11, Mathematics 32A, either Statistics 100A or Mathematics 170A. Economics of financial markets, competitive equilibrium with time and uncertainty, one period security market model, market completeness. P/NP or letter grading.

**142. Topics in Microeconomics: Probabilistic Microeconomics. (4)** Lecture, three hours. Requisite: course 101. Combination of basic probability introduced in Statistics 11 with microeconomic models presented in courses 11 and 101 in order to explain phenomena such as insurance, job search, and stock market behavior. Optimal production and consumption under uncertainty. Review of probability and introduction to alternative measures of risk and risk aversion. P/NP or letter grading.

**143. Advanced Econometrics. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Requisite: course 103. Not open for credit to students with credit for former course 147A or 147B. Heteroskedasticity, limited dependent variable, panel data, time-series. P/NP or letter grading.

**144. Economic Forecasting. (4)** Lecture, three hours. Preparation: familiarity with data analysis software (e.g., R, Excel, MATLAB, Stata) and/or programming experience. Enforced requisites: courses 101, 103/103L. Survey of theory and application of time-series methods to forecasting in economics, business, and government. Topics include modeling and forecasting trend, seasonality, and cycles. Discussion of stochastic trends, volatility measure, and evaluation of forecasting techniques. Hands-on approach to real-world data analysis methods widely used by economists and other professionals. P/NP or letter grading.

**145. Topics in Microeconomics: Mathematical Economics. (4)** Lecture, three hours. Requisite: course 101. Possible topics include game theory; competitive equilibrium analysis; examination of market failure and role for market intervention. P/NP or letter grading.

**C146A-C146B-C146C. Seminars: Asset Pricing. (4-4-4)** Seminar, three hours. Requisites: courses 11, 101, 102. Limited to seniors. Overview of most current developments in asset pricing theory for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C296A-C296B-C296C. P/NP or letter grading.

**147. Computational Finance and Data Analysis for Financial Engineering. (4)** Lecture, three hours. Requisites: courses 41, 101, 103. Enforced corequisite: course 147L. Introduction to econometric modeling in empirical/computational finance. Focus on study of econometric models and methods to understand financial market dynamics. Review of essential concepts in probability/statistics and time-series econometrics. Investigation of some popular financial econometric models and estimation methods. Review of selected topics in finance, and how to apply econometric methods to analyze and understand empirical properties of financial market data. Analytical problem sets and data exercises to enhance theoretical understandings and practical skills. P/NP or letter grading.

**147L. Computational Finance and Data Analysis for Financial Engineering Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 41, 101, 103. Enforced corequisite: course 147. Project-based analysis requiring students to apply econometric modeling techniques from course 147 to real-world financial data. P/NP or letter grading.

**148. Behavioral Economics. (4)** Lecture, three hours. Enforced requisite: course 101. Behavioral economics is emerging subfield of economics that incorporates insights from psychology and other social sciences into economics to improve realism of economic models by incorporating realistic features such as aversion for losses, problems with self control, or concerns for others and thereby improve economic analyses. Review of some standard assumptions made in economics and examination of evidence on how human behavior systematically departs from these assumptions. Investigation of attempts to explore alternative models of human decision making and assessment to what extent these alternative models help improve economic analyses. P/NP or letter grading.

**149. Time-Series Econometrics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 41, 103, Mathematics 31A, 31B. Enforced corequisite: course 149L. Time-series econometrics studies dynamic behaviors of economic variables using tools from probability theory and statistics. It plays important role in data analysis in macroeconomics and finance. Introduction to methods of time-series analysis in econometrics. Topics include weak dependence, autoregressive-moving-average (ARMA) processes, linear processes, economic forecasting, long-run variance and heteroskedasticity and autocorrelation consistent (HAC) estimation, unit root theory, estimation and inference of time-varying volatility models. Provides useful preparation to students who plan to take empirically oriented macroeconomics and finance courses, and solid understanding of tools required to analyze and model economic time series data and financial asset prices/returns. Emphasis throughout on link between statistical models and implementation. P/NP or letter grading.

**149L. Time-Series Econometrics Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 41, 103, Mathematics 31A, 31B. Enforced corequisite: course 149. Problem-solving and project-based analysis requiring students to apply time-series analysis from course 149 to real-world time-series data. Applications involve weak dependence, autoregressive-moving-average (ARMA) processes, linear processes, economic forecasting, long-run variance and heteroskedasticity and autocorrelation consistent (HAC) estimation, unit root theory, estimation and inference of time-varying volatility models. Provides useful preparation to students who plan to take empirically oriented macroeconomics and finance courses, and solid understanding of tools required to analyze and model economic time series data and financial asset prices/returns. Emphasis throughout on link between statistical models and implementation. P/NP or letter grading.

**150. Labor Economics. (4)** Lecture, three hours. Requisites: courses 11, 101, 103. Enforced corequisite: course 150L. Supply and demand for labor. Analysis of government, union, and other constraints on competitive system of wage determination. Wage level and structure. Wages and human capital theory. P/NP or letter grading.

**150L. Labor Economics Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 101, 103. Enforced corequisite: course 150. Case-based analysis requiring students to apply theoretical tools from course 150 to real-world problems involving labor economics. Topics include labor supply decisions, household production decisions, life-cycle aspects of labor supply, short-run and long-run labor demand, monopsony in labor market, quasi-fixed labor costs and labor demand, human capital, and other extended topics. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**151. Topics in Labor Economics. (4)** Lecture, three hours. Requisites: courses 101, 150. Selected topics in labor theory; income distribution; business cycles and unemployment; investments in human capital and life cycles; migration; human fertility; marriage and divorce, etc. P/NP or letter grading.

**152. Women, Men, and Economy. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 101, 103. Corequisite: course 152L. Introduction to using tools of economics to understand gender-

related issues. Review of economic models of household, fertility, and labor supply. Discussion of how they help interpret long-term trends in marriage and divorce, fertility, and women's labor-force participation. Review of economic models of wage determination, with focus on explanations of and policy remedies for earnings differentials between women and men. Examination of new research in economics on gender-related topics. P/NP or letter grading.

**152L. Women, Men, and Economy Laboratory. (1)** Lecture, three hours; laboratory, one hour. Requisites: courses 11, 101, 103. Corequisite: course 152. Empirical-based analysis requiring students to apply theoretical and empirical tools from course 152 to real-world gender-related issues, and to further discuss latest research in field. P/NP or letter grading.

**C156A-C156B-C156C. Seminars: Labor Economics. (4-4-4)** Seminar, three hours. Requisites: courses 11, 101, 102. Limited to seniors. Overview of most current developments in labor economics for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C266A-C266B-C266C. P/NP or letter grading.

**160. Money and Banking. (4)** Lecture, three hours. Requisite: course 102. Principles of money and banking in U.S.; legal and institutional framework; money supply process; instruments, effects, and practice of monetary policy. P/NP or letter grading.

**161. Monetary Theory. (4)** Lecture, three hours. Requisites: courses 101, 160. Nature of money and monetary exchange; level and term structure of interest rates; level and growth rate of money; transmission of monetary shocks; theory and practice of monetary policy. P/NP or letter grading.

**164. Advanced Topics in Macroeconomics: Theory of Economic Growth. (4)** Lecture, three hours. Requisite: course 102. Enforced corequisite: course 164L. Use of neoclassical growth model to address various issues, with emphasis on quantitative analysis. Development of economic theory and application to study of long-run growth, industrial revolution, and Great Depression. P/NP or letter grading.

**164L. Advanced Topics in Macroeconomics: Theory of Economic Growth Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 102. Enforced corequisite: course 164. Case-based analysis requiring students to apply theory from course 164 to real-world macroeconomic growth problems. Hands-on data collection and problem solving and presentation of student analyses in writing. P/NP or letter grading.

**165. History of Capitalism in American Economy. (4)** Lecture, three hours. Enforced requisite: course 102. Enforced corequisite: course 165L. How capitalism—what economists call market economy with well-defined and protected civil rights and property rights—has contributed to America's economic growth. Quantitative course, with analysis of how different features of capitalist economies impact economic growth, investment, consumption, and technical change, using computer simulations based on prominent historical examples. P/NP or letter grading.

**165L. History of Capitalism in American Economy Laboratory. (1)** Lecture, one hour; laboratory, one hour. Enforced requisite: course 102. Enforced corequisite: course 165. Case-based analysis requiring students to apply theory and historical data from course 165 to simulate and analyze how variety of macroeconomic policies impact economic activity. Hands-on data collection and problem solving and presentation of student analyses in writing. P/NP or letter grading.

**C166A-C166B-C166C. Seminars: Monetary Economics/Macroeconomics. (4-4-4)** Seminar, three hours. Requisite: course 102. Limited to seniors. Overview of most current developments in monetary economics and macroeconomics for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new pa-

pers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C226A-C226B-C226C. P/NP or letter grading.

**167. Victims and Villains; Panics and Bubbles. (4)** Lecture, three hours. Requisites: course 101, Management 1A, 1B. Focus on phenomena of panics, bubbles, and manias in financial history. In-depth analysis and discussion of underlying causes, private and public policy responses, similarities, and contemporary issues in today's financial landscape. Focus on study of financial meltdown of 2008 with comprehensive treatment of financial and banking panics, with discussion of underlying housing and stock market bubbles. Also covers five other financial crises: panic of 1907, Great Depression, Japanese real estate and stock market bubbles of 1980s, American banking crises of 1980s, and Asian Contagion of late 1990s. Highlights various components of financial crises with case and discussion on each component. Students read case studies relating to each, and more general related readings including speeches, papers, and articles. Letter grading.

**168. Introduction to Principles of Value Investing. (4)** Lecture, three hours. Requisites: course 101, Management 1A, 1B. Introduction to fundamental principles of value investing. Discussion of fundamental themes relating to value investing, and demonstration of how these ideas compare favorably with other investment approaches. Topics include differences between investment and speculation, how to search for inefficiencies in marketplace, and importance of incorporating margin of safety in any analysis. Introduction of standard accounting and valuation tools, including liquidation value. Prepares students to analyze and interpret financial statements. Designed for students considering careers in security analysis, investment banking, consulting, and corporate finance. Letter grading.

**169. Applied Value Investing. (4)** Lecture, three hours. Requisites: courses 101, 168, Management 1A, 1B. Enrollment by application only. Extends principles of introductory value investing class to more advanced and wider variety of applications. Makes use of multiple case studies to enhance comprehension with real-world examples and to highlight necessary valuation skills that students are expected to master. Also covers market dynamics that can create opportunities to find structurally mispriced securities such as rights offerings, spin-offs, restructurings, and liquidations. Designed for students considering careers in security analysis, investment banking, consulting, and corporate finance. Letter grading.

**170. Industrial Organization: Theory and Tactics. (4)** Lecture, three hours. Requisite: course 101. Enforced corequisite: course 170L. Not open for credit to students with credit for former course 170 or 171. Monopoly, collusion and competition, strategic firm behavior, nonprice competition with and without entry, pricing practices, antitrust. Comparison of economic and legal treatments of competitive process. Monopoly competition, and collusion as economic theory, as antitrust doctrine, and as fact. Source of monopoly. Predatory behavior. Misleading practices in theory and policy. General problem of relationship between private rights of action and competitive entry. P/NP or letter grading.

**170L. Industrial Organization: Theory and Tactics Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 101. Enforced corequisite: course 170. Case-based analysis requiring students to apply material from course 170 to real-world problems involving monopoly, collusion, strategic firm behavior, pricing practices, antitrust and other topics. Hands-on data collection and problem solving and presentation of student analyses both orally and in writing. P/NP or letter grading.

**171. Industrial Organization: Policy and Regulation. (4)** Lecture, three hours. Requisite: course 101. Enforced corequisite: course 171L. Recommended requisite: course 103. Preparation: calculus. Designed to give foundation in topics within field of industrial organization relating to regulation of monopoly power within economy and different way that that manifests

across firm conduct and industrial settings. Particular attention to topics in antitrust policy, with some exploration of intersection between economics and law. Topics include in-depth analysis of cartels and mergers, including abstract theory and specifics of analytical approaches deployed in enforcement by Department of Justice and Federal Trade Commission. P/NP or letter grading.

**171L. Industrial Organization: Policy and Regulation Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisite: course 101. Enforced corequisite: course 171. Recommended requisite: course 103. Preparation: calculus. Empirically-based analysis requiring students to provide empirical analysis to material covered in course 171, with emphasis on antitrust issues and policies. In particular, use of standard empirical toolkit to critically evaluate public policy and regulation with special emphasis on antitrust policy. P/NP or letter grading.

**173AX-173BX. Introduction to Social Entrepreneurship. (4-4)** (Formerly numbered 173A-173B.) Lecture, one hour; research group meeting, two hours. Course 173AX is requisite to 173BX. Full-scale immersion into world of social entrepreneurship. Introduction to basics of business planning for social enterprises. Students are assigned in teams to work with participating social enterprises in Los Angeles area to implement new revenue-generating business plan for social enterprises to which they are assigned. Teams receive support from MBA student volunteers as advisers on how to work effectively together and how to resolve issues that arise with staff of assigned social enterprise. Courses 173AX and 173BX must be taken in consecutive terms. In Progress (173AX) and P/NP or letter (173BX) grading.

**174. Economics of Sports. (4)** Lecture, three hours. Enforced requisites: courses 11, 41, 101. Recommended: courses 103/103L. Course in applied microeconomics that employs both theoretical and empirical tools to analyze wide range of topics related to sports industry. Topics include history of labor relations in professional sports, history and analysis of player salaries in professional sports, market for professional sports franchises and sports broadcast rights, league expansion and relocation decisions, understanding of role of economic impact studies (cost-benefit analysis) and public/private partnerships in facility financing, relationship between academics and athletics in collegiate sports, racial discrimination in sports, exploration of behavioral issues such as strategic effort, measuring return on investment from sport sponsorships, and calculation of economic damages in legal cases involving athletes. P/NP or letter grading.

**C176A-C176B-C176C. Seminars: Industrial Organization. (4-4-4)** Seminar, three hours. Requisites: courses 11, 101, 102. Limited to seniors. Overview of most current developments in industrial organization for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C276A-C276B-C276C. P/NP or letter grading.

**177. Field Projects in Investing. (4)** Seminar, three hours. Enforced requisites: courses 167, 168, 169. Enrollment by application only. Experiential learning tool and seminar course where students complete significant research on investment-related topic. Participating students are paired with asset management firm and engage regularly to complete research project. Designed to expose students to real-world practice of asset valuation, including applications of tools and inputs (including economics, accounting, and quantitative techniques) in asset valuation. Letter grading.

**181. Development of Economic Institutions in Western Europe. (4)** Lecture, three hours. Requisite: courses 11, 103. Corequisite: course 181L. Application of economic theory and quantitative reasoning to study economic history of Western Europe from 18th to 20th century. Topics include Malthusian theory, Industrial Revolution, demographic transition, formation



and persistence of institutions and organizations, World Wars, and development of Europe during 1950s and 1960s. P/NP or letter grading.

**181L. Development of Economic Institutions in Western Europe Laboratory. (1)** Lecture, three hours; laboratory, one hour. Requisite: courses 11, 103. Corequisite: course 181. Empirical analysis requiring application of material from corresponding lecture course to selected historical issues, such as Malthusian theory, Industrial Revolution, demographic transition, formation and persistence of institutions and organizations, World Wars, and development of Europe during 1950s and 1960s. Hands-on data collection and problem solving and presentation of student analyses in writing. P/NP or letter grading.

**182A. U.S. Economics History: From Colonial Times to the Civil War. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 41 (or equivalent). Enforced corequisite: course 182AL. Examination of the development of the U.S. economy up to and including the Civil War. Focus on using economic models and numbers to understand what drove the evolution of the economy, why structural changes occurred, and why there was persistence. While the past persists for a long time in the form of people and institutions, there are periods of dramatic change brought on by technological change and by war. Study of the past, with its very different institutions, to inform the present. For example, there was no U.S. currency until the Civil War. Each bank printed its own notes and each state had different banking regulations. Investigation of how the system worked, whether it was effective in allocating capital, and how stability depended on banking regulations. P/NP or letter grading.

**182AL. U.S. Economics History: From Colonial Times to the Civil War Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 41 (or equivalent). Enforced corequisite: course 182A. Empirical analysis requiring application of material from course 182A to the development of the U.S. Economy up to and including the Civil War. Focus on application of economic models and empirical analysis to understand what drove the evolution of the economy, why structural changes occurred, and why there was persistence. P/NP or letter grading.

**182B. U.S. Economics History: From the Civil War to World War I. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 41 (or equivalent). Enforced corequisite: course 182BL. Examination of the development of the U.S. economy from the Civil War to World War I. Focus on using economic models and numbers to understand what drove the evolution of the economy, why structural changes occurred, and why there was persistence. While the past persists for a long time in the form of people and institutions, there are periods of dramatic change brought on by technological change and by war. Study of the past, with its very different institutions, to inform the present. For example, the time period from the Civil War to World War I witnessed the rise of large corporations and complaints of monopoly power. There was anti-trust law. Investigation of degree to which collusion and monopoly was a problem, and whether anti-trust law solved the problem or if the regulators were captured. Consideration also that there was no Federal Reserve until December 1914, and examination of the problems created by not having a Federal Reserve. P/NP or letter grading.

**182BL. U.S. Economics History: From the Civil War to World War I Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 41 (or equivalent). Enforced corequisite: course 182B. Empirical analysis requiring application of material from course 182B to the development of the U.S. Economy from the Civil War to World War I. Focus on application of economic models and empirical analysis to understand what drove the evolution of the economy, why structural changes occurred, and why there was persistence. P/NP or letter grading.

**182C. U.S. Economics History: From World War I to 1980s. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 11, 41 (or equivalent). Enforced corequisite: course 182CL. Examination of the development of the U.S. economy from the World War I to

1980s. Focus on using economic models and numbers to understand what drove the evolution of the economy, why structural changes occurred, and why there was persistence. While the past persists for a long time in the form of people and institutions, there are periods of dramatic change brought on by technological change and by war. Study of the past, with its very different institutions, to inform the present. For example, during the 2007-2008 financial crisis, economists looked to the Great Depression, a topic on which then Federal Reserve chairman Ben Bernanke published. Economists also look to the past to understand the role of government deficits in inflation and in economic growth. P/NP or letter grading.

**182CL. U.S. Economics History: World War I to 1980s Laboratory. (1)** Lecture, one hour; laboratory, one hour. Requisites: courses 11, 41 (or equivalent). Enforced corequisite: course 182C. Empirical analysis requiring application of material from course 182C to the development of the U.S. Economy from World War I to 1980s. Focus on application of economic models and empirical analysis to understand what drove the evolution of the economy, why structural changes occurred, and why there was persistence. P/NP or letter grading.

**183. Development of Economic Institutions in U.S. (4)** Lecture, three hours. Requisites: courses 11, 103. Enforced corequisite: course 183L. Study of changing economic conditions in U.S. from Colonial times to early 20th century and effects of these changes on American society. P/NP or letter grading.

**183L. Development of Economic Institutions in U.S. Laboratory. (4)** Lecture, one hour; laboratory, one hour. Requisite: course 11. Enforced corequisite: course 183. Empirical analysis requiring students to apply material from course 183 to selected historical issues such as migration, slavery, industrialization, capital formation, Great Depression, human capital formation, and California development and relate them to current real-world issues. Hands-on data collection and problem solving and presentation of student analyses in writing. P/NP or letter grading.

**185. Career Development. (1)** Lecture, one hour. Enrollment priority to departmental majors. Designed to provide Business Economics majors with key knowledge and practical skills used in real world that complement traditional academics to maximize interview, communication, and presentation skills and strengthen résumé building. Coverage of career paths in business profession in various aspects to broaden students' knowledge of career opportunities. Review of current business environment, financial markets, economy, unemployment, banking crises, market updates, and all related business topics. P/NP grading.

**C186A-C186B-C186C. Seminars: Economic History. (4-4-4)** Seminar, three hours. Limited to seniors. Overview of most current developments in economic history for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C246A-C246B-C246C. P/NP or letter grading.

**187. Upper-Division Research Seminar: Applications of Economic Theory. (4)** Seminar, three hours. Requisites: courses 11, 101. Limited enrollment seminars in which students usually write research paper on topic selected in consultation with instructor. May be repeated for credit with topic change. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty

mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**M188XP. Practicum in Social Entrepreneurship. (4)** (Formerly numbered M188.) (Same as Community Engagement and Social Change M188XP) Seminar, three hours. Enrollment by consent of instructor. Offers students full-scale immersion into challenges of launching social enterprise. Students work in teams alongside staff of local nonprofit organizations in 10-week social enterprise accelerator program aimed at helping participating organizations secure financial and operational resources they need to implement social enterprise for which viable business plan has already been constructed. Students meet assigned organization, study its business plan, and work with instructors of course and staff of nonprofit organization to develop tailored plan of work for 10-week accelerator program. Students carry out work in conjunction with staff of organization under supervision of instructors and with assistance of experienced entrepreneur volunteer mentors. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Economics. (4)** Seminar, three hours. Enforced requisites: courses 101, 102, 103. Research seminars on selected topics in economics. Reading, discussion, and development of culminating project. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

**192. Undergraduate Practicum in Economics. (3)** Seminar, two hours. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students. Students assist in preparation of course materials and development of innovative programs with guidance of faculty members. P/NP or letter grading.

**195A-195B. Community or Corporate Internships in Economics I, II. (2-4)** Tutorial, to be arranged. Requisites: courses 11, 101. Limited to junior/senior Economics, Business Economics, Economics/International Area Studies, and Mathematics/Economics majors. Internship to be supervised by Economics Department. Further supervision to be provided by business or entity for which student is doing internship. Students meet on regular basis with instructor and provide periodic reports of their experience. May not be applied toward major requirements. Only 8 units from courses 195A and 195B may be applied toward undergraduate degree. Individual contract with supervising faculty member required. P/NP grading.

**195C. Community and Corporate Internships in Economics. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Requisites: courses 11, 101. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated by Economics Department. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. May not be applied

toward major requirements. May be repeated for credit with consent of department. Individual contract with supervising faculty member required. P/NP or letter grading.

**198A. Honors Research in Economics I. (4)** Tutorial, three hours. Prerequisites: courses 11, 101, 102. Limited to senior departmental honors program students. First term of two-term sequence in which students develop honors thesis or comprehensive research project under direct supervision of faculty member. Individual contract required. In Progress grading (credit to be given only on completion of course 198B).

**198B. Honors Research in Economics II. (4)** Tutorial, three hours. Prerequisite: course 198A. Limited to senior departmental honors program students. Second term of two-term sequence in which students complete honors thesis or comprehensive research project under direct supervision of faculty member. Individual contract required. Letter grading.

**199A. Directed Research in Economics. (4)** Tutorial, three hours. Prerequisites: courses 11, 101, 102. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated twice but may be applied only once toward major requirements. Individual contract required. P/NP or letter grading.

**199B. Directed Research in Economics/International Area Studies. (4)** Tutorial, three hours. Students prepare research papers under guidance of faculty mentor on economy of country or region of specialization. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

### Foundations of Economics

**200. Mathematical Methods in Economics. (4)** Lecture, three hours. Should be taken prior to enrollment in course 201A. Examination of mathematical methods used in graduate-level courses in microeconomics, macroeconomics, and quantitative methods. Topics include real analysis, linear algebra and matrices, calculus of many variables, static optimization, convex analysis, and dynamics and dynamic optimization. S/U grading.

**200B. Mathematical Methods in Economics II. (4)** Lecture, three hours; laboratory, two hours. Should be taken prior to or concurrent with course 201B. Linear algebra and its application to linear difference equations. Basic real analysis, normed vector space/Banach space, Hahn/Banach theorem, Schauder fixed point theorem, and theory of correspondences. S/U grading.

**201A. Microeconomics: Theory of Firm and Consumer. (4)** Lecture, three hours. Two input/two output model. Walrasian equilibrium and Pareto efficiency. Choice over time—consumer savings and firm investment decisions. Choice under uncertainty—state claims model, asset pricing. S/U or letter grading.

**201B. Microeconomics: Basic Concepts and Techniques of Noncooperative Game Theory and Information Economics. (4)** Lecture, three hours. Nash equilibrium and subgame perfection. Games with incomplete information. Models of strategic market behavior. Screening and signaling. Bargaining models. Theory of firm. S/U or letter grading.

**201C. Microeconomics: Game Theory with Asymmetric Information and Applications. (4)** Lecture, three hours. Perfect Bayesian equilibrium and refinements, mechanism design. Applied topics such as adverse selection, signaling, moral hazard, bidding, price discrimination, and public good provision. S/U or letter grading.

**202A. Macroeconomics: Dynamics and Growth Theory. (4)** Lecture, three hours. Essential techniques and concepts from dynamical mathematics and neoclassical growth theory. Linear and nonlinear dynamical systems. Dynamic programming and control theory. Stochastic dynamics. Determinacy of equilibrium. Descriptive, optimal, and overlapping generations models of accumulation. Stochastic growth theory. Increasing returns and applications to economic development. S/U or letter grading.

**202B. Macroeconomics: Business Cycles. (4)** Lecture, three hours. Survey of representative agent and complete market models of short-run fluctuations. Facts about fluctuations and long-term growth. Real business cycle theory. Calibrating and simulating dynamic models. Asset prices, money, and inflation. Taxation of factor incomes. Cyclical aspects of employment. S/U or letter grading.

**202C. Macroeconomics: Topics in Macroeconomics. (4)** Lecture, three hours. Heterogeneous-agent models of endogenous fluctuations and growth. General equilibrium techniques in macroeconomics. Overlapping fluctuations model with national debt. Fiscal policy. Externalities, indeterminacy, and growth. Expectations and business cycles. Money and monetary policy. Historical overview of mainstream macroeconomics. Wicksell and Keynes. Monetarist controversy. New classical and new Keynesian macroeconomics. S/U or letter grading.

**203A. Introduction to Econometrics I. (4)** Lecture, three hours; discussion, one hour. Probability and statistical tools for econometric models. Topics include random variables, distribution and density functions, transformations, identification, sampling, estimators, asymptotic properties. S/U or letter grading.

**203B. Introduction to Econometrics II. (4)** Lecture, three hours; discussion, one hour. Estimation and testing. Basic linear regression model, tests of hypotheses, generalized least squares, heteroskedasticity, multicollinearity, error-in-variables, and qualitative dependent variables. S/U or letter grading.

**203C. Introduction to Econometrics III. (4)** Lecture, three hours; discussion, one hour. Econometrics methods for time-series econometrics, including theory and applications. Topics include detrending techniques, unit root theory, cointegrated system approaches, autocorrelation robust inference, Wold and Beveridge and Nelson (BN) decompositions, model selection, nonlinear nonstationary models, spatial density asymptotics and semi-nonparametric time-series models. S/U or letter grading.

**M204A. Applications of Economic Theory: California Population Research Topical Seminar Series. (4)** (Same as Sociology M225A.) Seminar, three hours. Limited to California Center for Population Research (CCPR) affiliates. Examination of issues such as demography, health, aging, labor, and broad array of topics concerned with effects of economic, social, and political transformations on human behavior both in U.S. and abroad. S/U grading.

**204B. Applications of Economic Theory: California Population Research Topical Seminar Series. (4)** Seminar, three hours. Examination of issues such as demography, health, aging, labor, and broad array of topics concerned with effects of economic, social, and political transformations on human behavior both in U.S. and abroad. May be taken independently for credit. S/U grading.

**204C. Applications of Economic Theory: California Population Research Topical Seminar Series. (4)** Seminar, three hours. Examination of issues such as demography, health, aging, labor, and broad array of topics concerned with effects of economic, social, and political transformations on human behavior both in U.S. and abroad. May be taken independently for credit. S/U grading.

**204D-204K. Applications of Economic Theory. (4 each)** Lecture, three hours. S/U or letter grading.

**M204L. Seminar: Pharmaceutical Economics and Policy. (1)** (Same as Health Policy M204A.) Seminar, three hours every other week. Prerequisite: Health Policy M236. Limited to graduate public health and economics students. Various topics in economics of pharmaceutical industry, including rates of innovation, drug regulation, and economic impact of pharmaceuticals. In Progress grading (credit to be given only on completion of courses M204M and M204N).

**M204M. Seminar: Pharmaceutical Economics and Policy. (1)** (Same as Health Policy M204B.) Seminar, three hours every other week. Prerequisite: Health Policy M236. Limited to graduate public health and economics students. Various topics in economics of pharmaceutical industry, including rates of innovation,

drug regulation, and economic impact of pharmaceuticals. In Progress grading (credit to be given only on completion of course M204N).

**M204N. Seminar: Pharmaceutical Economics and Policy. (2)** (Same as Health Policy M204C.) Seminar, three hours every other week. Prerequisite: Health Policy M236. Limited to graduate public health and economics students. Various topics in economics of pharmaceutical industry, including rates of innovation, drug regulation, and economic impact of pharmaceuticals. Letter grading.

**204R. Applications of Economic Theory. (4)** Lecture, three hours. Preparation: completion of first-year microeconomics and graduate econometrics courses. In past decade economists have learned remarkable amount about how society works. Increased understanding has come about through application of distinctively economic methods of research—explicit mathematical models and eclectic statistical techniques—to topics such as healthcare, crime, education, and immigration. Taken together this work has led to increased understanding of inequality, how to measure it, how inequality has increased in U.S., how America differs from other rich countries and, most important, what causes inequality. Study of this work, with focus on two important influences on inequality—education and health—which are two areas in which knowledge is accumulating most rapidly. S/U grading.

**205. Economic Modeling. (4)** Lecture, three hours. Development of modeling skills by considering sequence of economic issues (e.g., peak load pricing, regulation, monopoly, capital asset pricing, Pareto efficiency). Emphasis on multivariate constrained optimization. S/U or letter grading.

**206. Law and Economics Workshop. (2 or 3)** Seminar, two hours. Prerequisite: course 201A or Management 405. Knowledge of empirical methods and basic calculus required. Interdisciplinary speakers series bringing together outside speakers with scholars and students from UCLA Law School and academic departments. Topics include contracts, torts, intellectual property, and business law. Students write graded reaction papers. May be repeated for credit. Concurrently scheduled with Law 648 and Management 294. S/U or letter grading.

**207. History of Economic Thought. (4)** Lecture, three hours. Topics from classical economics, including work of Smith, Ricardo, and Mill, and developments from 1870s, including contributions of major figures of marginalist revolution, socialist controversy, and history of welfare economics. S/U or letter grading.

**M208. Introduction to Demographic Methods. (4)** (Same as Biostatistics M208, Community Health Sciences M208, and Sociology M213A.) Lecture, four hours. Preparation: one introductory statistics course. Introduction to methods of demographic analysis. Topics include demographic rates, standardization, decomposition of differences, life tables, survival analysis, cohort analysis, birth interval analysis, models of population growth, stable populations, population projection, and demographic data sources. Letter grading.

**209A-209B-209C. PhD Research Seminar. (4-4-4)** Seminar, three hours. Designed to help PhD students transition from standard learning (attending lecture, taking examinations) into creating independent research. Students are supported in developing their dissertation and professional skills in all aspects of process of creating their own research, including writing and presentation. Covered topics include finding research ideas, writing introductions, building narratives, writing models, presenting empirical analysis, writing referee reports, responding to referees, presentation, elevator pitch, etc. For each topic, students study canonical examples and work on their own papers. Faculty provide feedback and build supportive environment in which students can learn and experiment. S/U grading.

### Economic Theory

**211A. Contract Theory. (4)** Lecture, three hours. Preparation: introductory probability. Enforced prerequisite: course 201C. Study of trading relationships between small number of agents. Coverage of many tools and techniques used in models of moral hazard,

adverse selection, and incomplete contracting, starting with static models of moral hazard and mechanism design and development of their dynamic counterparts. Consideration of environments where agents cannot use formal contracts, studying relational contracts and trading relationships with no contracts. Analysis of wide variety of applications from industrial organization, corporate finance, personnel economics, and public economics. S/U or letter grading.

**211B. Economics of Uncertainty, Information, and Games. (4)** Lecture, three hours. Preparation: introductory probability. Enforced requisite: course 201C. Theory of individual decision making under uncertainty, applied to topics such as asset pricing models, adverse selection, moral hazard, bargaining, signaling, auctions, and search. S/U or letter grading.

**211C. Game Theory and Economic Applications. (4)** Lecture, three hours. Preparation: introductory probability. Enforced requisite: course 201C. Intended for students who are interested in doing research in microeconomic theory and for students who want to acquire good theory background to do applied work. Coverage of combination of standard results in field and topics of current research, including notions of equilibrium in static and dynamic games, reasoning in games, repeated games, games of incomplete information, and experiments. S/U or letter grading.

**212A. Topics in Advanced Theory: Search Theory. (4)** Lecture, three hours. Preparation: calculus, introductory probability. Price searching, queueing, Brownian motion, martingales, and applications to theory of firm. May be repeated for credit. S/U or letter grading.

**212B. Topics in Advanced Theory: Applied Game Theory. (4)** Lecture, three hours. Preparation: calculus, introductory probability. Use of theory of Bayesian games to study bargaining, monetary theory, and oligopoly. Use of theory of mechanisms to study auction design and imperfectly competitive markets. May be repeated for credit. S/U or letter grading.

**213A-213B. General Equilibrium and Game Theory. (4-4)** Lecture, three hours. Requisite: course 201C. Selected advanced theoretical topics of current interest and introduction to modern mathematical economics, including general equilibrium theory and game theory. S/U or letter grading.

**214A. Topics in Mathematical Economics: General Equilibrium Theory. (4)** Lecture, three hours. Requisite: course 201C. Core convergence theorem, cooperative and noncooperative approach to competitive equilibrium theory, perfectly competitive equilibria, no-surplus condition, and applications to mechanism theory and incomplete market models. May be repeated for credit. S/U or letter grading.

**M215. Topics in Applied Game Theory. (4)** (Same as Political Science M208B.) Lecture, three hours. Preparation: calculus or introductory probability. Designed for graduate economics and political science students. Survey and applications of major solution concepts to models of bargaining, oligopoly, cost allocation, and voting power. S/U or letter grading.

**218A-218B-218C. Proseminars: Economic Theory. (4-4-4)** Seminar, three hours. Quarterly seminars for pre-dissertation and dissertation writers. Discussion of advanced topics and recent developments in game theory, information and uncertainty, and general equilibrium theory. Presentation of recent papers published and unpublished in economic theory as well as research of instructor and students. In-class presentation expected. S/U grading.

**219A-219B-219C. Workshops: Economic Theory and Mathematical Economics. (4-4-4)** Lecture, three hours. Workshops for pre-dissertation and dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

## Monetary Economics

**221A. Monetary Economics I. (4)** Lecture, three hours. Requisites: courses 202A, 202B, 202C. Dynamic methods in business cycles and economic growth. Multiperiod life-cycle models. Sustainable public deficits. Money and inflationary finance. Human capital.

Endogenous fluctuations and regime switching. Econometrics of multiple equilibrium models. Political economy of government deficits and inflation. S/U or letter grading.

**221B. Monetary Economics II. (4)** Lecture, three hours. Emphasis on theoretical, historical, and policy aspects of monetary economics. Financial intermediation, bank panics, asset price volatility, game theoretic models of policy, inflation, implication of monopolistic competition, search and coordination failures, central bank operations, and evolution of monetary institutions. S/U or letter grading.

**221C. Monetary Economics III. (4)** Lecture, three hours. Requisites: courses 202A, 202B, 202C. Emphasis on quantitative dynamic models useful in study of equilibrium business cycles and public finance. Recursive competitive equilibria in representative agent overlapping-generation models, including models with money, taxes, liquidity constraints, and other distortions. S/U or letter grading.

**221D. Monetary Economics IV. (4)** Lecture, three hours. Requisites: courses 202A, 202B, 202C. Emphasis on applied macroeconomics, with topic change each year. Students select one particular data set to study. Each week class studies article from recent work in applied macroeconomics or applied econometrics that teaches one technique or suggests one theoretical restriction on data. Subgroups of students report back to class using technique on their selected data set. S/U or letter grading.

**222B-222Z. Topics in Monetary Economics. (4 each)** Lecture, three hours. Current research in monetary economics. Content varies. May be repeated for credit. S/U or letter grading.

**C226A-C226B-C226C. Seminars: Monetary Economics/Macroeconomics. (4-4-4)** Seminar, three hours. Designed for pre-dissertation and dissertation writers. Overview of most current developments in monetary economics and macroeconomics for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C166A-C166B-C166C. S/U (C226B) and S/U or letter (C226A, C226C) grading.

**228A-228B-228C. Proseminars: Monetary Economics. (4-4-4)** Seminar, three hours. Workshops for pre-dissertation and dissertation writers. Literature surveys or research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper or presentation required. S/U grading.

**229A-229B-229C. Workshops: Monetary Economics. (4-4-4)** Lecture, three hours. Workshops for pre-dissertation and dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

## Econometrics

**231A. Advanced Econometrics I. (4)** Lecture, three hours. Econometric methods for microeconomic models. Topics include identification, nonparametric estimation, limited dependent variable models, duration, panel data, tests of hypotheses. S/U or letter grading.

**231B. Advanced Econometrics II. (4)** Lecture, three hours. Econometric methods for empirical research in economics. Topics include simultaneous equations, instrumental variables, panel data, treatment effects, and point and partial identification, with applications in static and dynamic games, social interactions, matching, and network formation. S/U or letter grading.

**231C. Advanced Econometrics III. (4)** Lecture, three hours. Advanced topics in econometrics that may vary year to year. Current topics include empirical process methods with applications to quantile regression and general M-estimation, estimation and inference methods in high-dimensional models, including

LASSO and Dantzig Selector techniques, and bootstrap. May be repeated for credit. S/U or letter grading.

**M232A. Topics in Econometrics: Bayesian Econometrics. (4)** (Same as Political Science M208E.) Lecture, three hours. Requisites: courses 231A, 231B. Subjective probability, introduction to decision theory, Bayesian analysis of regression, sensitivity analysis, simplification of models, criticism. May be repeated for credit. S/U or letter grading.

**232B. Topics in Econometrics: Time Series. (4)** Lecture, three hours. Requisites: courses 231A, 231B. Stationary stochastic processes, Box/Jenkins methods, spectral analysis, forecasting, rational expectation models, analysis of macroeconomic data. May be repeated for credit. S/U or letter grading.

**232D-232M. Topics in Econometrics. (4 each)** Lecture, three hours. Requisites: courses 231A, 231B. Current research in econometrics. Content varies. Courses in this sequence not ordinarily given every year. May be repeated for credit. S/U or letter grading.

**238A-238B-238C. Proseminars: Econometrics. (4-4-4)** Seminar, three hours. Quarterly seminars for pre-dissertation and dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Research paper or presentation required. S/U grading.

**239A-239B-239C. Workshops: Econometrics. (4-4-4)** Lecture, three hours. Workshops for pre-dissertation and dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

## Economic History

**241. Economic History of Western Europe. (4)** Lecture, three hours. Designed for graduate students. Seminar on European economic history, with emphasis on evolution of institutions and growth. Serfdom, medieval agriculture and agricultural revolution, demographics, industrial revolution, imperial expansion, and decline of Britain. S/U or letter grading.

**242. Economic History of U.S. (4)** Lecture, three hours. Seminar on American economic history. Onset of industrialization, relative economic backwardness of South, slavery, technological change, rise in industrial concentration, women in labor force, development of financial markets. S/U or letter grading.

**243A-243Z. Topics in Economic History. (4 each)** Lecture, three hours. Current research in economic history. Content varies. May be repeated for credit. S/U or letter grading.

**244. U.S. Labor Markets and Public Programs since 1940. (4)** Lecture, three hours. Designed for PhD students. Introduction to current research at intersection of labor economics, public economics, and U.S. economic history, focusing on period after 1940. Topics include economic and wage inequality; intergenerational mobility; increasing (and stalling) educational attainment; changes in health and health care; Great Migration; gender gap in pay and rise of married women's market work; baby boom and bust; racial inequality from slavery to Civil Rights era; and war on poverty. S/U or letter grading.

**C246A-C246B-C246C. Seminars: Economic History. (4-4-4)** Seminar, three hours. Designed for pre-dissertation and dissertation writers. Overview of most current developments in economic history for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C186A-C186B-C186C. S/U grading.

**248A-248B-248C. Proseminars: Economic History. (4-4-4)** Seminar, three hours. Quarterly seminars for pre-dissertation and dissertation writers. Discussion of advanced topics and recent developments in economic history. Presentation of work-in-progress. Research paper required. S/U grading.

**249A-249B-249C. Von Gremp Workshops: History of Entrepreneurship in U.S. Economy. (4-4-4)** Lecture, three hours. Designed for graduate students. Workshops for advanced graduate students. Research in progress discussed by visiting experts, UCLA faculty members, graduate students. S/U grading.

## Public Finance

**251A. Theory and Policy of Taxation. (4)** Lecture, three hours. Examination of influence of taxation on economic efficiency and incidence of taxation in first part of course. Topics include tax equivalences, Ramsey rules, and alternative forms of taxation. Special tax provisions, tax incentives, and progressivity in taxation in second part of course. S/U or letter grading.

**251B. Cost-Benefit Analysis of Public Projects and Programs. (4)** Lecture, three hours. Requisite: course 251A. Presentation of those aspects of applied capital theory that are relevant in decisions concerning investment projects in first part of course. Differences between social and private benefits and costs (shadow prices) for foreign exchange, capital, and labor, with applications to public investment decisions, in second part of course. S/U or letter grading.

**252. Economics of Federalism. (4)** Lecture, three hours. Theories of perfect games and social organization. Role of government, collective goods, collective defense, local public goods, spillovers, and intergovernmental relations. S/U or letter grading.

**253A-253Z. Topics in Public Finance. (4 each)** Lecture, three hours. Current research in public finance. Content varies. Topics include Social Security taxes and programs, unemployment insurance, public provision of medical care, theory of public goods, and theory of public choice. May be repeated for credit. S/U or letter grading.

**254A-254B-254C. Workshops: Public Economics. (4-4-4)** Lecture, three hours. Designed for graduate students. Workshops for advanced graduate students. Research in progress discussed by graduate students, UCLA faculty members, visiting experts. S/U grading.

## Applied Microeconomics

**261A. Labor Economics I. (4)** Lecture, three hours. Wage determination in competitive labor markets. Extension of wage determination to schooling and occupational choice, life-cycle earnings profiles, discrimination, minimum wage legislation, and unionism. Emphasis on empirical literature. S/U or letter grading.

**261B. Labor Economics II. (4)** Lecture, three hours. Requisite: course 261A. Models of life-cycle learning and work behavior, with particular emphasis on recent literature examining labor force behavior and experience of women. S/U or letter grading.

**262A. Topics in Labor Economics. (4)** Lecture, three hours. Current research in labor economics. Content varies. May be repeated for credit. S/U or letter grading.

**262D. Topics in Labor Economics: Development Economics. (4)** Lecture, three hours. Preparation: completion of first-year graduate microeconomics and econometrics courses. Coverage of important key topics in microeconomics of development, such as health, education, risk coping, savings, credit, and household economics. Discussion of empirical methods. S/U or letter grading.

**262F. Topics in Labor Economics: Public Sector Microeconomics. (4)** Lecture, three hours. Preparation: completion of first-year graduate microeconomics and econometrics courses. Coverage of topics related to tax incidence, deadweight loss, public expenditure, income taxation and transfer programs, with emphasis on impacts of such programs on labor supply and savings, social security, unemployment insurance, and other insurance programs. S/U or letter grading.

**262P. Topics in Labor Economics. (4)** Lecture, three hours. Current research in labor economics. Content varies. May be repeated for credit. S/U or letter grading.

**263. Topics in Urban Economics. (4)** Lecture, three hours. Current research in urban and regional economics. Content varies. Serves as forum for presenta-

tion of papers on urban economics by students, UCLA faculty members, and visitors. May be repeated for credit. S/U or letter grading.

**264A. General Equilibrium and Finance. (4)** Lecture, three hours. Designed for graduate students. Introduction to mathematical finance from general equilibrium viewpoint. CAPM and static equilibrium models. Intertemporal models in discrete and continuous time. Spanning, option prices, and derivatives. Martingales, random walks, and market efficiency. S/U or letter grading.

**264B. Fundamentals and Bubbles in Asset Prices. (4)** Lecture, three hours. Requisite: course 264A. Designed for graduate students. Applications of dynamic general equilibrium to asset pricing in economies with exchange and production. Basic empirical puzzles in U.S. and international asset prices, 1880 to 2000: excess volatility, equity premium and risk-free rate puzzle, predictability. Models of habit formation, asset price bubbles, and limited arbitrage asset pricing theories. Market imperfections and bounded rationality. S/U or letter grading.

**264C. Asset Prices, Forecasting, and Learning. (4)** Lecture, three hours. Requisite: course 264A. Designed for graduate students. Introduction to forecasting methods and applications to asset pricing. Signal-extraction under different uncertainty specifications. Kalman filtering and forecasting. Robust filtering and forecasting. Models of behavioral finance. Stylized facts on forecasts and asset pricing anomalies: short-term momentum and long-term reversals of returns. Option pricing anomalies. S/U or letter grading.

**264D. Econometrics of Asset Prices. (4)** Lecture, three hours. Requisite: course 264A. Designed for graduate students. Applications of time-series methods to analysis of asset prices: general method of moments, vector autoregressions, and maximum likelihood estimation. Restrictions imposed by no-arbitrage on time series of returns. Empirical implications of macroeconomic models for asset prices. Response of asset prices to shocks. Incomplete markets. S/U or letter grading.

**C266A-C266B-C266C. Seminars: Labor Economics. (4-4-4)** Seminar, three hours. Designed for pre-dissertation and dissertation writers. Overview of most current developments in labor economics for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C156A-C156B-C156C. S/U (C266B) and S/U or letter (C266A, C266C) grading.

**268A-268B-268C. Proseminars: Labor and Population. (4-4-4)** Seminar, three hours. Quarterly seminars for pre-dissertation and dissertation writers working on empirical issues in areas of labor and population, broadly defined. Presentation of work-in-progress or background material for proposed thesis topics, to be discussed and criticized by faculty and fellow students. Presentation or research paper required. S/U grading.

**269A-269B-269C. Workshops: Labor Economics. (4-4-4)** Lecture, three hours. Workshops for pre-dissertation and dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

## Industrial Organization

**271A. Industrial Organization, Price Policies, and Regulation I. (4)** Lecture, three hours. Major economic aspects of property rights system. Firm and market compared from perspective of alternative arrangements for allocating resources. Traditional problems of competition, monopoly, and industrial concentration. Brief analysis of those portions of antitrust policy bearing on industrial structure. S/U or letter grading.

**271B. Industrial Organization, Price Policies, and Regulation II. (4)** Lecture, three hours. Requisite: course 271A. Study of firm organization and pricing under conditions of less than perfect competition; in-

formation costs and advertising; economic and legal analysis of marketing practices such as discrimination, tie-in selling, resale price maintenance, exclusive dealing, and territorial arrangements. S/U or letter grading.

**271C. Mathematical Theory in Industrial Organization. (4)** Lecture, three hours. Requisites: courses 201A, 201B, 201C. Formal modeling of theory of industrial organization: principal-agent problem, entry deterrence, endogenous price discrimination, monopolistic competition, new approaches to rationality. S/U or letter grading.

**272A-272Z. Topics in Industrial Organization. (4 each)** Lecture, three hours. Current research in industrial organization. Content varies. May be repeated for credit. S/U or letter grading.

**273A. Public Utility Regulation. (4)** Lecture, three hours. Theory, practice, and consequences of regulation in electric power, gas, water, telecommunications, broadcasting, and other regulated industries; experiences of unregulated monopoly and public enterprises by way of contrast. S/U or letter grading.

**C276A-C276B-C276C. Seminars: Industrial Organization. (4-4-4)** Seminar, three hours. Designed for pre-dissertation and dissertation writers. Overview of most current developments in industrial organization for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C176A-C176B-C176C. S/U (C276B) and S/U or letter (C276A, C276C) grading.

**278A-278B-278C. Proseminars: Industrial Organization and Regulation. (4-4-4)** Seminar, three hours. Quarterly seminars for pre-dissertation and dissertation writers to discuss advanced topics and recent developments in industrial organization and regulation. Presentation of work-in-progress for feedback from faculty and fellow students. Presentation or research paper required. S/U grading.

**279A-279B-279C. Workshops: Business Organization. (4-4-4)** Lecture, three hours. Workshops for pre-dissertation and dissertation writers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, advanced graduate students. Research paper required. S/U grading.

## International Economics

**281A. International Trade Theory. (4)** Lecture, three hours. Theoretical and empirical analysis of microeconomic relationships among countries. Determinants of commodity and factor flows, prices, and factor rewards. Effects of trade barriers. S/U or letter grading.

**281B. International Finance. (4)** Lecture, three hours. Theory and evidence on balance of payments, exchange rate determination, international transmission of inflation and business cycles, macroeconomic policy in open economies, alternative monetary systems. S/U or letter grading.

**281C. International Economics. (4)** Lecture, three hours. Theoretical and empirical analysis of interrelation between flows of capital, people, and goods. Applications to current policy. S/U or letter grading.

**282A-282Z. Topics in International Economics. (4 each)** Lecture, three hours. Current research in international economics. Content varies. May be repeated for credit. S/U or letter grading.

**284. Soviet Economic Theory and Organization. (4)** Lecture, three hours. Overall strategy of planning used by USSR planners and specific planning methods, interpreted broadly to cover not only instructions and objectives but also institutional arrangements. Intended and unintended outcomes of methods. S/U or letter grading.

**C285A-C285B-C285C. Seminars: International Economics. (4-4-4)** Seminar, three hours. Designed for pre-dissertation and dissertation writers. Overview of most current developments in international economics for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and dis-



cussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty members, and advanced graduate students. Concurrently scheduled with courses C126A-C126B-C126C. S/U grading.

## Development Economics

**286A. Economic Development. (4)** Lecture, three hours. Requisites: courses 201C, 202C. Study of theoretical and empirical problems related to developing countries. Emphasis on relation between international trade and economic development, dynamic aspects of commercial policies, inflation, stabilization, structural adjustment, growth and migration. S/U or letter grading.

**286B. Cost-Benefit Analysis of Development Projects. (4)** Lecture, three hours. Requisite: course 286A. Methodology for evaluating investment projects, with special attention to types of issues that arise in developing countries. Discussion of social versus private evaluation criteria; applications to highway, electricity, and irrigation projects. S/U or letter grading.

**287A. Topics in Development Economics: Economic Problems of Latin America. (4)** Lecture, three hours. Economic history of Latin America. Great depression, import substitution and industrialization, inflation and growth, free market experiments, and economic integration. May be repeated for credit. S/U or letter grading.

**287B. Topics in Development Economics: Economic Development in East Asia. (4)** Lecture, three hours. Recent economic history of East Asia, focusing on postwar development of Japan, Korea, and China. Emphasis on role of international investment and trade, especially with U.S., in area's economic development. May be repeated for credit. S/U or letter grading.

**287C. Topics in Development Economics: Economic Development. (4)** Lecture, three hours. Designed for graduate students. Topics in monetary and exchange rate policy in developing countries. Students expected to develop analytical tools and underlying policy issues. May be repeated for credit. S/U or letter grading.

**287D. Topics in Development Economics. (4)** Lecture, three hours. Current research in development economics. Content varies. Courses in this sequence not ordinarily given every year. May be repeated for credit. S/U or letter grading.

**288A-288B-288C. Proseminars: International and Development Economics. (4-4-4)** Seminar, three hours. Quarterly seminars for pre-dissertation and dissertation writers on current issues in international trade and finance and development economics. Presentation of work-in-progress for feedback from faculty and other graduate students. Presentation or research paper required. S/U grading.

**291A. Asset Pricing. (4)** Lecture, three hours. Introduction to models of firm dynamics, their use in modeling valuation of firms, and embedding of these models in general equilibrium for purposes of understanding market valuation of corporate sector as whole. Introduction also to continuous-time search-and-matching models and their applications to financial economics. S/U or letter grading.

**291B. Asset Pricing. (4)** Lecture, three hours. Recent theoretical and empirical research on monetary policy. Includes issues such as how monetary policy is implemented in practice. What are effects of different monetary policy tools, what restrictions on government does monetary policy impose, transmission mechanisms of monetary policy, welfare costs of inflation, how does monetary policy interact with credit markets and how does it affect asset prices. S/U or letter grading.

**C296A-C296B-C296C. Seminars: Asset Pricing. (4-4-4)** Seminar, three hours. Designed for pre-dissertation and dissertation writers. Overview of most current developments in asset pricing theory for advanced undergraduate and graduate students. Introduction to graduate-level research in this field. Different topic each week, with presentation and discussion of new papers. Research in progress presented, discussed, and criticized by visiting experts, UCLA faculty mem-

bers, and advanced graduate students. Concurrently scheduled with courses C146A-C146B-C146C. S/U (C296B) and S/U or letter (C296A, C296C) grading.

**298A-298B-298C. Proseminars: Asset Pricing. (4-4-4)** Seminar, three hours. Quarterly seminars for pre-dissertation and dissertation writers on empirical issues in area of asset pricing, broadly defined. Presentation of work-in-progress or background material for proposed dissertation topics that are discussed and criticized by faculty members and fellow students. Presentation or research paper required. S/U grading.

## Teaching Practicum

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

## Master of Quantitative Economics

**401A. Microeconomic Theory. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Coverage of fundamentals of optimization, choices by price-taking agents, consumer and producer surplus, monopoly and competition, Walrasian equilibrium and two welfare theorems, constant returns to scale economy, choice over time, uncertainty, and information and market design. Letter grading.

**401B. Applied Economics. (4)** Lecture, three hours. Limited to Master of Applied Economics students. How to be sophisticated users and producers of research on issues and policies in several core areas of labor, public, and health economics. Rigorous analyses of core policy questions with cutting-edge empirical analysis. Letter grading.

**402A. Macroeconomic Theory. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to main topics of graduate macroeconomics, including macroeconomic data, models of economic growth, supply and demand of factors of production, business cycle models, unemployment, monetary policy and inflation, and fiscal policy and deficits. Letter grading.

**402B. Applied Macroeconomics. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Study of alternative theories of causes of unemployment and inflation, with focus on Keynesian approach to monetary and fiscal policy and modifications and extensions of Keynesian ideas designed to explain financial crises. Letter grading.

**403A. Introduction to Statistical Methods and Econometrics. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to probability, statistics, econometrics, and time-series methods used in economics, business, and government. Topics include random variables, hypothesis testing, estimation, distribution functions, simple and multiple regression, and estimation with stationary/nonstationary processes. Letter grading.

**403B. Applied Econometrics. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Basic tools necessary for high-level cutting-edge empirical research. Coverage of variety of methods suited for empirical studies that apply to experimental data, quasi-experimental data, panel data, and cross-sectional data. Letter grading.

**404A. Writing and Presentation Skills for Economists I. (4)** Seminar, three hours. Limited to Master of Applied Economics students. Designed to help students develop communication and presentation skills essential for success in any aspect of business. Practice in writing economics documents for variety of professional audiences. Writing taught as process—brainstorming, collaborating, continually revising, and challenging ideas. Presentation skills to focus on presenting information clearly and organizing ideas, with emphasis on role of audience when presenting, because audience determines diction, style, tone, organization, research, and ideas. Grammar incorporated as needed, especially in regard to writing. Letter grading.

**404B. Writing and Presentation Skills for Economists II. (4)** Seminar, three hours. Limited to Master of Applied Economics students. Builds on skills learned in course 404A. Writing component to focus on summarizing, critiquing, and report writing. Process writing used and self-editing skills stressed. Presentations include summary/critique, opinion piece, and final group presentation that includes proposals. Grammar incorporated as needed, especially in regard to writing. Letter grading.

**405. Macroeconomic Implications of Globalization. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Development of understanding of some main macroeconomic implications of increasing integration of world economy through trade linkages, multinational production, and financial markets. Letter grading.

**406. Money and Banking. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to models and data used to understand connection between asset prices, health of financial sector, and macroeconomy, including review of recent papers to gain introduction to questions being addressed on research frontier. Letter grading.

**407. Economics of Entrepreneurship. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Examination of role of entrepreneurship and entrepreneurial strategies—source of ideas, value creation, market development, scaling, exit strategies. Group practice of entrepreneurship. Development of original ideas into business plans. Letter grading.

**408. Environmental Economics. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to major ideas in environmental economics by studying causes and consequences of pollution, with special emphasis on understanding China's environmental challenges and policy options. Letter grading.

**409. Forecasting Asset Prices. (1 to 4)** Lecture, three hours. Limited to Master of Quantitative Economics students. Introduction to recent developments in international finance. Coverage of lending booms and financial crises both theoretically and empirically, as well as foreign exchange market anomalies and different approaches to forecasting exchange rates. Letter grading.

**410. Economists in Action. (1 to 2)** Seminar, three hours. Limited to Master of Applied Economics students. How theory maps into policymaking. Renowned policymakers from Central Banks, Economics Ministries, and International Organizations to lecture on policy-relevant topics. Completion of assignments linking lectures with economic theory and real-world events. Letter grading.

**411. Inequality and Macroeconomy. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to analysis of economic inequalities and interplay between inequality and macroeconomy. What are relative roles of market forces and institutions in shaping dynamics of economic inequality? What are consequences of globalization on distribution of income within and between countries? Does inequality hamper economic growth and macroeconomic stability? How do macroeconomic policies and structural reforms affect distribution of income and wealth? Use of simple models and empirical analysis by taking global and historical perspective. Discussions about inequality in U.S. and Europe over last two centuries, as well as challenges raised by recent inequality trends in China, India, and Latin America. Letter grading.

**412. Fundamentals of Big Data. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to basic concepts, uses, and challenges of big data, with emphasis on pragmatic hands-on applications using real-world data for current and future big data practitioners—consumers of big data insights for economic applications. Letter grading.

**413. Data Analytics and Big Data. (4)** Lecture, three hours. Recommended corequisite: course 412. Limited to Master of Applied Economics students. Designed for end users of big data, those who translate analytic results into business applications, with guest lecturers from wide spectrum of industrial and corpo-

rate big data users. Presentations of their business models for leveraging big data, sharing of data sets, and guiding students to extract actionable business insights for those industries. Letter grading.

**414. Asset Pricing and Portfolio Theory in Practice. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Study covers asset pricing and portfolio theory, critical areas for deeper understanding of financial markets and investments. Building from theory, incorporation of empirical analysis and real-world issues to bridge theory with practice through case studies. Letter grading.

**415. Evidenced-Based Policy Analysis in Labor, Public, and Health Economics. (4)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to key policy questions in labor, public, and health economics, including health care, education, unemployment, training programs, and welfare. Economic principles at heart of these topics and main approaches to scientifically evaluate policies that affect them, including data, current case evidence, cutting-edge empirical methods, and their relation to microeconomic theory. Letter grading.

**421. Incentives, Information, and Markets. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Introduction to concepts of information economics that lie at heart of modern economics and application of them to understand incentives within firms, as well as competition between them. Study of theoretical models and functioning of real-life markets, such as insurance, labor, and consumer markets. Consideration of whether we can design policies that improve market outcomes. Role of models in economics, and how to tie data and theory together. Letter grading.

**422. International Economics. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Investigation of several theoretical frameworks in international economics followed by applications to empirical questions. Neoclassical trade models, analysis of firms and heterogeneous producers, and economic geography topics. Case studies and empirical papers focus on understanding determinants of trade patterns and on measurement of aggregate and distributional effects of international trade. Discussion of recent research on effects of NAFTA and Brexit, effect of trade on inequality in developed and developing countries, and impact of infrastructure investments on trade and development. Letter grading.

**423. Introduction to Applied Data Science. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Designed to build strong bases in tools and methods of data science and analytics. Introduction of tools for capture, transformation, imputation, visualization, and mapping of data for downstream processing in analytics pipeline. Introduction of analytics subsystems and scalable storage and processing of very large and complex datasets. Information theory, computational analysis, and behavioral economics with specific emphasis on data science in economics. Letter grading.

**424. Income Inequality. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Investigation of rise of earning inequality (with emphasis on U.S.), focusing on learning how to use models and data to quantify impact of range of forces on inequality. Overview of broad empirical trends, with emphasis on understanding how to document these facts ourselves. Consideration of three classes of potential explanations for these patterns: international connections (e.g., trade and immigration), institutional change (e.g., minimum wage and unionization), and technical change (e.g., computerization and spread of robots). Focus on quantifying these forces ourselves. Study of top income inequality: why have extremely rich become much richer than very rich? Focus on CEO compensation. Letter grading.

**425T. Machine Learning for Economists. (4)** (Formerly numbered 425.) Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Covers set of fundamental machine learning algorithms, models, and theories, and intro-

duces advanced engineering practices for implementing data-intensive intelligent systems. Topics involve both supervised methods (e.g., support vector machine, neural network, etc.) and unsupervised methods (e.g., clustering, dimensionality reduction, etc.), and their applications in classification, regression, data analysis, and visualization. Letter grading.

**426. Knowledge Discovery and Data Mining. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Study of theoretical and practical techniques in field of data mining and knowledge discovery. Topics include data processing, association rules, supervised learning, clustering, etc., and their applications in visualization, social network analysis, sentiment mining, and opinion analysis. Focus on making sense of large-scale or web-scale dataset, and providing students with first-hand project experiences. Letter grading.

**427. Applied Machine Learning. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Preparation: basic understanding of technology principles, basic programming skills, sufficient mathematical background in probability, statistics, and matrix analysis. Foundational course with primary application to data analytics. Intended to be accessible to students from backgrounds such as economics or mathematics, and to students from less technical backgrounds. Covers some fundamental topics in machine learning such as Bayesian learning, optimization for learning, metric learning, and various classification, regression, clustering techniques, and other advanced topics. Real-world data-intensive problems. Letter grading.

**428. Health Care Analytics: Methods and Applications. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Introduction to basic concepts of health economics. Development of skills in economic modeling and real-world data analysis. Written policy briefs and business cases evaluating pros and cons of different approaches to improving health care markets. Letter grading.

**429A. Professional Development for Emerging Economists I. (1 to 2)** Seminar, two hours. Limited to Master of Applied Economics students. Designed to help students develop professional skills essential for success in professional business settings. Aids students in translating topics covered in other courses into language and format that is accessible to industry/non-academic settings. Students conduct labor market research, identify and analyze industry trends, and develop targeted plan to achieve professional success. Exploration of skills identification, goal setting, researching employment market, and résumé writing. Letter grading.

**429B. Professional Development for Emerging Economists I. (1 to 2)** Seminar, two hours. Enforced requisite: course 429A. Limited to Master of Applied Economics students. Designed to help students develop professional, communication, and presentation skills essential for success in professional business settings. Aids students in translating topics covered in other courses into language and format that is accessible to industry/non-academic settings. Students practice presenting for variety of professional audiences. Exploration of presentation skills, personal branding, salary negotiation, and interviewing techniques. Letter grading.

**430. Applied Econometrics with Python. (3 to 4)** Lecture, three hours; discussion, one hour. Limited to Master of Quantitative Economics students. Introduction to econometrics and its applications to economics, business, and government using Python. Topics include simple and multiple regression, cross-sectional and panel data, instrumental variables, and binary choice models. Letter grading.

**431. Introduction to Econometrics, Cross-Sectional and Panel Data, and Time Series. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Introduction to econometrics, cross-sectional and panel data, and time series methods used in economics, business, and government. Topics include estimation, simple and multiple

regression, cross-sectional and panel data, instrumental variables, and estimation with stationary/non-stationary processes. Letter grading.

**432. Data Science for Financial Time Series. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Data science provides many useful tools for modeling financial data and testing hypotheses on how markets work, and prices are formed. Study of these important tools. Focus on econometric models and methods to understand financial market dynamics. Topics include returns of financial assets, statistical tests on financial market efficiency, linear time series models, time-varying expected return models, heteroscedastic volatility models, optimal portfolio choice problem, capital asset pricing models, factor models, portfolio allocation, tracking and risk management. Letter grading.

**433. Core Finance. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Introduction to core principles of asset valuations. Emphasis on common economic reasoning used in valuation problems. Derivations and study of valuation formulas for three broad asset classes: fixed income securities, equity, and derivatives. Practical applications to investment problems, and relation to current financial news. Letter grading.

**434. Machine Learning and Big Data for Economists. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Discussion of some machine learning techniques including lasso, regression trees, random forests, and neural networks. Covers most recent developments at intersection of machine learning and econometrics, now commonly referred to as double machine learning. Study of double machine learning in detail, and discussion of how to apply it to enhance analysis of classical econometric problems, such as program evaluation and demand estimation. Letter grading.

**435. Principles of Big Data Management Systems. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Focus on modern data management systems that are used in data analytics. Students are exposed to cutting-edge data management concepts and systems and provided with working knowledge needed to manage large-scale data. Covers modern data management techniques of cloud storage systems, NoSQL databases, and map-reduce computing paradigm. Letter grading.

**436. Introduction to Financial Accounting. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Financial accounting is concerned with preparation and public dissemination of financial reports designed to reflect corporate performance and financial condition. By providing timely, relevant, and reliable information, these reports facilitate decision-making of investors, creditors, and other interested parties. Financial markets depend on information contained in these reports to evaluate executives, estimate future stock returns, assess firms' riskiness, and allocate society's resources to their most productive uses. Letter grading.

**437. Health Economics: Understanding Roles of Regulation, Public Policy, and Demographic Change. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Economics students. Applied microeconomics study of economics of health care sector. Examination of trends in health care costs, functioning of health care sector, structure of insurance markets, and current public health issues. Study of how underlying economic concepts such as adverse selection and moral hazard lead to market failures. Examination of impact of policy and demographic change on future costs. Letter grading.

**441A. Applied Data Management for Economists. (1)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to modern practices in data gathering, cleaning, and warehousing. Topics include web scraping using application programming interfaces, engineering of R packages, and data manipulation in Structured Query Language (SQL). Emphasis on applications of data pipeline expected of entry-level analyst. Supplements Master of

Applied Economics coursework by offering solutions to expedite R coding techniques and dissemination of analytic findings. Letter grading.

**441B. Applied Data Management for Economists. (1)** Lecture, three hours. Limited to Master of Applied Economics students. Development of student data visualization toolkit using Tableau and Python packages. Focus on techniques to simplistically communicate data, Excel functions/dashboards, Tableau dashboards, Matplotlib library, and interactive visualizations with Plotly. Letter grading.

**441C. Applied Data Management for Economists. (1)** Lecture, three hours. Limited to Master of Applied Economics students. Introduction to business intelligence software relevant for big data and financial services companies. Survey of Amazon Web Services, Microsoft Power BI, and Apache Hadoop, and deployment of automated solutions on these platforms. Development of presentation skills necessary for industry. S/U or letter grading.

**442A. Econometric Python Laboratory. (1)** Laboratory, three hours. Limited to Master of Quantitative Economics students. Simulates tasks of financial researcher by encouraging creative approaches to interest rate monitoring, finding leading indicators, and portfolio construction. Students locate and clean financial datasets, then conduct experiments running significance tests throughout data pipeline. Coursework includes many open questions that offer students opportunities to take novel approaches and investigate forecasting with basket of procedures. Letter grading.

**442B. Master of Applied Economics Finance Laboratory. (1)** Laboratory, three hours. Limited to Master of Applied Economics students. Broadens exposure to tasks seen in financial analyst role. Coding tasks are centered around options order book, depth chart, volume profile, cointegrated assets, and commodities data. Theory covered consists of behavioral finance relating to technical analysis, applications of portfolio optimization and hedging techniques. Letter grading.

**443. SQL and Data Management. (2 to 4)** Lecture, three hours. Limited to Master of Quantitative Economics students. Introduction to most requested data management tools in industry. Students gain hands-on experience with SQL database queries and database management through integrations with database management systems, query editors, and Python and R programming languages. Students practice saving advanced commands as stored procedures on collective database, simulating tasks seen in real world. Use of Excel and Visual Basic for Applications to make data cleaning, visualization, and data management processes more efficient. Letter grading.

**444. Stock Market and Fundamental Equity Research Analysis. (2 to 4)** Lecture, three hours. Limited to Master of Quantitative Economics students. Preparation: basic understanding of finance and financial markets concepts and theories. Exploration of fundamental analysis, method of measuring security's value by assessing economic and financial factors. Through lectures, readings, and interactive discussions, exploration of macroeconomic and microeconomic factors that affect intrinsic value of security. Study is designed to deepen student exposure to world of fundamental equity research through research and development of investment memorandum. Letter grading.

**445. Applied Machine Learning for Economists I. (2 to 4)** Lecture, three hours; discussion, one hour. Limited to Master of Quantitative Economics students. Exploration of how machine learning can be used to find underpriced real estate opportunities—representative of types of problems frequently faced in industry by analysts, computer scientists, economists, and data scientists. Use of machine learning algorithms and tools to find undervalued assets through applied approach. Exploration, cleaning, wrangling, and analysis of property listings dataset. Use of trees and forests to improve ability to find good deals. Incorporation of additional datasets—demographic and census data—and use of principal component analysis and support vector machines to better identify properties.

Use of Python, Pandas, SciKit Learn, Apache Spark, Apache Sedona, and other technologies. Letter grading.

**446. Applications of Cloud Computing and Blockchain. (2 to 4)** Lecture, three hours. Limited to Master of Quantitative Economics students. Introduction to cloud services software relevant for big data analytics and data scientists. Survey of Amazon Web Services. Study of automated solutions to data gathering, storage, and machine learning. Students acquire specific skill sets in application programming interfaces and web scraping with Python through hands-on problem solving. Use of blockchain and smart contracts to make business processes more efficient through technical and theoretical application. Letter grading.

**447. Applied Financial Forecasting and Machine Learning. (2 to 4)** Lecture, three hours. Requisites: courses 430, 431. Limited to Master of Quantitative Economics students. Outlook of economy is of vital importance for many key decisions. Introduction to theory and application of cutting-edge tools used by economists and business leaders to inform their views of economy. These tools are applied to forecast or nowcast key economic indicators such as inflation, unemployment, and gross domestic product. Examination of how forecasts of fundamentals can be used to inform our views on asset prices. Letter grading.

**448. Teamwork and Leadership in Data Science. (2 to 4)** Lecture, three hours. Limited to Master of Quantitative Economics students. Teamwork and leadership skills are essential to excelling in virtually any role in any field. Understanding of how teams work and whether, why, and how one can obtain and thrive in leadership role is critical. Students learn how to lead, manage, negotiate, and effectively participate in teams of data scientists, learning from, interacting with, and presenting to data science leaders and other distinguished experts. Students gain practical insights and skills that can be applied in field of data of science, in related fields, and more broadly, in their lives and careers. Letter grading.

**449. Collaboration and Team Management for Emerging Economists. (1 to 4)** Seminar, three hours. Limited to Master of Quantitative Economics students. Designed to help students develop social-emotional learning skills through interactive activities and lessons to improve their abilities to succeed in variety of team settings. Lessons and activities are designed to be highly interactive, expressive, and creative and aid students in stress reduction, emotion management, and team building. Students are aided in translating topics covered in other courses into language and format that is accessible to industry/non-academic settings. Letter grading.

**450. Master of Quantitative Economics Capstone Project. (1 to 4)** Tutorial, three hours. Limited to Master of Quantitative Economics students. Semi-independent or directed-study in which students complete their capstone project. Capstone project is final element of Master of Quantitative Economics program, and is intended to help students transition from academic studies to professional world. Includes analysis of quantitative and/or qualitative data, research techniques, and writing strategies. Students submit drafts of project components throughout quarter to adviser. Letter grading.

**451. Financial Institutions and Monetary Policy. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Quantitative Economics students. Study of complex financial architecture that has emerged in last several years, and its evolution over time. Covers institutional detail, and theoretical and empirical research on monetary policy. Development of some basic models and production of Python code to produce plots regarding relevant data. Letter grading.

**452. Empirical Industrial Organization. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Quantitative Economics students. Introduction to empirical methods and applications in industrial organization (IO). Development of empirical toolkit to estimate industry models of demand and supply and apply it to analysis of emerging issues in IO from regulator, consumer, and firm perspective. Underlying theme is that most real-world markets are neither perfectly

competitive, nor strict monopolies, but rather involve strategic interactions among firms and consumers. To capture these interactions empirically, development of empirical models of consumer demand and firm competition, and use of these models to analyze interactions of firm strategies (including pricing, product quality choices, and advertising) and market structure across range of industries. Letter grading.

## Special Studies

**495. Teaching College Economics. (2)** Seminar, one hour; laboratory, three hours. Designed for graduate students. Required of all new teaching assistants. Classroom practice in teaching, with individual and group instruction on related educational methods, materials, and evaluation. May be repeated for credit. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Individual Study. (2 to 8)** Tutorial, to be arranged. Directed individual study or research. S/U grading.

**597. Individual Study: Graduate Examinations. (2 to 8)** Tutorial, to be arranged. Directed individual study in preparation for MA comprehensive examination or PhD qualifying examinations. S/U grading.

**599. Individual Research: PhD Dissertation. (2 to 8)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Directed individual research in preparation of PhD dissertation. S/U grading.

# EDUCATION

*School of Education and Information Studies*

1009 Moore Hall  
Box 951521  
Los Angeles, CA 90095-1521

## Education

310-825-8326

## School e-mail

Cecilia Rios-Aguilar, PhD, *Chair*

# Faculty Roster

## Professors

H. Samy Alim, PhD  
Walter R. Allen, PhD (*Allan Murray Cartter Professor of Higher Education*)  
Ron Avi Astor, PhD (*Marjorie Crump Professor of Social Welfare*)  
Alison L. Bailey, EdD  
Li Cai, PhD  
Mitchell J. Chang, PhD  
Christina A. Christie, PhD  
Richard Desjardins, PhD  
Megan L. Franke, PhD  
Kimberley Gomez, PhD  
Louis M. Gomez, PhD  
Sandra H. Graham, PhD (*Presidential Professor of Education and Diversity*)  
Tyrone C. Howard, PhD (*Pritzker Family Endowed Professor of Education to Strengthen Families*)  
Sylvia Hurtado, PhD  
Connie L. Kasari, PhD  
Catherine Lord, PhD, *in Residence*  
Teresa L. McCarty, PhD (*George F. Kneller Professor of Education and Anthropology*)  
Rashmita S. Mistry, PhD

Safiya U. Noble, PhD  
 Edith Mukudi Omwami, PhD  
 Marjorie E. Faulstich Orellana, PhD  
 Cecilia Rios-Aguilar, PhD  
 John S. Rogers, PhD  
 William A. Sandoval, PhD  
 Linda J. Sax, PhD  
 Michael H. Seltzer, PhD  
 Daniel G. Solórzano, Jr., PhD  
 Eileen L. Strempele, DMA  
 Robert T. Teranishi, PhD  
 Carlos A. Torres, PhD  
 Noreen M. Webb, PhD  
 Jeffrey J. Wood, PhD  
 Laura Wray-Lake, PhD

### Professors Emeriti

Marvin C. Alkin, EdD  
 Eva L. Baker, EdD  
 Gordon L. Berry, EdD  
 Nicholas G. Blurton Jones, PhD  
 Sol Cohen, PhD  
 Aimée Dorr, PhD  
 Frederick D. Erickson, PhD (*George F. Kneller Professor Emeritus of Education and Anthropology*)  
 Patricia C. Gándara, PhD  
 Sandra Harding, PhD  
 Charles C. Healy, PhD  
 Carollee Howes, PhD  
 Douglas M. Kellner, PhD (*George F. Kneller Professor Emeritus of Education and Philosophy*)  
 Marilyn L. Kourilsky, PhD  
 Patricia M. McDonough, PhD  
 Peter L. McLaren, PhD  
 Bengt Muthén, PhD  
 Pedro A. Noguera, PhD  
 Jeannie L. Oakes, PhD (*Presidential Professor Emerita of Educational Equity*)  
 Gary A. Orfield, PhD  
 W. James Popham, EdD  
 Val D. Rust, PhD  
 Carola E. Suárez-Orozco, PhD  
 Marcelo M. Suárez-Orozco, PhD  
 Concepción M. Valadez, PhD  
 Carl Weinberg, EdD  
 Wellford W. Wilms, PhD  
 Charles Z. Wilson, PhD

### Associate Professors

Eddie R. Cole, PhD  
 Robert Cooper, PhD  
 M. Kevin Eagan, Jr., PhD  
 David G. García, PhD  
 Inmaculada M. García-Sánchez, PhD  
 Jennie K. Grammer, PhD  
 Jessica C. Harris, PhD  
 Ozan Jaquette, PhD  
 Minjeong Jeon, PhD  
 Ananda Drake Marin, PhD  
 José-Felipe Martínez, PhD  
 Federica Raia, PhD  
 Lucrecia Santibañez, PhD

### Assistant Professors

Lorena Guillén, PhD  
 Nicole A. Mancevice, PhD, *in Residence*  
 Anna J. Markowitz, PhD

### Adjunct Professors

Gregory K. Chung, PhD  
 Diane Durkin, PhD  
 Faye C. Peitzman, PhD  
 Jody Z. Priselac, EdD  
 Karen Hunter Quartz, PhD  
 Jia Wang, PhD

### Adjunct Associate Professor

Mark P. Hansen, PhD

### Adjunct Assistant Professor

Kristen L. Rohanna, PhD

## Overview

As one of the top-ranked public graduate programs in education in the nation, the Department of Education is guided by a commitment to integrate theory and practice and to improve educational practice and policy. The department attracts prominent scholars and is internationally recognized for its research centers in evaluation, higher education, child development, and urban education. Whether students choose to pursue a Doctor of Philosophy (PhD), a Doctor of Education (EdD), a master's degree, or a services or instructional credential, they graduate with a broad understanding of educational theory and tested practice.

## Undergraduate Major

### Education and Social Transformation BA

#### Learning Outcomes

The Education and Social Transformation major has the following learning outcomes:

- Understanding of educational landscape
- Understanding of learning and human development
- Understanding of education and educational institutions in social, cultural, and historical contexts
- Understanding of organizational cultures and dynamics
- Ability to interpret social data and research and critically evaluate research studies
- Ability to apply these understandings to imagine, assess, and implement solutions to specific problems in education
- Clear and cogent communication
- Understanding of multiple perspectives, diversity, pluralism, and social justice

#### Entry to the Major

##### Pre-major

Students entering UCLA directly from high school can select the Education and Social Transformation pre-major on the UCLA admission application. Transfer students may also select the pre-major. See Transfer Students for details.

Continuing students who were not admitted directly to the pre-major may apply for admission if they are able to complete the preparation for

the major by the end of their second year to apply by the fall of their third year.

### Admission

Students must submit an application to declare the Education and Social Transformation major. Admission is based on academic performance in preparation for the major courses and overall academic record at UCLA. The [application](#) is available on the major website.

### First-Year Students

After completing the required lower-division courses and 45 lower-division units, students identified as Education and Social Transformation pre-majors may formally apply to declare the major.

### Transfer Students

Transfer applicants to the Education and Social Transformation major with 90 or more units are considered for admission based on academic achievement. Transfer credit is subject to department approval. Consult an undergraduate counselor before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

Transfer students who were not admitted directly to the Education and Social Transformation pre-major may apply for admission if they are able to complete the preparation for the major by the end of their second quarter at UCLA.

### Requirements

#### Preparation for the Major

*Required:* Education 10 or 11, and 35.

#### The Major

*Required:* at least nine upper-division courses distributed as follows:

1. Two courses from each of the following three areas of competency: *Histories and Philosophies of Education*—Education 100 through 119; *Contexts of Teaching, Learning, and Development*—Education 120 through 149; *Inquiry and Design for Learning*—Education 150 through 169
2. At least one additional course in education, which may come from any of the areas of competency or from courses designated as electives (Community Engagement and Social Change 130, Education 170 through 179)
3. Education 180
4. One community engagement course selected from Education M129XP, 130AX, 130BX, 130CX, M131A, M131B, M131C, M142, 144XP, 159, 171, 176, 195, 195CE, or 196XP (this course may also be applied toward an area of competency). Students must complete Education 180 prior to taking a community engagement course
5. Capstone course: Education 181. Students must complete five out of the six courses from the areas of competency and complete the community engagement course requirement before enrolling in the capstone course



## Policies

### Preparation for the Major

Preparation for the major courses must be completed with a C grade or better.

### The Major

Each course must be taken for a letter grade and be a minimum of 4 units. Students must have a grade-point average of 2.0 or better in upper-division education courses.

## Undergraduate Minors

### Education Studies Minor

The [Education Studies minor](#) is intended to address the diverse information needs of the UCLA undergraduate community to allow students to learn more about the multitude of contemporary professional research issues confronting the field of education, understand the complex interactions between the legal, social, political, and economic forces that influence and shape educational policies in America, provide an introduction for students who wish eventually to pursue careers in education either as teachers or researchers.

### Admission

To enter the minor, students must have at least sophomore standing with a cumulative grade-point average of 2.3 or better, have completed one education course with a grade of C or better, and submit the [minor application](#). Applicants are expected to be committed to inquiry of issues central to educational research and practice. Students must follow the program of study in effect at the time of their admission.

Students may apply for admission once they have completed one approved Education course. Students must apply by the spring quarter of their third year.

### The Minor

*Required Courses (28 units minimum):* Any seven education courses (minimum of 4 units each), one of which may be a lower-division course.

### Policies

A maximum of 8 graded units of Education 195 through 199 may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade and be a minimum of 4 units. Students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Information and Media Literacy Minor

The [Information and Media Literacy](#) minor is designed for students who wish to augment their major program with a group of related courses that provide a systematic, focused, and critical introduction to information and media literacies. The core courses together with electives provide students with an understanding of the processes, dynamics, and societal implications of the production and dissemination of information and media and skills for their judicious evaluation, consumption, and productive use.

### Admission

To enter the minor, students must have a cumulative grade-point average of 2.3 or better, have completed one required lower-division or upper-division course with a grade of B or better, and submit the minor application. [Applications](#) are available on the minor website.

### The Minor

*Required Lower-Division Core Courses (10 units):* Two courses selected from Information Studies 10, 20, 30.

*Required Upper-Division Core Courses (9 units):* Information Studies C115, M121 (or Education M121).

*Upper-Division Elective Courses (12-15 units):* Three courses selected from Education 105C, 107A, 109A, 109B, 126, M131C, 133, M135, M137, 144, CM178, Information Studies 118, M135, M137, 180, or 199.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade and be a minimum of 4 units. Students must have a cumulative grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Doctor of Education

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

#### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Doctor of Education/Juris Doctor

## Education MA, PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Articulated Degree Program

Articulated degree programs permit no credit overlap; students must complete degree requirements separately for each degree.

- Education MA/Doctor of Medicine

### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Education MA, PhD/Juris Doctor

## Educational Administration EdD

The Department of Education offers a Doctor of Education (EdD) degree in Educational Administration jointly with UC Irvine.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Master of Education

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Articulated Degree Program

Articulated degree programs permit no credit overlap; students must complete degree requirements separately for each degree.

- Master of Education/Latin American Studies MA

### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Education/Juris Doctor

## Special Education PhD

The Department of Education offers a Doctor of Philosophy (PhD) degree in Special Education jointly with California State University, Los Angeles.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Education

### Lower-Division Courses

**10. Introduction to Educational Issues and Scholarship. (5)** Lecture, two hours; discussion, two hours. Introduction to broad landscape of public education in U.S. Intended for those interested in educational research, policy, or teaching in both formal and informal educational contexts. Readings highlight work of educational researchers from UCLA Department of Education, especially ways their scholarship intersects with policy and practice. Students work in groups to identify real-life problem affecting public education in Los Angeles. Study of this problem from multiple perspectives. Conceptualization of socially-just solution. Letter grading.

**11. Education, Equality, and Future of American Society: Problems, Prospects, and Policies. (5)** Lecture, four hours; discussion, one hour. Schools are primary institutions charged with responsibility of preparing young people for their roles as citizens so that they can participate in our democracy. Public schools also serve as key sites where two essential, and at times conflicting, functions are carried out: students are sorted based on measures (and perceptions) of their ability to fill occupations and roles that are essential to economy; and students are educated in hopes that next generation will acquire knowledge, creativity, and problem-solving skills to solve problems created by previous generations. Focus on understanding challenges, contradictions, and complexities associated with carrying out these functions. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**35. Introduction to Inquiry and Research in Education. (5)** Lecture, two hours; discussion, two hours. Introduction to empirical and analytical educational research. Intended for undergraduates interested in learning how to find, interpret, and evaluate educational research. Overview of different methods of conceptualizing inquiry and gathering evidence, including qualitative approaches (e.g., ethnographic, semi-structured interviews, case study), quantitative approaches (e.g., survey, measurement, experimental, descriptive), mixed methods, and design-based research. Highlights multiple methods of inquiry and research, ethics of conducting research in social sciences, and norms of conducting and reporting research in field of education. Overview of selected strands of equity-oriented research in education. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**92F. Academic Success in Undergraduate Experience. (2)** Lecture, one hour; discussion, one hour. Designed for first-year or transitioning students to promote understanding of factors involved in making adjustments to college experience, both academic and social. Letter grading.

**98. Critical Issues in Education. (4)** Seminar, 30 minutes; laboratory, 30 minutes. Introduction to critical educational issues and approaches taken by researchers, policymakers, and education advocates as they respond to these issues. Laboratory portion of course engages students in small research groups where they acquire background on particular issue of interest, learn about social sciences research, and conduct mini-research projects. May be repeated for credit. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

#### Histories and Philosophies

**100. Introduction to Philosophy of Education. (5)** Seminar, four hours. Introduction to major Western philosophical thinkers on education including Dewey, Freire, Froebel, Locke, Montessori, Plato, Rousseau, and others. Examination of ultimate goals of education, content of education, and processes of teaching and learning according to these theorists and their influence on later educational thought and practice. Assignments include readings, response papers, film analyses, educator interviews, document analysis (for their underlying educational philosophy), and proposal of educational philosophy. Letter grading.

**101B. History of Schools in U.S. (4)** Lecture, four hours. Intensive consideration of American society, including its racial and cultural diversity as well as how settler colonial projects influence our present conditions. Consideration of historical development of schools in U.S., examining issues of racism, ethnic and gender differences, perspectives of cultural diversity, and impact on classroom instruction. Critical analysis of contexts and structure of public education in California, focusing on state, district, and school governance and finance. Letter grading.

**101C. History of Higher Education. (5)** (Formerly numbered C101.) Lecture, three hours; discussion, one hour. Exploration of major eras in history of higher education. Topics include issues concerning access, diversity, parental choice, cultural literacy, teacher empowerment, and role of popular media. Letter grading.

**M102. Mexican Americans and Schools. (4)** (Same as Chicana/o and Central American Studies M102.) Seminar, two hours; discussion, two hours. Theoretical and empirical overview of Chicana/Chicano educational issues in U.S., with special emphasis on disentangling effects of race, gender, class, and immigrant status on Chicana/Chicano educational attainment and achievement. Examination of how historical, social, political, and economic forces impact Chicana/Chicano educational experience. P/NP or letter grading.

**M103. Asian American Education and Schooling. (4)** (Same as Asian American Studies M114.) Seminar, four hours. Examination of existing body of research from various disciplines on Asian/Pacific American educational experiences. Letter grading.

**104A. Introduction to Exceptional Learners. (4)** (Formerly numbered 134.) Lecture, two hours; discussion, one hour. Survey of characteristics and related educational needs of students (preschool through high school) who vary in mental, physical, psychological, and social characteristics. Focus on disabilities, with exploration in area of gifted/talented education. Emphasis on inclusion, and legal, social, and philosophical issues associated with it. Students learn perspectives from disability studies and engage in class activities designed to challenge students to put inclusion into practice. Students develop understanding of various areas and exceptionalities of special education with emphasis on role of student special needs in context of general education settings. Letter grading.

**105A. Early Childhood Education and Policy. (5)** (Formerly numbered 105.) Seminar, four hours. Overview of early care and education (ECE) landscape in U.S. and variety of policy systems used to provide care for young children. Consideration of possibilities and pitfalls of ECE as much hailed solution for educational inequality. Critical thought about how to use policy to provide young children with what they need to thrive. Letter grading.

**105B. Topics in Child Development and Social Policies. (5)** (Formerly numbered 133.) Seminar, four hours. Research seminar designed to enable students to gain basic understanding of ways in which public policies are established and implemented, learn about policy landscape in several major domains of child and family life in U.S. and other countries, and use scientific research on children's cognitive and social development to evaluate and understand effects of social and economic policies. Letter grading.

**105C. Comparative Educational Policies and Practices. (5)** (Formerly numbered 109C.) Seminar, four hours. Cross-national survey of educational policies and practices in delivery of education services. Comparative perspective on national context defining institutional differences in policy and practices in delivery and access, types (within tier and sector diversity), and funding mechanism for education services in both developing and developed country contexts. Focus on examination of state of education and socio-political, economic, and cultural factors that contribute to similarities and differences in institutional structures, organizational, and management functions, and on agenda for consideration of equality and equity in deployment of resources for realization of inclusive quality education for all. Early childhood education, foundational education, post-secondary education (including university and non-university systems), and lifelong learning (and adult education) as themes informing cross-national comparison of policies and practices in delivery of education services. Letter grading.

**105D. Policy Analysis and Real Politics of Education. (5)** (Formerly numbered 110.) Lecture, two hours; discussion, two hours. Exploration of relationship between scholarly policy analysis and actual workings of policy systems. Selected topics include achievement standards and assessment, school finance, equal access to education, and school reform. Letter grading.

**105E. Organization for Economic Cooperation and Development and Education. (5)** Seminar, three hours. Introduction to education policy analysis at international level with focus on Organization for Economic Cooperation and Development (OECD) program of work and outputs related to field of education. Overview of history of OECD and model of governance related to education, criticisms of OECD's power and influence on education, as well as coverage of range of OECD comparative data, comparative studies, and thematic and policy reviews related to education. Letter grading.

**106A. Education and Law. (5)** (Formerly numbered 129.) Seminar, four hours. Research seminar providing overview of high-profile legal controversies that shape so many policy debates at both K-12 and higher education levels. Major areas of focus include campus safety, religion and schools, educational quality and law, broad-based right to equal educational opportunity, and Internet-related issues and concerns. Letter grading.

**106B. Lesbian, Gay, Bisexual, and Transgender Issues in Education and Law. (4)** (Formerly numbered 147.) Lecture, four hours. Lesbian, gay, bisexual, and transgender-related controversies that arise in schools, colleges, and universities today and how they are being addressed by legal and education communities. In particular, examination of real-life consequences of current laws and exploration of what might be done to make things better for all persons. Letter grading.

**106C. Diversity, Democracy, and Law. (4)** Lecture, four hours. Introductory overview of high-profile legal controversies that shape so many of policy debates regarding access to higher education and equity for underrepresented students, free speech and expression, academic freedom and other First Amendment-related controversies and legal issues. Letter grading.

**107A. Race, Class, and Education Inequality in U.S. (5)** (Formerly numbered 130.) Lecture, two hours; discussion, two hours. Focus extensively on understanding educational experiences of following groups in U.S.: African Americans, Asian Americans and Pacific Islanders, Chicanas/Chicanos/Latinas/Latinos, and low-income white Americans. Examination of how historical development of public education in U.S. has influenced its present form. Critical look at some current issues and policy debates in education, including debate over school reform, bilingual education, and affirmative action. Letter grading.

**107B. Race and Education: Access, Equity, and Achievement. (5)** (Formerly numbered 164.) Seminar, four hours. Social/psychological perspective on education, with particular attention to race, ethnicity, and inequality. Study of structural, social, and personal determinants of educational outcomes. Consideration of relationship of schools to social context and other societal institutions. Examination of how education sets life trajectory in America and effects of race/ethnicity on access to educational opportunity in our society. Letter grading.

**M108. Sociology of Education. (5)** (Same as Sociology M175.) Lecture, four hours; discussion, one hour. Study of how U.S. educational system both promotes socioeconomic opportunities and maintains socioeconomic inequalities: historical and theoretical perspectives on role of education in U.S. society; trends in educational attainment; ways in which family background, class, race, and gender affect educational achievement and attainment; stratification between and within schools; effects of education on socioeconomic attainment, family, health, attitudes, and social participation; educational policies to improve school quality and address socioeconomic inequalities. Letter grading.

**109A. Globalization and Learning. (4)** (Formerly numbered 152A.) Lecture, two hours; discussion, two hours. Introduction to different conceptualizations of globalization and their relationship to educational processes and learning in contemporary societies. Discussion of several concepts and theoretical lenses as basis for approaching and understanding how dialectics of global and local are affecting educational systems and learning over lifespans. Letter grading.

**109B. Global Citizenship Education. (4)** (Formerly numbered 152B.) Lecture, four hours. Exploration of issues of global citizenship in education and society as whole by analyzing critical challenges and envisioning possible solutions to multiple layers of theoretical, empirical, and practical implementation of global citizenship education. Examination of how global citizenship education and education for sustainable development are beginning to impact life, actions, policies, and practices of educators, students, non-government organizations, governments, multinational organizations, and other key players in local and global contexts. Examination of how global citizenship education impacts our worldview, teaching, and learning as we strive to envision and work toward more just and sustainable society. Letter grading.

**C111. Politics of Education. (5)** (Formerly numbered C125.) Lecture, two hours; discussion, two hours. Political dimensions of education institutions as organizations. Relationships between education institutions and political institutions in society. Political theory as foundation for public policy analysis; interest groups in

education policy formation and implementation; and focus on Freirean pedagogy. Concurrently scheduled with course C207. P/NP or letter grading.

**112. Black Student Activism: History of Resistance on Campus. (4)** Lecture, three hours; discussion, one hour. Activism is long-standing component of student life on U.S. college and university campuses. Focus on Black student activism. As higher education became more accessible to Black Americans, new wave of activism entered college campuses, with Black Lives Matter movement being one of most recent examples. Examination of philosophical, intellectual, social, economic, and political elements that have shaped and propelled Black student activism over past two centuries. Exploration of earliest activist activities among Black students, ranging from abolitionist movement in early 1800s to fight for Black and African studies programs during 1960s and 1970s. Interrogation of what past teaches about Black student activism today. Study includes discussions, mock debates, case studies, and primary source analyses. Letter grading.

**113. Democracy, Justice, and Education. (5)** Lecture, three hours. Democracy, justice, and education are core ideals that define public discourse and scholarship about schooling. Exploration of these ideals from philosophical and practical perspective in context of century-old community schools movement. Global pandemic has renewed public interest in community schools framed as equity-focused anti-poverty reform to provide integrated social supports such as health, nutrition, and after-school programs. Movement also has strong democratic roots tied to local control, collective problem solving, and community-based learning—challenging ideas about who has power, how young people learn, and how teachers teach. Inquiry grounded in experience of two UCLA community schools as well as five other community school sites chosen by students. Examination of whether and how these schools are sites of social transformation by investigating contexts, theories, and practices that define their work. Letter grading.

**117. Road Trip: Exploring College Campus Cultures across U.S. (5)** Seminar, four hours. Study of what other college campuses beside UCLA have to offer. Intended for students interested in understanding prominent aspects of non-mainstream U.S. colleges and universities. Exploration of institutional missions of special mission colleges and universities, how these institutions provide services to students, and unique strengths and challenges on these campuses through discussions, mock debates, case studies, and assignments that delve deeper into experiences of attending these special mission colleges and universities. Letter grading.

**118. Sociology of Community Colleges. (5)** Seminar, four hours. Application of existing research, and sociological and economic theories to analysis of community colleges. Scholars have employed diverse set of concepts, theoretical frameworks and methods to understand these educational institutions. Examination of this sector of higher education in U.S. through range of qualitative, quantitative, historical, and case studies. Covers economic and sociological foundations of research on community colleges and their missions (transfer, remediation/developmental, adult basic education, English as second language, workforce development, etc.), institutional dynamics and organizational culture, government and business impact, for-profit colleges, social media use among students and administrators, student support and community-building, and effective reform efforts. Letter grading.

**119. Variable Topics in Histories and Philosophies of Education. (4)** Seminar, four hours. Variable topics course organized around courses that introduce students to landscape of education within historical, disciplinary, and policy contexts. Consult Schedule of Classes for topics and instructors. May not be repeated for credit. Letter grading.

## Contexts of Teaching and Learning

**120. Early Childhood Development. (5)** Seminar, four hours. Development of positive social behaviors and their enhancement. Broad overview of children's psy-

chological development, with emphasis on personal, social, and emotional attributes of preschool and elementary school child. Aspects of prosocial behavior and aggression. Enhancement of prosocial behavior and modification of such negative behaviors as aggression. Review and evaluation of contemporary educational programs for promoting positive social behaviors in elementary schools. Methodological aspects of child development. Overview of early childhood education and issues related to role of family, school, and television in child development. Letter grading.

**M121. Introduction to Media Literacies. (5)** (Same as Information Studies M121.) Seminar, four hours. Exploration of relationships between media, technology, and popular culture. Students guided to analyze media representations, question process of normalizing dominant ideologies, and create counter-hegemonic media messages. Through application of critical media literacy framework, students expand notions of literacy to be more inclusive of all types of texts; and deepen their abilities to question power of word, image, and sound-bite to represent social and environmental injustice. Letter grading.

**123. Teaching Profession. (5)** Seminar, four hours. Exploration of traditional and alternative teaching practices and public responses to teachers teaching and students learning. Examination of education in socioeconomic context and discussion of some philosophical questions that challenge teaching profession. Letter grading.

**C124. Theory and Practice of Intergroup Dialogue: Building Facilitation Skills. (4)** (Formerly numbered C160.) Seminar, four hours. Topics include social psychology of intergroup relations, intercultural and dialogic communication theories, methods for reconciling and bridging differences in schools and communities, research and evaluation of intergroup dialogues and other educational methods for improving intergroup relations, and core competencies for planning, delivering, and evaluating intergroup dialogues in multicultural settings. While providing foundational grounding in theory and pedagogy of intergroup dialogue, particular attention to relationships between intergroup dynamics, structural inequalities, systems of privilege and oppression, and mental health outcomes and disparities among populations. Concurrently scheduled with course C244. Letter grading.

**CM125XP. Narratives of Justice: Disrupting School-to-Prison Pipeline—Arts, Activism, and Agency. (4)** (Formerly numbered CM163.) (Same as African American Studies CM113XP.) Lecture, four hours; discussion, one hour. Exploration of policies and practices, art and activism, and other forms of agency engaging school-to-prison pipeline. Concurrently scheduled with course CM229B. P/NP or letter grading.

**126. Language, Literacy, and Academic Development: Educational Considerations for School-Age Multilingual and English Language Learner Students. (5)** (Formerly numbered 166.) Seminar, five hours. Use of child-centered approach to examine instructional strategies and assessment practices with preK-12 multilingual and English learner (EL) students who are learning academic content at same time they are acquiring English (and possibly additional languages) in school. Critical comparison of effectiveness of English-only programming with dual-language approaches (e.g., two-way immersion, transitional bilingual education) and roles of summative and formative assessments in educational decision making with multilingual and EL students. Letter grading.

**127. Educational Psychology: Contexts for Teaching and Learning. (5)** Lecture, two hours; discussion, two hours. Not open for credit to students with credit for course 128. Broad overview of educational psychology, with examination of relationship of teaching and learning; various perspectives as to how children learn; issues of teaching and learning that arise based on child's social class, ethnic background, gender, age, and level of ability. Letter grading.

**128. Educational Psychology: Contexts for Learning and Development. (4)** Lecture, four hours. Not open for credit to students with credit for course 127. Overview of theories, methods, and research in educational psychology. Education psychology involves study of

how students learn and contexts that support this learning. Learning is complex process. Study of research and theory related to different aspects of learning including cognition, motivation, and self-regulation. Discussion of ways in which educators can support these processes in students. Letter grading.

**M129. Arts Education Undergraduate Practicum: Preparation, Observation, and Practice. (4)** (Formerly numbered M190.) (Same as Arts Education M192.) Seminar, three hours. Enforced requisite: course M142. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students participating in Visual and Performing Arts Education minor. Students implement and evaluate original arts education programs under guidance of faculty members in small course settings. P/NP or letter grading.

**M129XP. Arts Education Undergraduate Practicum and Capstone Project. (4)** (Formerly numbered M190SL.) (Same as Arts Education M192XP.) Seminar, three hours; practicum, three hours; outside study, six hours. Enforced requisites: courses M104, M190. Limited to juniors/seniors. Continuation of arts education training and supervised practicum for advanced undergraduate students participating in Visual and Performing Arts Education minor. Students continue to implement and evaluate original arts education programs under guidance of faculty members and designated guiding teachers in K-12 public school settings. May be repeated for credit with consent of instructor. P/NP or letter grading.

**130AX. Instructional Apprenticeship in Teaching and Learning at UCLA Lab School. (4)** (Formerly numbered 196C.) Tutorial, 10 hours. Requisite: course 180. Limited to juniors/seniors. Not open for credit to students with credit for course 130BX or 130CX. Training and supervised apprenticeship for advanced undergraduate students at UCLA Lab School (Corinne A. Seeds campus), K-6 elementary school on UCLA campus. Students gain understanding of innovative educational work that goes into teaching and learning at UCLA Lab School through seminars, readings, observations, and discussions. Individual meetings with faculty mentor throughout term. Letter grading.

**130BX. Instructional Apprenticeship in Teaching and Learning at UCLA Partner Schools. (4)** (Formerly numbered 196D.) Tutorial, 10 hours. Requisite: course 180. Limited to juniors/seniors. Not open for credit to students with credit for course 130AX or 130CX. Introduction to K-12 teaching profession through training and supervised off-campus experiences at UCLA partner schools. Students gain grounded understanding of social issues in education through readings, observations, direct support in classrooms, and tutoring activities. Individual meetings with faculty mentor throughout term. Letter grading.

**130CX. Instructional Apprenticeship in Teaching and Learning at UCLA Community Schools. (4)** Tutorial, 10 hours. Requisite: course 180. Not open for credit to students with credit for course 130AX or 130BX. Examination of how UCLA partners with Los Angeles Unified School District (LAUSD) to educate, engage, empower, and serve students and families through community schooling model. Through readings, discussions, guest speakers, and course assignments, students are offered varied opportunities to examine case studies on how two institutions, UCLA and UCLA Community Schools, partner together to ensure greater engagement and democratic development to transform neighborhood school, as well as link school day and after-school curricula to solve locally identified, real-world, and community problems to uplift entire school community. Students gain grounded understanding of social issues in education through readings, observations, direct support in classrooms, and tutoring activities. Letter grading.

**M131A. Language, Literacy, and Human Development Research Group Seminars. (5)** (Formerly numbered M194A.) (Same as African American Studies M194A.) Seminar, three hours; laboratory, two hours (when scheduled). Requisite: course 180. Research seminar designed to provide opportunity to combine theory and practice in study of human development in

educational contexts. Focus on relationship between theories of development, culture, and language. Letter grading.

**M131B. Culture, Gender, and Human Development Research Group Seminars. (5)** (Formerly numbered M194B.) (Same as African American Studies M194B.) Seminar, three hours; laboratory, two hours (when scheduled). Requisite: course 180. Research seminar designed to provide opportunity to combine theory and practice in study of human development in educational contexts. Focus on relationship between theories of development, culture, and gender. Letter grading.

**M131C. Culture, Communications, and Human Development Research Group Seminars (5)** (Formerly numbered M194C.) (Same as African American Studies M194C.) Seminar, three hours; laboratory, two hours (when scheduled). Requisite: course 180. Research seminar designed to provide opportunity to combine theory and practice in study of human development in educational contexts. Focus on relationship between theories of development, culture, and technologies. Letter grading.

**132. Autism: Mind, Brain, and Education. (5)** Lecture, two hours; discussion, two hours. Study of autism spectrum disorders (ASD) and related disabilities. Discussion of characteristics of disorder, effective interventions, and exploration of impact of children with ASD on families. Limited number of independent observations of individuals in community required. Letter grading.

**133. Literacy in Society. (5)** (Formerly numbered 122.) Lecture, four hours. Literacy plays significant role in cognition and language, political governance and law, and economic, social, and personal well-being. Exploration of these aspects of literacy and their implications for teaching and learning. Examination of literacy in workplace, healthcare, and community. Consideration of new literacies, interrelationship between literacy and technology, and impact of illiteracy on income and opportunity. Letter grading.

**134. Early Childhood Mathematics Education. (5)** Seminar, two hours; fieldwork, two hours. Focus on how research in early childhood mathematics can be used to engage young people in learning mathematics. Study addresses research on how young children learn mathematics, teaching preschool mathematics, and policy context that shapes student opportunities in early childhood education. Particular attention paid to equity issues. Includes fieldwork at local preschool site working with students in mathematics. Letter grading.

**M135. Environmental Justice through Lens of Media and Education. (5)** (Same as Information Studies M135.) Seminar, four hours. Exploration of human relationships with natural world, historically and today. Students take critical look at ways information has been shaped, audiences positioned, and movements manipulated to promote commercial interests over public good. Exploration of progressive movements that have in past challenged—and currently challenge—neoliberal agendas, extractive policies, and unsustainable practices. Letter grading.

**M136. Working Families and Educational Inequalities in Urban Schools. (4)** (Same as Labor Studies M136.) Seminar, three hours; fieldwork, five hours. Exploration of complex relationship between working-class and poor communities and inequalities in American urban schools. Drawing on multiple disciplinary frameworks that address issues of race, ethnicity, and immigration, schools viewed as sites where inequalities are produced and resisted. Review of history of exclusionary treatment and divergent conceptual frames that educational researchers have used to understand notion of inequality, access to quality public education, and how race, ethnicity, and class affect school experiences for working-class and poor communities. Look inside schools through community service learning opportunity to examine systems, structures, and everyday practices that sustain and reproduce inequality and policies that intend to remedy educational inequalities in urban schools. Opportunity to investigate issues of working-class families and inequalities as they relate to students' own communities and experiences. P/NP or letter grading.

**M137. Critical Digital Media Literacies. (4)** (Formerly numbered 137.) (Same as Information Studies M137.) Lecture, four hours. Students question relationships with digital media and information society and explore how media and information communication technologies are improving society, strengthening democracy, and opening up opportunities for challenging hegemony and promoting social transformation. Problematicization of social media and questioning of ways it is being used to surveil, capture data, spread hate, mislead, distract, and destabilize democracies. Students analyze media representations, question process of normalizing dominant ideologies, and create counter-hegemonic media messages. Combines theoretical foundations of cultural studies and critical pedagogy with practical applications of new digital media and technology, as well as traditional print-based means of communication. Exploration of media representations of race, class, gender, sexual orientation, and other identity markers. Students analyze and create media projects related to education. Letter grading.

**138. Cognitive Development and Schooling. (5)** Lecture, four hours; discussion, one hour. Overview of theories, methods, and research on children's cognitive development and implications of this work for educational practice. Covers range of research from different perspectives, drawing from domains such as developmental psychology, cognitive psychology, developmental cognitive neuroscience, and education. Students learn about basic cognitive processes. Exploration of ways in which contexts—including those at home, early-care settings, and school—impact children's development. Letter grading.

**139. Culture and Cognition. (4)** Lecture, four hours. Introduction to theoretical foundations of research on culture and cognition. Drawing from insights of cultural psychology and anthropology, study of various definitions of community spaces, etc.; and consideration of social, political, and educational implications of ways these terms are conceptualized. Study address questions of relationship between culture and development of mind; how this relationship might be studied; what insight research on culture and cognition offers for the organization of learning environments; and for understandings of diversity and equity. Letter grading.

**140. Educational Perspectives of Relational Practices in Modern Medicine. (5)** Seminar, four hours. Systematic discussion of personhood and body concepts, in context of asymmetric person-to-person relationships in high-tech modern medical training and practice. Exploration of diverse implications for building theories of relational practice. Students learn to use phenomenological approach, to make sense of lived experience of making sense of world we inhabit; and stance on who we are and activities at hand in everyday practices. Phenomenological approach maintains focus on how things show up; what affordances emerge in activities and practices; and how we comport toward them making sense of them, others, and ourselves. Letter grading.

**141. Adolescent Development. (5)** Lecture, four hours. Introduction to adolescence—period of tremendous change and growth across all domains of development, including physical, social, cognitive, and emotional during second decade of life. Topics may include pubertal development, adolescent brain development, family, friend, peer, and intimate relationships, social identity and intergroup relations, school, work, and civic engagement. Draws on developmental science research on adolescence and applies that knowledge to examination of practices and policies. Contemporary and global conceptualizations of adolescence and more complex understandings of developing self in relation to significant others (i.e., family, friends, peers) and bounded in socio-historical time and place (i.e., school, work, media). Letter grading.

**M142. Introduction to Arts Education for Multiple Publics: Theory and Practice. (4)** (Formerly numbered M104.) (Same as Arts Education M102.) Seminar, three hours; outside study, nine hours. Introductory course with focus on arts education for multiple publics in inner-city settings. Study of core issues in arts education, creativity, and social justice as students develop, implement, and assess original syllabi,



lesson plans, and community learning projects for multiple publics in inner-city schools and arts organizations. Collaboration with partner schools in planning, teaching, and evaluation of arts education programs in dance, music, theater, and visual arts. P/NP or letter grading.

**143. Understanding Pathways to College. (4)** Lecture, two hours; discussion, two hours. Examination of inequality across K-12 and higher education to understand how college admissions are stratified across racial and class lines. Roles of school personnel, higher education admissions, families, and students in promoting equal educational opportunity. Course is good preparation for students interested in working in UCLA programs such as Early Academic Outreach Programs that serve students in Los Angeles area schools. Letter grading.

**144. Pedagogies of Global Citizenship Education. (4)** (Formerly numbered 152C.) Lecture, four hours. Not open for credit to students with credit for course 144XP. Questions regarding nature and possibility of education that can foster global citizenship necessary to understand and resolve world's most pressing issues. Focus on curriculum and instruction of global citizenship education. Using local and global research, exploration and analysis of various perspectives, curricula, and pedagogies pertaining to teaching and implementation of global citizenship education at different levels of education. Letter grading.

**144XP. Pedagogies of Global Citizenship Education. (5)** Lecture, three hours; field work, one hour. Requisite: course 180. Not open for credit to students with credit for course 144. Questions regarding nature and possibility of education that can foster global citizenship necessary to understand and resolve world's most pressing issues. Focus on curriculum and instruction of global citizenship education. Using local and global research, exploration and analysis of various perspectives, curricula, and pedagogies pertaining to teaching and implementation of global citizenship education at different levels of education. Letter grading.

**145. Children, Immigration, and Education. (4)** Lecture, four hours. Exploration of diverse experiences of young people across globe whose lives have been shaped by movement across geopolitical, social, cultural, and linguistic borders from sociological, anthropological, psychological, public policy, and educational perspectives. Bringing together these multiple epistemological lenses, study addresses issues of identity, citizenship, belonging, growing up in multi- and bilingual communities, learning in and out schools, educational processes and policies, school-family connections, and more. Letter grading.

**146. Critical Perspectives on Educational Assessment Approaches: Pre-Kindergarten to College. (4)** Seminar, three hours. Introduction of fundamental concepts and approaches in large-scale and classroom assessment. Brings critical perspectives to assessment design, uses, and interpretations, looking weekly at specific use cases in diverse learning contexts. Letter grading.

**147. Social Context of Learners in K-12: Diversity, Residential Mobility, Immigration, and Food Security Conditions in California. (5)** (Formerly numbered 139.) Seminar, four hours. Examination of K-12 student experience in California schools. Comparison of geographic disparity in shared experiences, and prevalence of special and difficulty circumstances that have implications for learning and learning outcomes. Key areas identified include race and ethnic diversity in schools; geographic and residential mobility (including homelessness and temporary/transitional housing placement conditions); migration-schooling nexus (migrant education); and food insecurity conditions in student population. Data-driven, school-level analysis relying on statistics from California Department of Education and Los Angeles Unified School District. Data from other states offers points of comparison with respect to student demographic and geographic experience across categories explored. Examination of potential impact of differential burden of inequality and disparity in resource opportunity on student learning and learning outcomes. Letter grading.

**149. Variable Topics in Contexts of Teaching and Learning. (4)** Seminar, four hours. Variable topics course organized around topics that teach students about theory and research on how people learn as well as sociocultural contexts that shape teaching and learning. Consult Schedule of Classes for topics and instructors. May not be repeated for credit. Letter grading.

## Inquiry and Design

**150. Quantitative Research in Education: Claims and Evidence. (5)** Lecture, two hours; discussion, two hours. Requisite: course 35. Introduction to four conceptual tools used to evaluate soundness of conclusions drawn from research evidence: notions of internal validity, statistical validity, construct validity, and external validity. Statistical validity requires basic fluency with quantitative data analysis, which students learn using statistical software R. Analysis of how values and beliefs shape quantitative education research and how research findings get translated when they are reported for popular media audiences. Quantitative background is not required. Letter grading.

**151. Quantitative Research in Education: Measurement and Assessment. (5)** Lecture, four hours; discussion, one hour. Enforced prerequisite: course 35, with grade of C or better. Intended for students who are interested in better understanding what makes good tests and how to critically interpret and evaluate tests and test scores in educational contexts. Introduction to measurement, testing, and assessment in educational settings. Overview of foundational concepts, methods, issues, and practices of educational measurement and assessment. Overview of basic statistical concepts and methods. Highlighting and evaluation of three core concepts of assessment: reliability, validity, and fairness. Students develop ability to critically interpret assessment data and apply both classical and modern theories of measurement and validly measure constructs of interest such as knowledge, attitude, and motivation. Students demonstrate understanding of equity and social justice issues related to fair use of educational measurement and assessment. Letter grading.

**152. Quantitative Research in Education: Regression Analysis. (5)** Lecture, two hours; discussion, two hours. Requisite: course 150 or 151. Preparation: basic familiarity with programming language R. Introduction to regression as tool to answer questions about education. Regression is commonly used to answer questions about association claims—relationship between variables—and causal claims—causal effect of one variable on another. Using regression appropriately requires thoughtfulness about what kinds of questions regression can answer, about assumptions regression relies on, about limitations of our data, and about how particular variables (e.g., race and gender) are incorporated into analyses in order to avoid regression results that may be biased and may reify rather than interrogate problematic ideas. Emphasis on learning fundamental concepts of regression analysis and how these concepts can be thoughtfully applied to address different kinds of questions about education. Students are trained how to read and critically assess research and applications using R programming language. Letter grading.

**156. Introduction to Qualitative Research in Education for Social Transformation. (5)** Lecture, two hours; discussion, two hours. Requisite: course 35. Qualitative researchers who focus on education and social transformation often examine social roots of educational inequalities and injustices, and organization of teaching and learning across diverse settings in order to understand educational possibilities. Introduction to epistemological, theoretical, ethical, and political foundations of conducting qualitative research in education. Students become familiar with breadth and scope of qualitative research. Theoretically-grounded, practical orientation that teaches students how qualitative researchers work individually and in teams to design studies that may ultimately support movement toward educational and social change. Assignments guide students through iterative research design process, which includes conducting needs assessment

using qualitative data collection tools, making sense of pilot data, and negotiating research plans with stakeholders. Letter grading.

**157. Qualitative Research in Education: Ethnography. (5)** Seminar, four hours. Requisite: course 35. Examination of debates and dilemmas of conducting ethnography research in educational settings. Survey of research methodologies and methods (observations and interviews) in ethnography of education research. With consideration to issues of race/ethnicity, gender, sexual orientation, class, language, and immigration status, study guided by central question of how ethnography can inform efforts to create more socially-just educational systems and spaces of learning. Designed to help students develop skills important for senior capstone project. Letter grading.

**159. Educational Research and Equity in Informal Learning: Collaboration between Hammer Museum and UCLA Education. (5)** Seminar, three hours. Requisites: courses 35, 180. Through collaboration with Hammer Museum, introduction to importance of informal learning contexts, specifically in art museums, and value of conducting educational research within such contexts, while keeping equity at center of inquiry and exploration. Study of art museum pedagogies and philosophies. Reflection on art museum responsibility to support positive learning experiences for diverse audiences and local communities. Exploration of Research-Practice Partnerships education research approach that can support art museums in understanding problems of practice and questions of interest to their communities through mutually beneficial collaboration between researchers and practitioners. This approach challenges more traditional research-practitioner power dynamics by creating opportunities for both to jointly negotiate research questions, methods, and data analysis. Letter grading.

**160. Transformative Research in Community-Based Settings. (5)** (Formerly numbered 188A.) Lecture, four hours; fieldwork, one hour. Requisites: courses 35, 180. Introduction to broad tradition of transformative research in education—public scholarship that aims to disrupt long-standing educational inequities in partnership with local communities. This tradition includes Youth Participatory Action Research (YPAR), Community-Based Action Research (CBAR), and other collaborative approaches that value diverse forms of expertise and knowledge. Through variety of community-engaged learning opportunities, students are supported to develop ability to analyze education in social and political context, develop skills for effecting change, demonstrate understanding of multiple perspectives, diversity, pluralism, and social justice. Letter grading.

**165. Educational Program Evaluation. (5)** (Formerly numbered 139.) Seminar, four hours. Requisite: course 35. Stages and methods for conducting evaluations of educational and social programs, with emphasis on evaluation approaches that are theoretically grounded, methodologically rigorous, practical, and useful. Letter grading.

**166. Program Evaluation Theories and Practice. (5)** Seminar, four hours. Requisites: courses 10, 35. Introduction to various theories concerning evaluation of educational and social programs. Examination of how these theories differ with respect to goals, priorities, and associated procedures. Development of evaluation plan for specific program. In developing this plan, students consider core features of program, engage program stakeholders to understand needs and priorities, and connect their proposed approach to specific evaluation theories. Through parallel development of multiple plans to evaluate single program, students observe extent and manner in which differences in theory are manifested in evaluation design. Letter grading.

**169. Variable Topics in Inquiry and Design. (4)** Seminar, four hours. Requisite: course 35. Variable topics course organized around courses that teach students how to read and communicate about research. Consult Schedule of Classes for topics and instructors. May not be repeated for credit. Letter grading.

## Electives

**170. Exploration of Topics in Education. (2)** (Formerly numbered 184.) Lecture, one hour. Variable topics course, with emphasis on theories of teaching and learning, connecting them to instructional activities for students in various learning settings, including libraries and schools. P/NP grading.

**171. Community Service Learning for Academic Achievement. (4)** (Formerly numbered 185.) Lecture, two hours; discussion, two hours. Emphasis on cognitive learning and motivation theories and their relevance to strategies for developing curricular instructional techniques and training that contribute to tutoring, counseling, and other instructional assistance in various school settings. P/NP or letter grading.

**172. Activism through Community Service. (5)** Seminar, four hours. Exploration of impact and importance of activism in addressing health, educational, and social disparities that have led to discrimination, segregation, and marginalization of people of color. Students acquire methodology to combat these issues through participating in activism and community service at UCLA to further address issues that minoritized populations experience. Students apply their experiential knowledge from their respective projects in Community Programs Office Student Association, Student Initiated Outreach Center, Community Service Commission, or other UCLA community service organization to provide critiques and solutions to issues they are combating in their respective projects. Letter grading.

**173. Dialog across Difference. (4)** Seminar, three hours. Offers safe and inviting space to engage in open, constructive discourse on issues related to social identities, such as race/ethnicity, socio-economic class, and sexual orientation identities. Students learn from one another's perspectives, participate in experiential learning exercises, read and discuss relevant materials, and explore their own and other groups' experiences in various social and institutional contexts. Offers opportunities to appreciate and learn to bridge differences, discover and maximize commonalities, interact with others around controversial issues pertaining to various forms of privilege and oppression, and work to help create social change. Letter grading.

**174A. Experiential Learning in Secondary Classrooms: Health. (4)** (Formerly numbered 170C.) Lecture, one hour; fieldwork, four hours. Training and supervised practicum for undergraduate mathematics students interested in teaching in secondary classrooms, including working with 6th- through 12th-grade students in school sites. Focus on health requirements from California Commission on Teacher Credentialing. Experts in field lead discussion of issues related to physical and mental health of students and educators, issues of bullying, and learning theories and practices that engage diverse groups of students in classrooms. Active engagement in reflection on issues in schools in which students work. Letter grading.

**174B. Experiential Learning in Secondary Classrooms: Law. (2)** (Formerly numbered 170D.) Lecture, one hour; fieldwork, four hours. Training and supervised practicum for undergraduate mathematics or science students interested in teaching in secondary classrooms, including working with 7th- through 12th-grade students in school sites. Focus on law requirements from California Commission on Teacher Credentialing. Experts in field lead discussion of issues related to legal and ethical concerns of schooling, culture of schools, issues of bullying, building of classroom community, and learning theories and practices that engage diverse groups of students in classrooms. Active engagement in reflection on issues in schools in which students work. Letter grading.

**174C. Experiential Learning in Secondary Classrooms: Technology. (2)** (Formerly numbered 170E.) Lecture, one hour; fieldwork, four hours. Training and supervised practicum for undergraduate mathematics students interested in teaching in secondary classrooms, including working with 7th- through 12th-grade students in school sites. Focus on technology requirements from California Commission on Teacher Credentialing. Experts in field lead discussion of issues related to use of technology in classrooms, and

learning theories and practices that engage students with diverse needs and interests. Active engagement in reflection on issues in schools in which students work. Letter grading.

**175A. Educational Innovations in Sport and Entertainment in Context of Diversity. (4)** Seminar, four hours. Introduction to central issues at nexus of education, sports, entertainment, and diversity. Examination and investigation of recent innovations in education, sports leadership, and entertainment that promise greater representation, equity, and inclusion of marginalized groups. Examination of media role in forming perceptions and attitudes, and its educational force in changing perceptions of athletes, and of college and professional sports. Examination of innovations in education, sports leadership, and entertainment that promote greater diversity. Examination of these and other related issues through prism of relevant theories, recent research literature, and documentaries. Letter grading.

**175B. Educational Leadership and Diversity in Sports: Equity, Access, and Future Prospects. (4)** Seminar, three hours. Examination of how leadership of sport, especially within intercollegiate athletics, impacts higher education, businesses, and other related organizations at macro and micro levels. Examination of equity across racial, gender, and social-class lines in both collegiate and professional sports. Addresses access in terms of which institutional mechanisms are in place to cultivate culture that empowers student-athletes, women, and people of color to positively matriculate in terms of social mobility. Approach to evaluating success of various organizations with diverse leaders and participants in sport focuses on both qualitative and quantitative measures. Letter grading.

**175C. Education, Hip-Hop Culture, and Sport. (4)** Lecture, three hours. Exploration of intersection of hip-hop culture, sport, and education; and how hip-hop culture serves as instrument of critical and culturally relevant pedagogy in K-12 education, higher education, and informal learning contexts. Exploration of development and rise of hip-hop from underground movement to dominant, cultural phenomenon; and its appropriation by prominent sports personalities. Exploration of hip-hop's connection to television, social media, fashion, art, and film. Exploration of how this cultural art form intersects with development of social identities and cultural learnings in traditional and non-traditional educational settings (e.g., public schools, private schools, charter schools, and home schooling); and its enormous educational impact in general. Exploration of potential of hip-hop music and its cultural art form for furthering culturally relevant pedagogies and learning experiences. Letter grading.

**175D. Education of Contemporary Athletes: Leadership Themes and Principles. (4)** Seminar, three hours. Introduction to educational and business themes surrounding leadership in athletics. Emphasis on requisite experiences, knowledge, skills set, and abilities/characteristics for pursuing career in sport team operations; and how this impacts educational experiences of athletes. Study dissects current (mis)perceptions related to careers as general managers or sports agents, and supplies students with actionable plans for career development and advancement. Students learn about potential educational and career impact of impending and passed legislation related to name, image, and likeness rights of contemporary college student-athletes, including detailed discussion and analysis of how California bill fits within overall higher education model at universities such as UCLA. Letter grading.

**176. Transformative Research in Community-Based Settings: Practicum. (5)** (Formerly numbered 188B.) Lecture, four hours; fieldwork, one hour. Requisites: courses 35, 160. Introduction to broad tradition of transformative research in education—public scholarship that aims to disrupt long-standing educational inequities in partnership with local communities. This tradition includes Youth Participatory Action Research (YPAR), Community-Based Action Research (CBAR), and other collaborative approaches that value diverse forms of expertise and knowledge. Through variety of community-engaged learning opportunities, students are supported to develop ability to analyze education

in social and political context, develop skills for effecting change, demonstrate understanding of multiple perspectives, diversity, pluralism, and social justice. Letter grading.

**M177. Creating Safe and Welcoming Schools. (4)** (Same as Public Affairs M125.) Lecture, two hours; discussion, one hour. Examination of historical context and causes of school violence, theories, and diverse perceptions of school climate and safety. Special emphasis on impact of school climate on oppressed groups and how social contexts such as poverty and how neighborhood resources influence school safety. Letter grading.

**CM178. Critical Media Literacy and Politics of Gender: Theory and Production. (4)** (Same as Gender Studies CM178.) Seminar, three hours. Corequisite: course CM178L. Use of range of pedagogical approaches to theory and practice of critical media literacy that necessarily involves understanding of new technologies and media forms. Study of both theory and production techniques to inform student analysis of media and critical media literacy projects. Concurrently scheduled with course CM278. Letter grading.

**CM178L. Critical Media Literacy and Politics of Gender: Laboratory. (2)** (Same as Gender Studies CM178L.) Laboratory, two hours. Corequisite: course CM178. Hands-on production experience as integral component of course CM178. Concurrently scheduled with course CM278L. Letter grading.

## Required Courses

**180. Orientation to Community Engagement. (4)** Seminar, four hours. First course in three-part series to satisfy community engagement requirement for Education and Social Transformation major capstone project. Introduction to conceptions and contexts of community engagement, focusing on possibilities and complexities of critical and asset-based approaches to community engagement. In preparation for students' own community engagement experiences in community organizations, early childhood centers, or schools in Los Angeles, emphasis on reflecting on positionality, identifying forms of power and privilege, and understanding relationships between systemic issues and community engagement. Letter grading.

**180W. Orientation to Community Engagement. (5)** Seminar, four hours. Requisite: English Composition 3. Limited to Education and Social Transformation majors. Not open for credit to students with credit for course 180. First course in three-part series to satisfy community engagement requirement for Education and Social Transformation major. Introduction to conceptions and contexts of community engagement, focusing on possibilities and complexities of critical and asset-based approaches to community engagement. In preparation for students' own community engagement experiences, emphasis on reflecting on positionality, identifying forms of power and privilege, and understanding relationships between systemic issues and community engagement. Satisfies Writing II requirement. Letter grading.

**181. Capstone in Education and Social Transformation. (5)** Seminar, four hours. Third course in required capstone sequence for Education and Social Transformation major. Students reflect on their coursework, community engagement experiences, and other curricular and co-curricular opportunities while completing major. Students compile portfolio that incorporates work completed through Education and Social Transformation major curriculum as well as form reflection paper where students synthesize their learning. This includes reflection on their personal development, how coursework and community engagement experience contributed to their fulfillment of learning outcomes for major, and plans for future. Students produce compelling final public presentation of their portfolio. Letter grading.

**187. Variable Topics in Education. (5)** Seminar, five hours; discussion, two hours. Limited to juniors/seniors. Variable topics course organized around disciplinary knowledge central to development of core understandings of educational and learning processes, phenomenon, policies, methods, and instruction. Development of culminating project. Consult Schedule of

Classes for topics and instructors. May be applied as core credit for Education Studies minor students. May be repeated three times for credit. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**191A-191D. Current Issues in Education. (4 each)** Seminar, four hours. Limited to juniors/seniors. Variable topics course organized on selected current issues basis, integrating field observations and readings through seminar discussions. Development of culminating project. Consult Schedule of Classes for topics and instructors. May be repeated for credit. Letter grading.

**C192A. Practicum in Intergroup Dialogue Facilitation. (4)** Seminar, three hours. Requisite: course C160. Application and further development of content and skills learned in course C160. In addition to co-facilitating weekly dialogues, students are expected to participate in weekly teaching apprentice practicum seminars. Readings, discussions of group dynamics, and one-on-one meetings with assigned coach. Fosters supportive learning environment where each student facilitator can gain more insight and knowledge into skills of dialogue facilitation and continue process of self-reflection and critical inquiry of own identities, biases, beliefs, and perspectives. Includes learning as large group and time to receive individualized consultation as co-facilitation dyad from instructor. Concurrently scheduled with course C292A. Letter grading.

**195. Community Internships in Education. (4)** Tutorial, one hour; fieldwork, eight to 10 hours. Requisite: course 180. Limited to junior/senior Education and Social Transformation majors. Internship in approved educational or community setting to be supervised by instructor. Students meet biweekly with instructor, write reflective journals, and prepare final paper. May be repeated for credit. Individual contract with supervising faculty member required. Letter grading.

**195CE. Community or Corporate Internships in Education. (4)** Tutorial, one hour; fieldwork, eight to 10 hours. Requisite: course 180. Limited to juniors/seniors. Internship in supervised preapproved K-12 settings coordinated through Center for Community Engagement. Students meet on regular basis with faculty sponsor or designee to construct series of reading and writing assignments that examine educational issues related to meaningful work at internship site. Students expected to learn ways in which urban schools are structured, organized, and operate. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**196R. Research Apprenticeship in Education. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP or letter grading.

**196XP. Community-Engaged Research Apprenticeship. (4)** Tutorial, 12 hours. Requisite: course 180. Recommended: course 160. Limited to junior/senior Education and Social Transformation majors. Research apprenticeship in community setting for upper-division students under guidance of faculty mentor.

Faculty adviser must be actively engaged in work of that community and focus of research must address needs of that community. May be repeated for credit. Individual contract required. Letter grading.

**197. Individual Studies in Education. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Education. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Historical Research and Writing. (4)** Lecture, four hours. Methods of historical research and writing for students who are or who will be engaged in research and in report or paper or thesis writing, regardless of their field of interest. S/U or letter grading.

**200B. Survey Research Methods in Education. (4)** Lecture, four hours. Requisite: course 230A. Problems of conceptualization, organization, and gathering non-experimental and quasi-experimental quantitative and qualitative data. S/U or letter grading.

**200D. Research Methods: Special Topics. (4)** Lecture, four hours. Variable topics in research methods in education. S/U or letter grading.

**M201C. History of American Education. (4)** (Same as History M264.) Discussion, three hours. History of educational thought and of social forces impinging on American education from 1880s to present. Analysis of relation between these ideas and forces, and aims and practices of American education today. S/U or letter grading.

**202. Evaluation Theory. (4)** Lecture, four hours. Prevalent evaluation theories, systems for categorizing these theories, and process of theory development in educational evaluation. S/U or letter grading.

**204A. Introduction to Education and Social Sciences. (4)** Lecture, four hours. Interdisciplinary course intended to introduce students to study of educational issues, texts, and movements of thought through social sciences and comparative perspectives. S/U or letter grading.

**204B. Introduction to Comparative Education. (4)** Lecture, four hours. Examination of conceptual and methodological questions underlying comparative education. Particular attention to development of field and to styles of social analysis that may be applied to comparative and cross-national studies in education. S/U or letter grading.

**204C. Education and National Development. (4)** Lecture, four hours. Designed for graduate students. Analysis of various social sciences perspectives and methodologies (including modernization, dependency, Marxist, neo-Marxist, liberation theology, and world-system theories of change and development) and changing notions of role of education in development of less-industrialized countries of world. S/U or letter grading.

**204D. Minority Education in Cross-Cultural Perspective. (4)** Lecture, four hours. Historical and contemporary analyses of educational policies with regard to ethnic, religious, and linguistic minorities through selected national and international case studies. Introduction to cross-cultural education in representative countries in relation to social, political, and economic systems. S/U or letter grading.

**204E. International Efforts in Education. (4)** Lecture, four hours. Designed for graduate students. Critical analysis of complex world of development cooperation, with particular reference to bilateral and multilateral efforts in education. S/U or letter grading.

**204F. Nonformal Education in Comparative Perspective. (4)** Lecture, four hours. Comparative and international study of organized and systematic educational activity for children, youth, and adults carried on outside of schools. Types of programs include, among

others, consciousness raising, community action, skills training, literacy, and extension programs. S/U or letter grading.

**206A. Philosophy of Education: Introduction. (4)** Lecture, four hours. Systematic introduction to field, indicating ways in which philosophy serves to elucidate educational aims, content, methods, and values. S/U or letter grading.

**C207. Politics of Education. (5)** Lecture, two hours; discussion, two hours. Political dimensions of education institutions as organizations. Relationships between education institutions and political institutions in society. Political theory as foundation for public policy analysis; interest groups in education policy formation and implementation; and focus on Freirean pedagogy. Concurrently scheduled with course C111. S/U or letter grading.

**208A. Perspectives on Sociology of Education. (4)** Lecture, four hours. Sociological perspectives on current issues in educational policy and practice, including desegregation, decentralization, equality of educational opportunity, structure of educational organization, teacher/student relationships, reform in education at elementary, secondary, postsecondary levels. S/U or letter grading.

**208B. (Im)migrant Youth, Ethnography, and Education. (4)** Seminar, four hours. Exploration of experiences of immigrant youth in U.S. schools, with focus on language, culture, and educational equity in urban settings. Letter grading.

**209A. History of Higher Education. (5)** (Formerly numbered C209A.) Lecture, four hours. Exploration of major eras in history of higher education. Topics include issues concerning access, diversity, parental choice, cultural literacy, teacher empowerment, and role of popular media. S/U or letter grading.

**209C. Research and Evaluation in Higher Education. (4)** Lecture, four hours. Development of conceptual and practical understanding of research and evaluation in higher education. Topics include basic statistics, survey design, data analysis, assessment issues, and research proposal writing. Letter grading.

**211A. Educational and Psychological Measurement: Underlying Theory and Practice. (4)** Lecture, four hours. Requisite: course 230A. Measurement theory as applied to educational and psychological testing, with focus primarily on classical test theory, reliability estimation, and test construction and selection. S/U or letter grading.

**211B. Educational and Psychological Measurement: Generalizability Theory. (4)** Lecture, four hours. Requisites: courses 230A, 230B, 230C. Basic and advanced topics in use of generalizability theory to address problems in measurement. S/U or letter grading.

**211C. Introduction to Factor Analysis and Item Response Theory. (4)** Seminar, three hours. Requisites: course 230B or equivalent, and one course in education measurement (course 200B, 211A, 211B, or equivalent). Introduction to linear factor analysis (FA) and item response theory (IRT) models and their uses in research and assessment. Topics include specification, estimation, evaluation, and interpretation of exploratory and confirmatory models. Students use FA and IRT methods to perform range of basic data analyses. S/U or letter grading.

**212A. Learning and Education. (4)** Lecture, four hours. Models of learning, modeling, reinforcement, motivation, encoding, memory, transfer, individual differences, and instruction. S/U or letter grading.

**212B. Motivation and Affect in Educative Process. (4)** Lecture, four hours. Review of theoretical and empirical literature on motivational factors in school settings and conditions for acquisition of affective outcomes. S/U or letter grading.

**217A. Social Development and Education. (4)** Seminar, four hours. Biological and familial, school, and other influences on children; development in context of current research and theoretical models; consideration of theoretical and methodological research on family, peer group, and school; application of developmental theory and research to educational practice. S/U or letter grading.

**217B. Cognitive Development and Education. (4)** Lecture, two hours; discussion, two hours. Designed for graduate students. Critical review of theories and research in cognitive development, with focus on work of Piaget and Vygotsky, and relation of this work to issues in educational practice. S/U or letter grading.

**M217C. Personality Development and Education. (4)** (Same as Psychology M245.) Lecture, four hours. Review of research and theory of critical content areas in personality development that bear on school performance: achievement motivation, self-concept, aggression, sex differences, empathy, and other social behaviors; review of status of emotional behavior in personality theory and development. S/U or letter grading.

**217D. Language Development and Education. (4)** Lecture, four hours. Research and theory on how children develop their first language; sociolinguistic and psycholinguistic issues in preschool and primary years; bilingual and dialectical issues. S/U or letter grading.

**M217F. Adolescent Development. (4)** (Same as Psychology M242G.) Seminar, four hours. Designed for graduate students. Review of recent research on physical, cognitive, social, and psychological development during second decade of life. Topics include pubertal development, changes in parent/adolescent relationships, role of peers, identity development, high-risk behaviors, stress and coping, and school adjustment. Letter grading.

**219. Laboratory: Advanced Topics in Research Methodology. (4)** Laboratory, four hours. Provides assistance in design of research and interpretation of data to advanced students from other divisions. Coverage of special topics not included in other courses on research methods. S/U or letter grading.

**220A. Inquiry into Schooling: Organization and Change. (4)** Lecture, four hours. Critical analysis of issues in reconstruction of schooling; concepts of function and structure of schooling; organization theory; systems approaches in analysis of organization development and change. S/U or letter grading.

**221. Computer Analyses of Empirical Data in Education. (4)** Lecture, two hours; laboratory, two hours. Requisites: courses 209C (section 1), 230A. Designed to develop conceptual and technical skills needed for designing and executing empirical research utilizing statistical packages. Each student conducts two original studies. Equal emphasis on techniques of data analysis and interpretation of results. S/U or letter grading.

**222A. Introduction to Qualitative Methods and Design Issues in Educational Research. (4)** Lecture, three hours; discussion, one hour. Introductory course for students interested in epistemology, theories, and styles of qualitative research in educational settings. Theory and practice of naturalistic, qualitative research design covered in second half of course. Letter grading.

**222B. Participant-Observation Field Methods. (4)** Lecture, two hours; discussion, two hours. Requisite: course 222A. First of two courses on participant-observation field methods. Key skills (e.g., observation, recording, interviewing, role management, data storage) learned through classroom lectures and simulations, and by conducting actual field-based research project. Letter grading.

**222C. Qualitative Data Reduction and Analysis. (4)** Lecture, two hours; discussion, two hours. Requisite: course 222B. Continuation of fieldwork project started in course 222B, with focus on practical skills and conceptual/methodological issues involved in reducing and analyzing qualitative data. Letter grading.

**222D. Qualitative Inquiry: Special Topics. (4)** Lecture, four hours. Special topics course on some field or aspect of qualitative inquiry. Topics may include classroom ethnography, advanced ethnographic writing and/or multimedia design, discourse analysis, and microethnography of social interaction. S/U or letter grading.

**223. Procedural Issues in Evaluation. (4)** Lecture, four hours. Assessment methodologies appropriate for evaluation problems. Writing evaluation proposals, developing program monitoring procedures, selecting

appropriate evaluation design strategies, coping with ethical considerations in evaluation, framing decision context, and reporting evaluation results. Letter grading.

**224. Leading Change through Evaluation: Methods of Continuous Improvement. (4)** Lecture, four hours. Introduction to disciplined inquiry and continuous improvement methods as means for driving change in complex systems. Introduction to organizational learning and change, and adult learning concepts. Focus on disciplined inquiry as strategy to lead change, whether for individuals, teams, or organizations, and its application in education, health care, and other disciplines. S/U or letter grading.

**225A. Issues in Education of Exceptional Individuals. (4)** Lecture, four hours. Designed for graduate students. Analysis of major research regarding contemporary trends, issues, and programs for exceptional individuals; consideration of commonalities and differences among exceptional individuals. S/U or letter grading.

**227C. Research on Behavioral and Social Characteristics of Exceptional Individuals. (4)** Lecture, four hours. Requisite: course 227B. Analysis of social and emotional development of exceptional individuals and development of social competence in special education programs. S/U or letter grading.

**229. Seminar: Special Topics in Urban Schooling. (4)** Seminar, four hours. Research on selected topics in fields of administration, policy, curriculum, and teaching studies and on conceptualization of hypotheses and research programs on division topics and issues. Letter grading.

**CM229B. Narratives of Justice: Disrupting School-to-Prison Pipeline—Arts, Activism, and Agency. (4)** (Same as African American Studies CM213XP) Lecture, four hours; discussion, one hour. Exploration of policies and practices, art and activism, and other forms of agency engaging school-to-prison pipeline. Concurrently scheduled with course CM125XP. S/U or letter grading.

**230A. Introduction to Research Design and Statistics. (4)** Lecture, four hours. Designed for graduate students. Key concepts and issues in design and conduct of social sciences research. Introduction to descriptive statistics and fundamentals of statistical inference. Letter grading.

**230AL. Introduction to Research Design and Statistics: Computer Laboratory. (1)** Laboratory, one hour. Corequisite: course 230A. Computer data analysis laboratory for introductory research design and statistics. Instruction in SPSS, Stata, and SAS statistical analysis packages. S/U grading.

**230B. Linear Statistical Models in Social Science Research: Multiple Regression Analysis. (4)** Lecture, four hours. Requisite: course 230A or passing score on screening examination. Solid and comprehensive training in regression-based methods for analyzing quantitative social science data. Letter grading.

**230BL. Linear Statistical Models: Computer Laboratory. (1)** Laboratory, one hour. Corequisite: course 230B. Computer data analysis laboratory for linear statistical models. Instruction in SPSS, Stata, SAS, and other relevant statistical analysis packages. S/U grading.

**230C. Linear Statistical Models in Social Science Research: Analysis of Designed Experiments. (4)** Lecture, four hours. Requisites: courses 230A, 230B. Solid and comprehensive training in experimental design and analysis methods, especially use of analysis of variance methods. S/U or letter grading.

**230CL. Linear Statistical Models for Experimental Research: Computer Laboratory. (1)** Laboratory, one hour. Corequisite: course 230C. Computer data analysis laboratory for linear statistical models for experimental research. Instruction in SPSS and SAS statistical analysis packages. S/U grading.

**231A. Toolkit for Quantitative Methods Research. (4)** Lecture, four hours. Requisites: courses 230A, 230B, 230C. Elementary probability. Working knowledge with calculus. Mathematical and statistical results useful for advanced quantitative methodology research. Matrix algebra. Random vectors. Multivariate

distribution theory. Likelihood and Bayesian estimation and inference. Linear and generalized linear models. Simulation. S/U or letter grading.

**M231B. Factor Analysis. (4)** (Same as Psychology M253.) Lecture, four hours. Requisites: courses 211B, 231A. Exploratory factor analysis, rotations, confirmatory factor analysis, multiple-group analysis. S/U or letter grading.

**231BL. Factor Analysis: Computer Laboratory. (1)** Laboratory, one hour. Corequisite: course M231B. Computer data analysis laboratory for exploratory and confirmatory factor analysis. Instruction in CEFA, LISREL, and other relevant statistical analysis packages. S/U grading.

**231C. Advanced Item Response Theory. (4)** (Formerly numbered 211C.) Lecture, four hours. Requisites: courses 231A, M231B. Review of standard item response theory models, multidimensional models, multiple group models and models with covariates, item and person parameter estimation, differential item functioning analysis, testing model fit, linking and scale alignment, computerized adaptive testing. S/U or letter grading.

**231D. Advanced Quantitative Models in Nonexperimental Research: Multilevel Analysis. (4)** Lecture, four hours. Requisites: courses 230B, 230C. Examination of conceptual, substantive, and methodological issues in analyzing multilevel data (i.e., on individuals in organizational settings such as schools, corporations, hospitals, communities); consideration of alternative analytical models. Letter grading.

**M231E. Statistical Analysis with Latent Variables. (4)** (Same as Statistics M244.) Lecture, three hours. Requisites: courses 231A, M231B. Introduction to general latent variable modeling framework. Important special cases of this framework include confirmatory factor analysis, structural equation models, item response models, latent class models, and multilevel models, among others. Topics include discussions of general statistical and computational framework, model formulation, identification, estimation, and testing. Letter grading.

**233. Professional Writing in Education. (4)** Lecture, four hours. Intended to assist in professional development as writers, with focus on style and organization, scholarly genres, modes of discourse, and broader issues of conceptualization and method. Letter grading.

**234. Critical Perspectives on Economic Approaches to Education. (4)** Seminar, four hours. Introduction to concepts and principles in economics of education using critical perspective. Overview of evolving relationship between education and economics, including growing use of education as economic policy tool and increased role of economic principles in internal functioning of educational systems. S/U or letter grading.

**235. Comparative Political Economy of Education and Skills. (4)** Seminar, four hours. Use of political economy of education perspective for exploring, at international and comparative levels, link between alternative models of governing, providing and financing education and training systems and impact of alternatives on outcomes such as unequal chances to learn, types of skill formation, and well-being. S/U or letter grading.

**237. Law and Urban Education. (4)** Lecture, four hours. Examination of recent legal controversies that may impact ability of urban educators to meet needs of students in multicultural society, with special emphasis on such equity-related issues as desegregation, school finance, standardized testing, and rights of language minority students. Letter grading.

**238. Cross-National Analysis of Higher Education. (4)** Lecture, four hours. Comparative study of national systems of higher education: their division of work, basic values, structures of authority, modes of national integration, and types of change. S/U or letter grading.

**240. Immigrant Children and Education. (4)** Seminar, four hours. Examination of immigrant child and youth experience, with primary focus on educational outcomes. Topics include historical changes in experiences of immigrant youth, dynamics of immigrant families, cultural, ethnic, and socioeconomic status-related influences in immigrant youths' adjustment, and school-family connections. Letter grading.



**241. Conceptual Frameworks for Research in Urban Education.** (4) Seminar, four hours. Examination of diverse set of foundational theories for educational researchers concerned with understanding, designing, and studying transformative, culturally sustaining, and democratic educational practices. Includes both founding parents and neo perspectives in emancipatory/liberatory pedagogy, sociocultural/sociocultural activity theory, critical race theory, cultural modeling/culturally sustaining pedagogy and contributions from learning sciences, indigenous, post-colonial, sociological, political-economic, and anthropological approaches to educational research. Attends both to original ideas and how they have changed over time, as well as how faculty in the Urban Schooling program draw on these frameworks for their research. Letter grading.

**242. Learning, Culture, and Schooling.** (4) Seminar, four hours. Education typically refers to explicit efforts by experienced members of society to instruct new members in acceptable ways of thinking and acting in that society. Study of how learning sciences—broadly, social sciences interested in study of learning, with particular focus on variants of psychology—attempt to explain human cognitive development, and how people learn to think and act. Investigation of how accounts of learning and development can be, and have been, used to inform instruction in school. Focus on schools primarily as means to examine how theoretical perspectives on learning can inform praxis and scholarship or educational justice and equity. Letter grading.

**243. Reflections on Methods in Social Sciences.** (4) Lecture, four hours. Preparation: two research methods courses. Fundamental issues surrounding use of methods in social sciences, including issues in philosophy of social sciences, relationship between theory and facts, ontological status of constructs, cognition and social research, sources of evidence in ethnography, research and social policy. Letter grading.

**C244. Theory and Practice of Intergroup Dialogue: Building Facilitation Skills.** (4) Seminar, four hours. Topics include social psychology of intergroup relations, intercultural and dialogic communication theories, methods for reconciling and bridging differences in schools and communities, research and evaluation of intergroup dialogues and other educational methods for improving intergroup relations, and core competencies for planning, delivering, and evaluating intergroup dialogues in multicultural settings. While providing foundational grounding in theory and pedagogy of intergroup dialogue, particular attention to relationships between intergroup dynamics, structural inequalities, systems of privilege and oppression, and mental health outcomes and disparities among populations. Concurrently scheduled with course C124. Letter grading.

**246A. Decision Analysis and Advanced Computer Methods for Educational Policy and Planning.** (4) Seminar, four hours. How information technology and decision analysis impact K-12 schooling, higher education, and technical training/workplace settings. With research paper, oral presentation, and two research briefs, students can pursue decision analysis areas of special interest to their professional and career objectives. S/U or letter grading.

**248. Seminar: Special Topics in Child Development and Education.** (4) Seminar, four hours. Content varies; limits of investigation set by individual instructor. S/U or letter grading.

**249. Theories and Methods in Developmental Science.** (4) Lecture, three hours. Broad overview of theories and methods used to study development of children in context. Introduction to foundational theories in field of developmental science, and exposure to range of methodological approaches—ranging from sources of data to analytic approaches—that researchers use to characterize developmental change. S/U or letter grading.

**250A. Fundamentals of U.S. Higher Education System.** (4) Lecture, four hours. Designed for graduate students. Two-course sequence designed to orient new students to issues, ideas, and literature that con-

stitute this division, with emphasis on underlying social and political issues that shape higher education and organizational change. Letter grading.

**250B. Organizational Analysis of Higher Education.** (4) Lecture, four hours. Designed for graduate students. Two-course sequence designed to orient new students to issues, ideas, and literature that constitute this division, with emphasis on underlying social and political issues that shape higher education and organizational change. Letter grading.

**250C. Theoretical Frameworks of Higher Education.** (4) Lecture, four hours. Designed for graduate students. Overview of various social sciences theories used to analyze institutions and issues of contemporary higher education. Explanation of how theory and methodology affect research design and framing of research questions in studies of higher education. Letter grading.

**252B. Educational Enterprise.** (4) Lecture, two hours; discussion, two hours. Requisite: course 252A. Limited to Educational Leadership Program students. Use of structural, human resource, political, and symbolic frames to study K-16 education, with focus on educational environments, organizations, and curriculum and instruction. Letter grading.

**M253A. Seminar: Current Problems in Comparative Education.** (4) (Same as Gender Studies M253A.) Seminar, four hours. Examination of some of most influential critical theorists, including Marx, Nietzsche, Freud, Marcuse, Foucault, Fanon, and de Beauvoir and their contributions to critique of contemporary education, society, and politics. S/U or letter grading.

**253B. Seminar: African Education.** (4) Seminar, four hours. Designed for graduate students. Contemporary issues in African educational systems, including questions of access and equity, quality and efficiency, relevance and responsiveness, links between schools and communities, and policy and practice in education. S/U or letter grading.

**253C. Seminar: Asian Education.** (4) Seminar, four hours. S/U or letter grading.

**253D. Seminar: Latin American Education.** (4) Seminar, four hours. S/U or letter grading.

**253G. Seminar: Asian Americans and Education.** (4) Seminar, four hours. Basic issues and topics related to Asian Americans in field of education. Examples of issues and topics include Asian Americans and community, socioeconomic status, education-to-work transition, language and culture question. S/U or letter grading.

**253H. Seminar: Chicanos/Hispanics and Education.** (4) Seminar, four hours. Basic issues and topics related to Chicanos and other Hispanic groups in education. Review of literature on specific educational levels and Chicano/Hispanic student progress (e.g., early childhood, elementary, higher education; specific topics: assessment, access, tracking, segregation; implications for schooling). S/U or letter grading.

**253I. Education and Social Change in Middle East and Islamic World.** (4) Seminar, four hours. Critical and analytic examination of historical and current role of traditional and modern (Western) education in affecting social, political, and economic changes in countries of Middle East and Islamic world (including Pacific Rim, South and Central Asia). S/U or letter grading.

**254. Seminar: History of Education.** (4) Seminar, four hours. Requisite: course M201C. Study of current movements in historiography of education and critical reading of texts in history of education. S/U or letter grading.

**255A-255B-255C. Seminars: Special Topics. (4-4-4)** Seminar, four hours. May be repeated for credit. S/U or letter grading. **255A.** Measurement; **255B.** Design; **255C.** Data Analysis.

**256A. Seminar: Special Topics in School Learning.** (4) Seminar, four hours. S/U or letter grading.

**256B. Seminar: Special Topics in Development.** (4) Seminar, four hours. S/U or letter grading.

**259. Administration of International Programs in Higher Education.** (4) Seminar, four hours. Introduction to theory and practice of internationalization in U.S. higher education, looking at meaning of concept

of comprehensive internationalization across campus, issues of effective leadership and management, and individual aspects of internationalization, including study abroad program development and implementation, international student recruitment and support services, international curriculum—area and language studies, English as a second language programs, international internships and careers, faculty development in international travel and research, international partnerships/branch campuses, international development and grant projects, international alumni, distance learning/massive open online courses (MOOCs)/hybrid models. Letter grading.

**M260A. Introduction to Programming and Data Management.** (4) (Formerly numbered 260A.) (Same as Public Policy M276A.) Lecture, three hours. Fundamental skills of data management. Development of strong foundation in R programming language. R is most popular language for statistical analysis and one of most popular languages for data science applications (e.g., web-scraping, interactive maps, network analysis). Students become proficient in data management and R programming through weekly problem sets, completed in groups. No prior experience with R required. S/U or letter grading.

**M260B. Fundamentals of Programming.** (4) (Formerly numbered 260B.) (Same as Public Policy M276B.) Lecture, three hours. Recommended requisite: course M260A. Second course in programming/data science sequence designed for students who do not have programming background. Uses primarily R programming language. Organized around practical programming skills/concepts that are fundamental across modern object-oriented programming languages (e.g., Python, Javascript). Topics include organizing files, folders, and scripts; reading (importing) and writing (exporting) data; using Git and GitHub for version control and collaboration; iteration (e.g., loops); conditional execution; writing functions; strings and regular expressions. These general programming skills are prerequisite for flashier data science applications (e.g., web-scraping, interactive maps). Students become proficient in programming skills/concepts through weekly problem sets, completed in groups. S/U or letter grading.

**261E. Higher Education Seminar: Diversity Issues and Research Perspectives.** (4) Seminar, four hours. Examination of how racial diversity and its related dynamics have transformed and at same time been reshaped by institutions of higher education, with focus specifically on student experiences, curricula, institutional climate, educational policies, and administrative practices. Letter grading.

**261F. Seminar: Cognitive and Personal Development of College Students.** (4) Seminar, four hours. Examination of cognitive development of college students; issues of personal and social development, including leadership, and interpersonal relations and skills. S/U or letter grading.

**262B. Seminar: Reading.** (4) Seminar, four hours. S/U or letter grading.

**263. Seminar: Higher Education.** (4) Seminar, four hours. May be repeated for credit. S/U or letter grading.

**264. Seminar: Teacher Education.** (4) Seminar, four hours. Research, issues, and practices in preservice and in-service teacher preparation, evaluation, and certification. Social, philosophical, and methodological issues and current trends in America and abroad. Opportunities to observe, participate in, and discuss teacher education programs. S/U or letter grading.

**265. Higher Education Policy.** (4) Lecture, four hours. Requisites: courses 250A, 250B. Understanding public policy for higher education requires understanding of both issues and policy process. Review of major topics on which U.S. government is active, as well as key actors and their influence. Letter grading.

**M266. Feminist Theory and Social Sciences Research.** (4) (Same as Gender Studies M266.) Lecture, four hours. Examination of how diverse feminist social theories of last quarter century have both challenged and strengthened conventional social sciences theories and their methodologies. Introduction especially to feminist standpoint theory, distinctive critical theory methodology now widely used in social sciences. Letter grading.

**270. Introduction to Cultural Studies. (4)** Lecture, four hours. Investigation of current trends in cultural studies through examination of different methods of cultural interpretation, seminal texts in cultural studies, and practical criticism engaging popular artifacts of media culture. Emphasis on developing critical media literacy as goal of cultural studies. Letter grading.

**272. Case-Study Research in Education Policy and Practice. (4)** Discussion, four hours. Use of case-study methods in education research, providing opportunities for applying methodological skills to actual case-study research projects. Focus on single and multiple case studies that investigate issues in education policy and practice. Letter grading.

**274. Science, Technology, and Social Research after Eurocentrism. (4)** Lecture, four hours. Philosophy of natural sciences for social scientists that examines challenges to conventional research assumptions raised by multicultural and postcolonial science and technology studies that have emerged since World War II. Focus on sciences and technologies in third-world development projects, comparative ethnoscience movements, and new theories of knowledge and how to do maximally objective research emerging from these literatures. Letter grading.

**275. Race and Education. (4)** Seminar, four hours. Designed for graduate students. Examination of role of race in educational policymaking. Exploration of broad interpretation of how schools contribute to racial stratification and inequality by linking sociological and sociopsychological theories of race, racial attitudes, and conflict to historical policy analysis. Letter grading.

**276. Contemporary Theories of Writing. (4)** Lecture, four hours. Review of current theories of writing and literacy research and examination of relationships among writing and literacy, culture, and human development. In particular, examination of history of writing research over last three decades as part of broader intellectual history. Letter grading.

**CM278. Critical Media Literacy and Politics of Gender: Theory and Production. (4)** (Same as Gender Studies CM278.) Seminar, three hours. Corequisite: course CM278L. Use of range of pedagogical approaches to theory and practice of critical media literacy that necessarily involves understanding of new technologies and media forms. Study of both theory and production techniques to inform student analysis of media and critical media literacy projects. Concurrently scheduled with course CM178. Letter grading.

**CM278L. Critical Media Literacy and Politics of Gender: Laboratory. (2)** (Same as Gender Studies CM278L.) Laboratory, two hours. Corequisite: course CM278. Hands-on production experience as integral component of course CM278. Concurrently scheduled with course CM178L. Letter grading.

**280A. Seminar: Selected Topics in Special Education. (2 to 6)** Seminar, two to six hours. Focus on research and clinical problems in special education. Introduction to range of clinical services and research strategies. Exploration of current topics in field. S/U or letter grading.

**281. College Access Seminar. (4)** Seminar, two hours; discussion, two hours. Knowledge of changing dynamics of college access at individual, organizational, and field levels and understanding of links between K-12 and postsecondary stratification and how educational advantage and disadvantage accumulates throughout education and affects equity in college access. Letter grading.

**284. Critical Theory in Education: Power, Politics, and Liberation. (4)** Lecture, four hours. Designed for graduate students. Introduction to major themes, issues, and methodologies within what has come to be known as critical and educational tradition, including some major theoretical writings in liberal, neo-Marxist, left liberal/postmodernist, and Marxist subfields of critical education tradition. Letter grading.

**285. Education and Law. (4)** Lecture, four hours. Examination of recent high-profile, education-related disputes at both K-12 and higher education levels. Exploration of topics including campus safety and privacy, student freedom of expression, technology-related issues and concerns, religion in schools, cyberbullying,

and accountability for off-campus behavior. Examination of access to quality education by analyzing disputes arising at every stage of education process, from issues regarding practices that may engender school-to-prison pipeline to ongoing legal battles regarding race-conscious policies, Every Student Succeeds Act, K-12 teacher tenure, school sports, unmet needs of English language learners, misuse of special education system, impact of burgeoning charter school movement, and rights of undocumented students. Concurrently taught with Law 282. Letter grading.

**M286. Language, Culture, and Education. (4)** (Same as Anthropology M256.) Seminar, three hours. Examination of ongoing movement to reclaim and reimagine schooling as site to sustain indigenous, Black, Latinx, Asian and Pacific Islander communities, including ways these identities/memberships intersect with gender identity and expression, sexuality, dis/ability, language, migration, place, class, and more. For centuries of teaching and learning, communities have sought to push against ways nation-state schools have devalued communities, their lifeways, and their lives. Most recently, this movement is indebted to several decades of research, theory, and practice in asset or strength-based pedagogy tradition. Work on culturally sustaining pedagogy (CSP) has joined these decades (and centuries) of work to offer vision of school that seeks to perpetuate and foster—to sustain—linguistic, literate, and cultural pluralism as part of schooling for positive social transformation and revitalization. S/U or letter grading.

**287. Research on Language Issues in Education. (4)** Seminar, four hours. Roles of language(s) in formal and informal education, including study of opportunities and challenges offered by language variation found in schools. Examination of language acquisition theories along with those of language ideologies, language policies, and multilingualism. Letter grading.

**288. Research Apprenticeship Course. (2)** Discussion, two hours. Course facilitates mentorship model of training PhD students in education, with focus on development of graduate student research topics. Assignment of common readings related to these topics; students have opportunity to offer and receive feedback. May be repeated for credit. S/U grading.

**C292A. Practicum in Intergroup Dialogue Facilitation. (4)** Seminar, three hours. Requisite: course C244. Application and further development of content and skills learned in course C244. In addition to co-facilitating weekly dialogues, students are expected to participate in weekly teaching apprentice practicum seminars. Readings, discussions of group dynamics, and one-on-one meetings with assigned coach. Fosters supportive learning environment where each student facilitator can gain more insight and knowledge into skills of dialogue facilitation and continue process of self-reflection and critical inquiry of own identities, biases, beliefs, and perspectives. Includes learning as large group and time to receive individualized consultation as co-facilitation dyad from instructor. Concurrently scheduled with course C192A. Letter grading.

**295. Freire. (4)** Seminar, four hours. Requisite: course C125 or C207 or prior knowledge of Freire's work. Analysis of intellectual production of Paulo Freire linked to social context in which it took place. Study of his life and work in five phases: Brazilian Experience (1921 to 1964); Chilean Experience, where he published *Education as Practice of Freedom and Pedagogy of Oppressed*, as well as other lesser-known works, while also devoting most of this period to empirical research in literacy training (1964 to 1969); his work at Harvard, and then World Council of Churches in Geneva (1970 to 1980), including his consulting with postcolonial revolutionary governments in Africa; his return to Brazil and his work as Secretary of Education in São Paulo (1989 to 1992); and his global travels from 1980 until his death in 1997. Focus on work left incomplete before his death (including ecopedagogy and citizen's schools), and by implication his analyses, critiques, and impact in world, his methodology of generative word, and comparisons with other theoretical referents. Letter grading.

**296A-296D. Seminars: Research Topics in Education. (2 each)** Seminar, three hours. Advanced study and analysis of current topics in education. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**296G. Research Topics in Education: Legal Aspects of Educational Management. (2)** Lecture, two hours. Examination and analysis of legal issues, especially as they apply to school organizations. Letter grading.

**296H. Research Topics in Education: Organizational Theory. (2)** Lecture, two hours. Examination and analysis of organizational theories, especially as they apply to school organizations. Letter grading.

**296I. Theory in Educational Inquiry. (2)** Seminar, two hours. Theory and its application to study of educational settings and institutions. Examination of major paradigms, important schools of thought, and particular theoretical areas and theories within field of education, with focus both on conceptually and empirically based works as means for grounding discussions of theory and application. Letter grading.

**296J. Introduction to Survey Research Methods. (2)** Seminar, two hours. Introduction to conceptual and methodological issues involved in survey-based research in education, offering structured opportunity to practice various practical aspects of survey (instrument) development. Questionnaire design, format, and delivery; question writing, pretesting, and testing; and sample design and considerations, nonresponse, measurement error, and data preparation. Letter grading.

**296K. Research Design. (2)** Seminar, two hours. Effective educational leaders require ability to accurately diagnose educational problems before jumping to proposed solutions. Study designs must include systematic ways to collect and analyze data, as well as minimize potential threats to validity of data and analysis. Designed to equip students with tools needed to design research studies that address specific real-world educational problems. Basic understanding of research designs as strategies for investigating educational problems, such as types of questions that can be answered appropriately with qualitative and mixed methods studies, design components, planning for fieldwork and data collection, sampling, ethics, and credibility. Letter grading.

**299A-299B-299C. Research Practicum: Education. (4-4-4)** Clinical, to be arranged. May be repeated for credit. Letter grading.

**301. Introduction to Information and Presentation Tools. (2)** Laboratory, two hours. Limited to credential program students. Sequence of laboratory sessions providing preservice teachers with introduction to education technology infrastructure and classroom presentation tools. Introduction to resources and services, e-mail functions and Internet, and presentation software and multimedia elements. S/U grading.

**305. Health Education for Teachers. (2)** Lecture, two hours. Limited to Teacher Education Program students. Teaching/learning process as applied to personal and community health. Topics include psychoactive drugs (alcohol, tobacco, and narcotics), human sexuality, nutrition, community health resources, and analysis of state's health framework. S/U grading.

**309. Methodologies for English Language Learners. (2)** Laboratory, two hours. Limited to credential program students. Pedagogy for bilingual and English language learners. Discussion of competencies needed by all content area teachers of English language, including strategies for teaching in and through English. Topics include educational issues, organizational approaches, and communicative approach; strategies and activities. Letter grading.

**315. Principles and Methods for Teaching Reading for Multiple Subject Instruction. (3)** Lecture, three hours. Reading instruction in elementary schools. Analysis of reading problems and programs; study of relationships between language/culture/cognition and reading. Examination and development of instructional programs; analysis and practice of alternative instructional methods. Observation and participation in schools. Letter grading.

**315B. Elementary Literacy Methods. (3)** Seminar, three hours. Theoretical principles and pedagogical strategies necessary for developing and maintaining balanced comprehensive literacy program for elementary students. Examination of how children learn to read, write, and use language. Letter grading.

**318A. Integrated Methods for Elementary Teachers. (3)** Lecture, three hours. Examination and development of instructional programs and analyses and practices of instructional methods for teaching K-6 content, with emphasis on interdisciplinary approach that integrates content areas. Aligned with California state frameworks and California content standards for grades K-12 that address needs and interests of diverse students. Letter grading.

**318B. Integrated Methods for Elementary Teachers. (4)** Lecture, four hours. Examination and development of instructional programs and analyses and practices of instructional methods for teaching K-6 content, with emphasis on interdisciplinary approach that integrates content areas and infuses literacy, technology, and strategies for second language learners. Aligned with California state frameworks and California content standards for grades K-12, including English Language Development Standards—all of which address needs and interests of diverse students. Letter grading.

**318C. Integrated Methods for Elementary Teachers. (3)** Lecture, three hours. Examination and development of instructional programs and analyses and practices of instructional methods for teaching K-6 content, with emphasis on interdisciplinary approach that integrates content areas and infuses literacy, technology, and strategies for second language learners. Aligned with California state frameworks and California content standards. Letter grading.

**319. Mathematics Methods. (3)** Lecture, three hours. Details of children's mathematics thinking and use of that information as way to ground learning about teaching of mathematics. Letter grading.

**320A-320B-320C. Secondary Content and Literacy Methods. (4-3-3)** Lecture, three hours. Examination and development of instructional programs and analyses and practices of instructional methods for teaching content in grades 7-12. Emphasis on interdisciplinary approach that integrates content areas and infuses literacy, technology, and strategies for second language learners. Methods courses are aligned with California state frameworks and California content standards for grades K-12, including English Language Development Standards—all of which address needs and various interests of diverse students. Letter grading.

**321A. Secondary Content and Literacy Methods in Ethnic Studies. (3)** Lecture, three hours. Examination and development of instructional programs, analyses, and practices of instructional methods for teaching ethnic studies in grades 7 through 12, with emphasis on interdisciplinary approach that integrates content areas and infuses literacy, technology, and strategies for second language learners. Methods courses align with California state frameworks and California content standards for grades K through 12, including English Language Development Standards—all of which address needs and various interests of diverse students. Ethnic studies curriculum focuses on Chicano studies, African American/Black studies, indigenous studies, Asian American studies, and gender/sexuality studies and how to develop curriculum focused on local histories in urban classrooms. S/U grading.

**321B. Ethnic Studies Curriculum Development. (3)** Lecture, three hours. Examination and development of theoretical frameworks around curriculum development for ethnic studies in grades 7 through 12, with emphasis on interdisciplinary approach that integrates content areas and infuses literacy, technology, and strategies for second language learners. Methods courses align with California state frameworks and California content standards for grades K through 12, including English Language Development Standards—all of which address needs and various interests of diverse students. Ethnic studies curriculum focuses on Chicano studies, African American/Black studies, indigenous studies, Asian American studies,

gender/sexuality studies, and how to develop curriculum focused on local histories in Los Angeles urban classrooms. S/U grading.

**328. Principles and Methods for Teaching Mandarin Effectively. (2 to 6)** Lecture, two to six hours. Emphasis on proficiency-based foreign language teaching methods incorporating language assessment skills, modeling, hands-on experiences, and development of teaching and teacher-training materials. S/U grading.

**330A. Observation and Participation. (2 to 6)** Site-based fieldwork, 10 to 15 hours. Students are assigned to school sites with racially, culturally, and linguistically diverse student populations. Throughout observation and participation period, students analyze effective strategies for achieving learning for all students, including sociocultural approaches and appropriate use of educational technology. S/U grading.

**330B. Student Teaching. (4 to 8)** Site-based fieldwork, 10 to 20 hours. Requisite: course 330A. Students are assigned to student teach in designated school sites with racially, culturally, and linguistically diverse student populations. Throughout student teaching period, students as novice teachers plan, implement, and assess daily lessons and units, as well as actively engage in reflecting on issues specific to school/community relations. S/U grading.

**330C. Student Teaching. (4 to 8)** Site-based fieldwork, 10 to 30 hours. Requisite: course 330A. Students are assigned to student teach in designated school sites with racially, culturally, and linguistically diverse student populations. Throughout student teaching period, students as novice teachers plan, implement, and assess daily lessons and units, as well as actively engage in reflecting on issues specific to school/community relations. Increased daily responsibilities. S/U grading.

**330D. Classroom Residency and Teaching. (4)** Site-based fieldwork, 40 hours. Students are employed by local school districts to teach as residents in designated school sites with racially, culturally, and linguistically diverse student populations. Students also work in collaborative teams through Teacher Education Program to initiate change project in their local school and/or complete case study on project. S/U grading.

**360A-360B-360C. Novice Seminars. (2-2-2)** Seminar, two hours. Analysis of basic principles and concepts of planning, conducting, and evaluating units of curriculum and instruction. Emphasis on study and utilization of constructivist strategies and their application in elementary and secondary schools. Examination of different methods of computer literacy and teaching subject matter. Students may conduct ethnographic inquiry of local community of their designated partnership district. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**390A-390B-390C. Colloquium Series: Human Development and Psychology. (1-1-1)** Seminar, one hour. Required of first-, second-, and third-year Human Development and Psychology (HDP) PhD students. Training to conduct research that has practical implications as well as theoretical significance within field of applied human development. Children's cognitive, language, personality, and social development in educationally relevant settings such as schools and day-care programs. Series unites scholars exploring contemporary issues in applied human development and provides framework to facilitate research and training in human development within school and UCLA community, as well as forum to share information with other investigators and institutions. May be repeated for credit. S/U grading.

**402. Curriculum Principles and Practices. (4)** Lecture, four hours. Critical analysis of major concepts, underlying assumptions, policy issues, and processes in development and implementation of curriculum in educational setting. Problems in formulation of pur-

poses, selection of learning experiences, organization of curriculum, and curriculum evaluation. S/U or letter grading.

**403. Infant-Toddler Child Development and Care. (4)** Lecture, four hours. Exploration of infant and toddler development (ages 0 to 3) and implications of development on their care and education. Introduction to major theories in child development, developmental milestones, and recent brain development research. Topics include family engagement, inclusion, risk contexts, developmentally appropriate practices, and assessment. S/U or letter grading.

**405A. Teaching in Urban Schools: Exploring Communities. (2)** Seminar, two hours. Limited to credential program students. Learning about urban communities by critically examining students' own beliefs, assumptions, and experiences about them to deepen understanding and appreciation about urban communities. Letter grading.

**405B. Teaching in Urban Schools: Exploring Identities. (2)** Seminar, two hours. Limited to credential program students. Examination and reflection on student values, beliefs, assumptions, and lives to determine how these factors shape way students view their world and, in particular, teaching, learning, students, their families, and their neighborhoods and communities. Letter grading.

**405C. Teaching in Urban Schools: Exploring Family-School Connections. (2)** Seminar, two hours. Limited to credential program students. Exploration of interrelationships among families, communities, and school systems, engaging parents, caregivers, guardians, students, and school personnel to develop strategies for working with families and to develop philosophy of education. Letter grading.

**406. Social Foundations and Cultural Diversity in American Education. (3)** Lecture, three hours. Intensive consideration of American society, particularly its racial and cultural diversity. Topics include historical development of American society, manifestations of cultures, and ways to learn about students' cultures. Examination of issues of racism, ethnic and gender differences, perspectives of cultural diversity, and impact on educational and classroom instruction. Letter grading.

**406B. Social Foundations and Cultural Diversity in American Education: Ethnic Studies Emphasis. (3)** Lecture, three hours. Historical, social, political, and economic contexts of schooling in U.S., with special emphasis on perspectives and contributions from ethnic studies. Examination of central arguments centered around systemic processes, deficit-framing, meanings produced in cultural contexts, and agency and activism. Letter grading.

**407. Psychological Foundations of Education. (3)** Lecture, three hours. Analysis of learning processes in school situations. Processes of human motivation, affective, cognitive, social, and personal development of children and adolescents, evaluation of learning, individual differences, and implications of relevant theory and research. Letter grading.

**409. Language Structure, Acquisition, and Development. (3)** Lecture, three hours. Theoretical foundations of language structure and first and second language acquisition, with focus on major themes of current research that provide framework for schooling of English language learners. Rationale for bilingual/English language acquisition and development programs. Historical and current theories and models of language. Letter grading.

**411. Procedural Issues in Evaluation. (4)** Lecture, four hours. Assessment methodologies appropriate for evaluation problems. Writing evaluation proposals, developing program monitoring procedures, selecting appropriate evaluation design strategies, coping with ethical considerations in evaluation, framing decision context, and reporting evaluation results. Letter grading.

**412. Why Research Matters to Student Affairs Practice. (3 or 4)** Lecture, three hours. How do researchers study impact of college on students? How can that research be used to improve student affairs practice? Introduction to world of college impact research and orientation to major ongoing studies conducted at

UCLA and beyond. Students interact with researchers and provide input on how research results might be utilized to improve work of student affairs. Letter grading.

**413A. Language and Culture. (2 to 4)** Lecture, two hours. Limited to credential program students. Offered and required for Bilingual Authorization Programs. Focus on language of emphasis for bilingual teachers. Practice in listening, reading, speaking, and writing competencies required for bilingual classrooms. Assessment made at end of course to determine proficiency of Bilingual Authorization Program candidates. Letter grading.

**413B. Methodology for Primary Language Instruction. (2 to 4)** Lecture, three hours. Offered and required for Bilingual Authorization Programs. Consideration of models for developing cultural and language skills of home speakers of language of emphasis; practice in use of activities to develop student ability to use language for real-world and academic purposes in culturally appropriate ways. Consideration of models for teaching academic content in primary language for delivery of core curriculum to bilingual students. Letter grading.

**413C. Culture of Emphasis. (2 to 4)** Lecture, three hours. Offered and required for Bilingual Authorization Programs. Conducted in language of authorization. Discussion of commonalities of culture of emphasis in its home country or countries; major historical periods and events; values, belief systems, and expectations; migration and immigration; historical and contemporary demography. Letter grading.

**414A. Student Affairs Practice and Theory. (3)** Lecture, two hours; discussion, two hours. Examination of needs for student affairs services, range of services, their philosophical and empirical rationale, and their organization and evaluation to provide knowledge base for developing theories of practice. Ongoing involvement in cooperative learning project to examine these issues both as team members and as individuals. Offered in summer only. Letter grading.

**414C. College Student Counseling. (3)** Lecture, three hours. Overview of counseling at college counseling centers. Review of historical context, philosophical and practical bases, organization and administration, specific programs, and contemporary issues and trends in college student counseling. Letter grading.

**414E. Administration of Student Affairs. (3)** Lecture, two hours; discussion, two hours. Overview of general knowledge and processes essential to effectively administer programs or services under student affairs. Examination of relationship between environmental factors and strategies for governing, planning, and managing student affairs programs and services. Offered in summer only. Letter grading.

**416. Program Development and Planning in Student Affairs. (4)** Lecture, two hours; discussion, two hours. Planning of programs that provide or support learning for individuals and groups in student affairs context. Examination of philosophical foundations of program planning, along with pedagogical and logistical dimensions of program development. Letter grading.

**419. Introduction to Research in Student Affairs. (4)** Lecture, two hours; discussion, two hours. Designed to orient students to nature of educational research in context of student affairs. Overview of quantitative, qualitative, and mixed methods to position students as scholar-practitioners. Exposure to these methods supplemented by examination of how they are used in published research relevant to practice of student affairs. Letter grading.

**420A. Principles of Curriculum. (4)** Lecture, four hours. Critical examination of basic concepts underlying determination of objectives, selection and organization of learning experiences, and evaluation process. S/U or letter grading.

**425. Principles for Teaching Exceptional Individuals. (3)** Lecture, three hours. Approaches for teaching exceptional individuals in special and regular education programs. Principles and assumptions underlying alternative approaches. Emphasis on individualizing curriculum and classroom management. Letter grading.

**426A-426B. Program Development and Program Evaluation in Student Affairs. (2-2)** Lecture, two hours. Introduction to program development and planning, as well as to assessment and program review. Development of knowledge of and skill in planning educational and training programs that provide support for learning within context of student affairs, as well as knowledge of and skill in developing, implementing, and analyzing assessment projects within student affairs context. Study of basic theoretical perspectives underlying program design/implementation and program review/assessment and application by developing, implementing, and assessing effectiveness of one program. In Progress (426A) and letter (426B) grading.

**440C. Administration of Instructional Programs. (4)** Lecture, four hours. Examination of current educational problems in society and strategies of their solution through curriculum policy and practice; instructional design and operation; in-service training of teaching staffs. S/U or letter grading.

**441A. Instructional Supervision A. (4)** Lecture, four hours. Analysis of teaching in light of research-substantiated elements of instruction: task analysis, appropriate objectives, principles that increase motivation, rate and degree of learning, retention and transfer, monitoring and adjusting instruction to meet needs and capacities of learners. S/U or letter grading.

**442B. Legal Aspects of Educational Management and Practice. (4)** Lecture, four hours. Examination of structures and kinds of law governing educational systems in U.S.; constitutional dimensions of church/state relations; employees' civil rights and legal aspects of hiring, firing, and negotiating procedures; student attendance, control, and civil rights. S/U or letter grading.

**443. Policy Analysis in Education. (4)** Lecture, four hours. Overview of political, economic, and legal context of educational policy formation. Included in examination are issues that impact on minorities (e.g., bilingual education, desegregation, affirmative action, role of subdominants in policy-making process). S/U or letter grading.

**448A. Urban School Leadership. (4)** Lecture, four hours. Analysis of problems of urban school leadership. Emphasis on changing nature of urban principalship, with considerable attention to role of other school and community agencies that interact with urban school leaders. S/U or letter grading.

**448B. Urban Leadership Laboratory. (4)** Laboratory, four hours. Analysis of and opportunity to practice human and technical skills requisite for success as urban school leader. Topics include negotiations, conflict resolution, applied computer technology, and effective communication. Activities include gaming, simulation, computer programming, and group dynamics. S/U or letter grading.

**450. Leadership Capacity Building. (4)** Lecture, one hour; discussion, three hours. Limited to Educational Leadership Program students. Course taken in year three of Educational Leadership Program to help students with their communication and leadership capacities. S/U grading.

**451. Foundations of Organizations and Leadership. (4)** Lecture, four hours. Limited to Educational Leadership Program students. Promotion of understanding of traditional and contemporary conceptions of leadership and organizational theory, with application of these conceptions to student professional work settings. Letter grading.

**452A-452B. Educational Enterprise. (4-4)** Lecture, two hours; discussion, two hours. Limited to Educational Leadership Program students. Use of structural, human resource, political, and symbolic frames to study K-16 education. Letter grading. **452A.** Focus on purposes of education governance, finance, access, and equity. **452B.** Requisite: course 452A. Focus on educational environments, organizations, and curriculum and instruction.

**454A. Action Research: Collaboration in Change. (4)** Lecture, one hour; discussion, two hours; small group work, one hour. Limited to Educational Leadership Program students. Students carry out full cycle of action research at educational site. Projects done in

teams as students hone and assess their collaboration abilities. Exploration of qualitative and quantitative data gathering methods and analyses. Letter grading.

**454B. Action Research: Collaboration in Change. (4)** Lecture, one hour; discussion, two hours; small group work, one hour. Limited to Educational Leadership Program students. Second course in two-course sequence on learning how to do and use action research. Honing of team processes and team roles while collaborating on data collection and analysis at educational site. Letter grading.

**455. Writing and Inquiry. (4)** Lecture/workshop, eight hours per month; discussion, one hour; laboratory, one hour. Limited to doctoral students in Educational Leadership Program. Intended to assist students' professional development as writers, addressing style and organization, scholarly genres, modes of discourse, and broader issues of conceptualization and method. Letter grading.

**456. Altering Structure and Culture of Schooling. (4)** Lecture, four hours; discussion, four hours. Limited to Educational Leadership Program students. Using applied orientation, examination of variety of approaches to organizational change and ways to sustain change. Letter grading.

**458A-458B-458C. Practicum: Dissertation. (2-2-2)** Seminar, two hours; discussion, two hours. Preparation: completion of first- and second-year courses. Limited to Educational Leadership Program students. Development of EdD dissertation and its implementation to improve educational practice. Letter grading.

**460. Seminar: Special Issues in Evaluation. (2 or 4)** Seminar, one or two hours; discussion, one or two hours. Topics and instructors vary each term. Recent emphases included evaluation utilization and cost-effectiveness evaluation. S/U or letter grading.

**466. Critical Media Literacy: Teaching Youth to Critically Read and Create Media. (4)** Lecture, four hours. Preparation for educators to teach K-12 students to explore their relationships with media by critically questioning media representations and creating their own alternative media messages. Critical media literacy combines theoretical foundations of cultural studies and critical pedagogy with practical classroom applications of new digital media as well as traditional print-based means of communication. Exploration of media representations of race, class, gender, sexual orientation, and other identity markers. Educators critically question media and technology, as well as explore new alternatives for creating multimedia messages in their own classrooms. Analysis and creation of media projects related to teaching required. Letter grading.

**470A. Seminar: Large Systems and Individual Schools. (4)** Seminar, four hours. S/U or letter grading.

**471. Principles of Effective Coaching and Leadership. (4)** Seminar, four hours. Introduction to principles and practice of effective coaching and teaching for aspiring coaches considering careers in professional and collegiate athletics, K-12 schools, and community-based sports organizations. Premised on principles of social justice and on value and promise of equity, inclusion, and diversity for contributing to creation of more humane, equitable, and harmonious society and nation. Letter grading.

**472. Introduction to Philosophies of Coaching. (4)** Seminar, four hours. Introduction to philosophies of coaching—overarching frameworks, perspectives, deep beliefs, and values that drive coaches' specific practices—as they are manifested in writings and conduct of professional and college sport coaches. Exploration of these through study of successful coaches in variety of sports unpacking their fundamental keys of success. Reflection on and cultivation of one's own personal and intentional philosophy of coaching answering questions what is your why and what is your how. Exploration of questions such as what is coach, what is coach's overall purpose, what are desired results, how best can coach lead and produce these results. Methods and assignments include presentations, analyzing videos, group work, interviews, analyses of coaching philosophies, and constructing statement of one's own philosophy of coaching. Letter grading.



**473. Diversity Leadership in Sports and Athletics.**

(4) Seminar, four hours. Coaching and transformational leadership requires examination of important topics that depend upon analysis of complex, yet essential concepts. Examination and discussion of how and why sports, diversity, and leadership must be interconnected in order to meet needs of universities, professional organizations, and most importantly student-athletes. Sports as industry and as enterprise. Covers its history, purpose, evolution, and role in higher education and wider society. Emphasis on student-athletes' experiences and outcomes, well-being, and readiness for educational and professional opportunities in sports and beyond. Addresses growing need for greater gender, ethnic, and racial diversity in athletic leadership. While those who participate in sports, particularly those sports designated as revenue generating, represent much of gender and racial diversity in U.S., leadership of sports falls embarrassingly short. Emphasis on equity throughout. Letter grading.

**474. Ethical Issues in Sports. (4) Lecture, three hours.**

Coaches and sport management professionals are likely to face numerous ethical issues and dilemmas in their day-to-day professional practices. Introduction to salient moral and ethical issues involved in physical education, sports, and coaching. Students gain analytical tools to make ethically informed decisions by introducing normative principles and framework to guide decision-making in real-life situations. Covers content areas where ethical decision-making may be relevant including sportsmanship, gambling, coaching, parental responsibilities, violence, drug use and testing, race and gender equity, media, and commercialization of college sports. Includes lectures, discussions, analysis of case studies, and applications of decision-making tools to resolve ethical issues. Letter grading.

**475. Mental Health in Athletics and Coaching. (4) Lecture, three hours.**

Introduction to mental health issues in context of athletics and coaching. Mental health issues are prevalent and on rise among athletes. Coaches and other sports personnel are often first line of defense and are best positioned to recognize symptoms and refer athletes to appropriate care and interventions. Cultivates greater awareness of prevalence of mental health issues among athletes. Enables students to recognize common symptoms and manifestations of mental health concerns (e.g., depression, eating disorders, etc.). Students gain knowledge base for appropriate referrals and interventions, and range of tools for creation of safe spaces within their organizations to address mental health concerns. Cultivates informed practitioners who are sensitive to mental health concerns and empathetic to plight of many who suffer from these issues. Letter grading.

**476. History and Philosophy of Sport and Physical Education. (4) Lecture, four hours.**

Focus on philosophical positions of body as determined by philosophical schools and intellectuals, past and present. Investigation that philosophical position of body has been significant factor in determining historic development of sport and physical activity/physical education; e.g., throughout history there were times where body was not held in high esteem, which negatively impacted development of sport. Theology also had impact upon how people viewed body. Sometimes sport thrived; sometimes it was condemned depending on theological beliefs. Body has history that is tied to sport history. Modernization theory used to explain how sport and physical activity evolved from pre-modern practice to modern practice. Study takes chronological, descriptive, and interpretive approaches. Letter grading.

**477. Leadership and Management of Athletic Departments in Educational Institutions. (4) Seminar, four hours.**

Introduction to principles and practices of leadership and management of athletic departments in higher education with emphasis on social justice leadership. Students develop their own, authentic and intentional leadership philosophy for leading with purpose and integrity, and gain knowledge, skills, and values to effectively lead in athletic departments. Introduction to various models of leadership and to fundamental management skills such as strategic plan-

ning, project management, effective communication, team building, team leadership, program evaluation, and effecting organizational change. Includes readings, responses to readings, analyses of case studies, developing leadership philosophy of one's own, formulating vision and mission statements, constructing strategic plans, developing communication strategies, and other individual and collaborative assignments around leadership and management of athletic departments. Letter grading.

**481. Knowledge and Inquiry in Classroom. (4) Lecture, four hours.** Logical features of instruction and their application to inquiry techniques in teaching and learning. Various conceptions of truth, belief, and fact and opinion, and their application to classroom learning situations. S/U or letter grading.

**482D. Instructional Strategies in Urban Education: Visual and Performing Arts. (1 to 4) Lecture, two hours;**

discussion, two hours. Emphasis on instructional practices that integrate visual and performing arts into urban classrooms. Debriefing of field experiences implementing subject-centered arts instruction, instruction connecting arts disciplines, and instruction connecting arts and other core disciplines. Advanced exploration of elements of each art form, as well as content and emotional scaffolding strategies and reflection strategies to make learning accessible, engaging, and relevant. Letter grading.

**490A. Instructional Decision Making. (4) Lecture, four hours.**

Analysis of instructional models relevant to public school education. Assumptions, procedures, and constraints of each strategy considered in terms of learner and task variables. Laboratory experiences in classroom settings permit students systematically to apply and evaluate alternative instructional strategies. S/U or letter grading.

**491. Curricular Decision Making. (4) Lecture, two hours;**

discussion, two hours. Examination of alternative solutions for practical problems that classroom teachers face in making curricular decisions. Analysis of influences of psychological, societal, and institutional factors in curricular decisions. Letter grading.

**492. Data Centric Problem-Based Learning for Humanizing Purposes. (3) Lecture, three hours.**

Focuses on humanizing science, technology, engineering, and mathematics (STEM) education through integration of data science and connections to computational thinking into project-based learning (PBL) pedagogical approach. Integration of data connections to computational thinking further contextualizes humanizing STEM education. Participants (pre-service teachers) explore how their K-12 students' identities and lived experiences connect with STEM challenges. Critical analysis of data and practices of computational thinking (CT) are leveraged toward humanizing STEM purposes within curricular design and implementation of PBL project. Methods course is aligned with California state frameworks and California content standards for grades K-12, including English Language Development Standards—all of which address needs and various interests of diverse students. Letter grading.

**495. Teaching Preparation in Education. (2) Seminar, two hours.**

Teaching assistants (TA) are supported while becoming more effective and reflective teachers. Focus on how to create student-centered, inclusive learning experiences. Study of theory (relationship between teaching and learning), research (what we know about how people learn), and logistics (how this actually happens for students). Students gain understanding of serving as TA in education (e.g., departmental policies, responsibilities to students, how/where to get additional support, etc.). Students have opportunities to apply (in their own sections) what they learn, to reflect collaboratively on their ongoing TA experiences, and to learn from experienced TAs. S/U grading.

**498A-498B-498C. Directed Field Experience. (2 to 8 each) Clinical, to be arranged.**

Field experiences designed to increase understanding of student fields of study. May be repeated for credit. S/U or letter grading.

**499A-499B-499C. Advanced Directed Field Experience. (4 to 8 each) Clinical, to be arranged.** Dissertation practicum that supports students in developing their proposals. Guides students on how to write their dissertation proposals and serves as writing workshop where students have opportunities to receive feedback from instructors, fellows, and peers. May be repeated for credit. Letter grading.

**501. Cooperative Program in Special Education. (2 to 8) Tutorial, to be arranged.**

Preparation: consent of UCLA academic adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Limited to UCLA doctoral students in special education. Used to record enrollment in practicum courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Independent Study. (1 to 12) Tutorial, to be arranged (one hour per unit).** Individual study or research for graduate students. May be repeated for credit. S/U or letter grading.

**597. Preparation for Master's Comprehensive Examinations or Doctoral Qualifying Examinations. (1 to 12) Tutorial, to be arranged.** Individual study for master's comprehensive examinations or for PhD or EdD qualifying examinations. May be repeated for credit. S/U grading.

**598. Thesis Research. (4 to 12) Tutorial, to be arranged (four hours for every 4 units).** Research for and preparation of master's thesis. May be taken for maximum of 12 units. S/U grading.

**599. Dissertation Research. (4 to 12) Tutorial, to be arranged (four hours for every 4 units).** Research for and preparation of doctoral dissertation. May be repeated for credit. S/U grading.

## ELECTRICAL AND COMPUTER ENGINEERING

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Danijela Cabric, PhD, *Vice Chair,*  
*Undergraduate Affairs*  
Subramanian S. Iyer, PhD, *Vice Chair,*  
*Industry Relations*  
Mani B. Srivastava, PhD, *Vice Chair,*  
*Computer Engineering*  
Lieven Vandenberghe, PhD, *Vice Chair,*  
*Graduate Affairs*

## Faculty Roster

### Professors

Asad A. Abidi, PhD  
Abeer A.H. Alwan, PhD  
Danijela Cabric, PhD  
Robert N. Candler, PhD  
M.-C. Frank Chang, PhD (*Wintek Endowed Professor of Electrical Engineering*)  
Panagiotis D. Christofides, PhD (*William D. Van Vorst Professor of Chemical Engineering Education*)

Jason (Jingsheng) Cong, PhD (*Volgenau Professor of Engineering Excellence*)  
 Suhas N. Diggavi, PhD  
 Lara Dolecek, PhD  
 Christina P. Fragouli, PhD  
 Bahman Gharesifard, PhD  
 Puneet Gupta, PhD  
 Lei He, PhD  
 Subramanian S. Iyer, PhD (*Charles P. Reames Endowed Professor of Electrical Engineering*)  
 Mona Jarrahi, PhD (*Northrop Grumman Professor of Electrical Engineering*)  
 Chandrashekar J. Joshi, PhD  
 Douglas G. Lichtman, JD  
 Jia-Ming Liu, PhD (*Northrop Grumman Opto-Electronic Professor of Electrical Engineering*)  
 Wentai Liu, PhD  
 Dejan Markovic, PhD  
 Warren B. Mori, PhD  
 Ali Mosleh, PhD (*Evalyn Knight Professor of Engineering*)  
 Stanley J. Osher, PhD  
 Aydogan Ozcan, PhD (*Volgenau Professor of Engineering Innovation*)  
 Sudhakar Pamarti, PhD  
 Gregory J. Pottier, PhD  
 Yahya Rahmat-Samii, PhD (*Northrop Grumman Professor of Electrical Engineering/Electromagnetics*)  
 Behzad Razavi, PhD  
 Vwani P. Roychowdhury, PhD  
 Henry Samuelli, PhD  
 Majid Sarrafzadeh, PhD  
 Stefano Soatto, PhD  
 Jason L. Speyer, PhD  
 Mani B. Srivastava, PhD  
 Paulo Tabuada, PhD (*Vijay K. Dhir Professor of Engineering*)  
 Lieven Vandenberghe, PhD  
 John D. Villasenor, PhD  
 Kang L. Wang, PhD (*Raytheon Company Professor of Electrical Engineering*)  
 Yuanxun Ethan Wang, PhD  
 Richard D. Wesel, PhD  
 Benjamin S. Williams, PhD  
 Chee Wei Wong, PhD (*Carol and Lawrence E. Tannas, Jr. Endowed Term Professor of Engineering*)  
 Jason C.S. Woo, PhD  
 C.-K. Ken Yang, PhD  
 Lixia Zhang, PhD (*Jonathan B. Postel Professor of Computer Systems*)

### Professors Emeriti

Frederick G. Allen, PhD  
 Francis F. Chen, PhD  
 Babak Daneshrad, PhD  
 Harold R. Fetterman, PhD  
 Stephen E. Jacobsen, PhD  
 Rajeev Jain, PhD  
 Bahram Jalali, PhD (*Fang Lu Endowed Professor Emeritus of Engineering*)  
 William J. Kaiser, PhD  
 Alan J. Laub, PhD  
 Dee-Son Pan, PhD  
 Izhak Rubin, PhD  
 Ali H. Sayed, PhD  
 Frederick W. Schott, PhD  
 Gabor C. Temes, PhD

Mihaela van der Schaar, PhD  
 Alan N. Willson, Jr., PhD (*Charles P. Reames Endowed Professor Emeritus of Electrical Engineering*)  
 Kung Yao, PhD

### Associate Professors

Elaheh Ahmadi, PhD  
 Aydin Babakhani, PhD  
 Sam Emaminejad, PhD  
 Alyson K. Fletcher, PhD

### Assistant Professors

Omid Abari, PhD  
 Clarice D. Aiello, PhD  
 Sergio Carbajo, PhD  
 Xiang Anthony Chen, PhD  
 Achuta Kadambi, PhD  
 Jonathan C. Kao, PhD  
 Ankur M. Mehta, PhD  
 Nader Sehatbakhsh, PhD  
 Yuan Tian, PhD  
 Lin F. Yang, PhD  
 Yang Zhang, PhD

### Adjunct Professors

Darius Divsalar, PhD  
 Dan M. Goebel, PhD  
 Asad M. Madni, PhD

### Adjunct Associate Professor

Chi On Chui, PhD

### Adjunct Assistant Professors

Shervin Moloudi, PhD  
 Yair Rivenson, PhD

## Overview

Electrical and computer engineers are responsible for inventions that have revolutionized our society, such as the electrical grid, telecommunications, and automated computing and control. The profession continues to make vital contributions in many domains, such as the infusion of information technology into all aspects of daily life. To further these ends, the Department of Electrical and Computer Engineering fosters a dynamic academic environment that is committed to a tradition of excellence in teaching, research, and service. It has state-of-the-art research programs and facilities in a variety of fields. Departmental faculty members are engaged in research efforts across several disciplines in order to serve the needs of industry, government, society, and the scientific community. Interactions with other disciplines are strong. Faculty members regularly conduct collaborative research projects with colleagues in the Geffen School of Medicine; School of Education and Information Studies; School of Theater, Film, and Television; and College of Letters and Science.

## Research

The primary areas in the department are circuits and embedded systems, computer engineering, physical and wave electronics, and signals and systems. These areas cover a broad spectrum of specializations in, for example, communications and telecommunications, computer vision, control systems, cybersecurity,

rity, electromagnetics, embedded computer networking, embedded computing systems, engineering optimization, integrated circuits and systems, machine learning, microelectromechanical systems (MEMS), nanotechnology, photonics and optoelectronics, plasma electronics, signal processing, and solid-state electronics.

## Undergraduate Majors

### Computer Engineering BS

The undergraduate curriculum provides all Computer Engineering majors with preparation in the mathematical and scientific disciplines that lead to a set of courses that span the fundamentals of the discipline in the major areas of data science and embedded networked systems. These collectively provide an understanding of many inventions of importance to our society, such as the Internet of Things, human-cyber-physical systems, mobile/wearable/implantable systems, robotic systems, and more generally smart systems at all scales in diverse spheres. The design of hardware, software, and algorithmic elements of such systems represents an already dominant and rapidly growing part of the computer engineering profession. Students are encouraged to make use of their computer science and electrical and computer engineering electives and a two-quarter capstone design course to pursue deeper knowledge within one of these areas according to their interests, whether for graduate study or preparation for employment.

### Capstone Major

The Computer Engineering major is a designated capstone major that is jointly administered by the Computer Science and Electrical and Computer Engineering departments. Undergraduate students complete a design course in which they integrate their knowledge of the discipline and engage in creative design within realistic and professional constraints. Students apply their knowledge and expertise gained in previous mathematics, science, and engineering coursework. Students identify, formulate, and solve engineering problems and present their projects to the class.

### Learning Outcomes

The Computer Engineering major has the following learning outcomes:

- Application of mathematical, scientific, and engineering knowledge
- Design of a software or hardware system, component, or process to meet desired needs within realistic economic, environmental, social, ethical, health, safety, security, reliability, manufacturability, and sustainability constraints
- Function productively on a team with others
- Identification, formulation, and solution of computer engineering problems
- Effective communication

## Requirements

### Preparation for the Major

*Required:* Computer Science 1 (or Electrical and Computer Engineering 1), 31, 32, 33, 35L, M51A (or Electrical and Computer Engineering M16); Electrical and Computer Engineering 3; Engineering 96I; Mathematics 31A, 31B, 32A, 32B, 33A, 33B, 61; Physics 1A, 1B, 1C, and 4AL or 4BL.

### The Major

*Required:* Computer Science 111, 118 (or Electrical and Computer Engineering 132B), M151B (or Electrical and Computer Engineering M116C), M152A (or Electrical and Computer Engineering M116L), 180; Electrical and Computer Engineering 100, 102, 113, 115C; one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, Statistics 100A; 8 units of computer science and 8 units of electrical and computer engineering upper-division electives; three technical breadth courses (12 units) selected from an approved list available in the Office of Academic and Student Affairs; 8 units capstone design from either Electrical and Computer Engineering 180DA/180DB or 183DA/183DB.

## Policies

### The Major

An approved list of technical breadth courses is available in the [Office of Academic and Student Affairs](#).

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Electrical Engineering BS

The undergraduate curriculum provides all Electrical Engineering majors with preparation in the mathematical and scientific disciplines that lead to a set of courses that span the fundamentals of the three major departmental areas of signals and systems, circuits and embedded systems, and physical wave electronics. These collectively provide an understanding of inventions of importance to society, such as integrated circuits, embedded systems, photonic devices, automatic computation and control, and telecommunication devices and systems.

Students are encouraged to make use of their electrical engineering electives and a two-term capstone design course to pursue deeper knowledge within one of these areas according to their interests, whether for graduate study or preparation for employment. See the [department website](#) for examples of specializations.

The Electrical Engineering major is accredited by the Engineering Accreditation Commission of [ABET](#).

### Capstone Major

The Electrical Engineering major is a designated capstone major. Undergraduate students complete a design course in which they integrate their knowledge of the discipline and engage in creative design within realistic and pro-

fessional constraints. Students apply their knowledge and expertise gained in previous mathematics, science, and engineering coursework. Within a multidisciplinary team structure, students identify, formulate, and solve engineering problems and present their projects to the class.

## Learning Outcomes

The Electrical Engineering major has the following learning outcomes:

- Application of knowledge of mathematics, science, and engineering
- Design of a system, component, or process to meet desired needs within realistic constraints
- Function as a productive member of a multidisciplinary team
- Effective communication
- Identification, formulation, and solution of electrical engineering problems

## Requirements

### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A; Computer Science 31, 32; Electrical and Computer Engineering 2, 3, 10, 11L, M16 (or Computer Science M51A); Mathematics 31A, 31B, 32A, 32B, 33A, 33B; Physics 1A, 1B, 1C, 4AL, 4BL.

### The Major

*Required:* Electrical and Computer Engineering 101A, 102, 110, 111L, 113, 131A; six core courses selected from Computer Science 33, Electrical and Computer Engineering 101B, 115A, 121B, 132A, 133A, 141, 170A; three technical breadth courses (12 units) selected from an approved list available in the Office of Academic and Student Affairs; 12 units of major field elective courses, at least 8 of which must be upper-division electrical and computer engineering courses—the remaining 4 units may be from upper-division electrical and computer engineering courses or from another engineering school department; and one two-term electrical and computer engineering capstone design course (8 units).

## Policies

### The Major

An approved list of technical breadth courses is available in the [Office of Academic and Student Affairs](#).

Electrical and Computer Engineering 100 and CM182 may not satisfy elective credit.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Undergraduate Minor

### Data Science Engineering Minor

The minor is intended to expose students to the entire data science life cycle from both

foundational and application perspectives. The foundational courses provide the engineering skills to collect, cleanse, and store data; analyze and draw inference from data; and take action and make decisions. A wide-ranging list of interdisciplinary courses focuses on various data-science applications using these skills.

## Admission

To apply for the minor, students must have an overall grade-point average of 3.0 or better, have completed or be in the process of completing in the present quarter the two lower-division required courses with the grade B- or better, and file a petition through Message Center. Steps to apply are outlined on the [Office of Academic and Student Affairs](#) website. Information about the minor and the application are available on the minor [website](#).

## The Minor

*Required Lower-Division Courses (8 units):* Computer Science 32, Mathematics 33A.

*Required Upper-Division Courses (12 units minimum):* One course from Civil and Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, 170E, or Statistics 100A; Computer Science M148 or Electrical and Computer Engineering M148; Computer Science 145 or M146 or Electrical and Computer Engineering M146.

*Elective Upper-Division Courses (8 units minimum):* Two courses from Computer Science M119, CM121, CM122, CM124, 143, 145 or M146 (if not taken as a required course), 161, 180, M182, Electrical and Computer Engineering 102, 113, 114, M119, 133A, M146 (if not taken as a required course), C147, 183DA and 183DB (both must be taken), Mechanical and Aerospace Engineering C137, 185, Statistics 100B, 115, 170, or C180.

## Policies

Variable topics courses may be taken as topics apply.

Transfer credit for any of the above is subject to approval; consult with the undergraduate counselors before enrolling in any courses for the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and student must have a minimum grade of C in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Electrical and Computer Engineering MS, PhD

The graduate program provides students with an opportunity to pursue advanced course-



work, in-depth training, and research investigations in several fields.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

# Electrical and Computer Engineering

## Lower-Division Courses

**1. Undergraduate Seminar. (1)** Seminar, one hour; outside study, two hours. Introduction by faculty members and industry lecturers to electrical engineering disciplines through current and emerging applications of autonomous systems and vehicles, biomedical devices, aerospace electronic systems, consumer products, data science, and entertainment products (amusement rides, etc.), as well as energy generation, storage, and transmission. P/NP grading.

**2. Physics for Electrical Engineers. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: Physics 1C. Introduction to concepts of modern physics necessary to understand solid-state devices, including elementary quantum theory, Fermi energies, and concepts of electrons in solids. Discussion of electrical properties of semiconductors leading to operation of junction devices. Letter grading.

**2H. Physics for Electrical Engineers (Honors). (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: Physics 1C. Honors course parallel to course 2. Letter grading.

**3. Introduction to Electrical Engineering. (4)** Lecture, two hours; laboratory, two hours; outside study, eight hours. Introduction to field of electrical engineering. Basic circuits techniques with application to explanation of electrical engineering inventions such as telecommunications, electrical grid, automatic computing and control, and enabling device technology. Research frontiers of electrical engineering. Introduction to measurement and design of electrical circuits. Letter grading.

**10. Circuit Theory I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 3 (or Computer Science 1 or Materials Science 10), Mathematics 33A, Physics 1B. Corequisites: course 11L (enforced only for Computer Science and Engineering and Electrical Engineering majors), Mathematics 33B. Introduction to linear circuit analysis. Resistive circuits, capacitors, inductors and ideal transformers, Kirchhoff laws, node and loop analysis, first-order circuits, second-order circuits, Thevenin and Norton theorem, sinusoidal steady state. Letter grading.

**10H. Circuit Theory I (Honors). (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 3 (or Computer Science 1 or Materials Science 10), Mathematics 33A, Physics 1B. Corequisites: course 11L (enforced only for Computer Science and Engineering and Electrical Engineering majors), Mathematics 33B. Honors course parallel to course 10. Letter grading.

**11L. Circuits Laboratory I. (1)** Lecture, one hour; laboratory, one hour; outside study, one hour. Enforced corequisite: course 10. Experiments with basic circuits containing resistors, capacitors, inductors, and transformers. Ohm's law voltage and current division, Thevenin and Norton equivalent circuits, superposition, transient and steady state analysis. Letter grading.

**M16. Logic Design of Digital Systems. (4)** (Same as Computer Science M51A.) Lecture, four hours; discussion, two hours; outside study, six hours. Introduction to digital systems. Specification and implementa-

tion of combinational and sequential systems. Standard logic modules and programmable logic arrays. Specification and implementation of algorithmic systems: data and control sections. Number systems and arithmetic algorithms. Error control codes for digital information. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Electrical and Electronic Circuits. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisites: Mathematics 33A, 33B or Mechanical and Aerospace Engineering 82, Physics 1C. Not open for credit to students with credit for course 110. Electrical quantities, linear circuit elements, circuit principles, signal waveforms, transient and steady state circuit behavior, semiconductor diodes and transistors, small signal models, and operational amplifiers. Letter grading.

**101A. Engineering Electromagnetics. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: Mathematics 32A and 32B, or 33A and 33B, Physics 1C. Electromagnetic field concepts, waves and phasors, transmission lines and Smith chart, transient responses, vector analysis, introduction to Maxwell equations, static and quasi-static electric and magnetic fields. Letter grading.

**101B. Electromagnetic Waves. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 101A. Time-varying fields and Maxwell equations, plane wave propagation and interaction with media, energy flow and Poynting vector, guided waves in waveguides, phase and group velocity, radiation and antennas. Letter grading.

**102. Systems and Signals. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: Mathematics 33A. Corequisite: Mathematics 33B. Elements of differential equations, first- and second-order equations, variation of parameters method and method of undetermined coefficients, existence and uniqueness. Systems: input/output description, linearity, time-invariance, and causality. Impulse response functions, superposition and convolution integrals. Laplace transforms and system functions. Fourier series and transforms. Frequency responses, responses of systems to periodic signals. Sampling theorem. Letter grading.

**110. Circuit Theory II. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Enforced requisites: courses 10, M16 (or Computer Science M51A), 102. Corequisite: course 111L (enforced only for Computer Science and Engineering and Electrical Engineering majors). Sinusoidal excitation and phasors, AC steady state analysis, AC steady state power, network functions, poles and zeros, frequency response, mutual inductance, ideal transformer, application of Laplace transforms to circuit analysis. Letter grading.

**110H. Circuit Theory II (Honors). (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 10, M16 (or Computer Science M51A), 102. Corequisite: course 111L. Sinusoidal excitation and phasors, AC steady state analysis, AC steady state power, network functions, poles and

zeros, frequency response, mutual inductance, ideal transformer, application of Laplace transforms to circuit analysis. Letter grading.

**110L. Circuit Measurements Laboratory. (2)** Laboratory, four hours; outside study, two hours. Requisite: course 100 or 110. Experiments with basic circuits containing resistors, capacitors, inductors, and op-amps. Ohm's law voltage and current division, Thevenin and Norton equivalent circuits, superposition, transient and steady state analysis, and frequency response principles. Letter grading.

**111L. Circuits Laboratory II. (1)** Lecture, one hour; laboratory, one hour; outside study, one hour. Enforced requisites: courses 10, 11L. Enforced corequisite: course 110. Experiments with electrical circuits containing resistors, capacitors, inductors, transformers, and op-amps. Steady state power analysis, frequency response principles, op-amp-based circuit synthesis, and two-port network principles. Letter grading.

**112. Introduction to Power Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 110. Complete overview of organization and operation of interconnected power systems. Development of appropriate models for interconnected power systems and learning how to perform power flow, economic dispatch, and short circuit analysis. Introduction to power system transient dynamics. Letter grading.

**113. Digital Signal Processing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 102. Relationship between continuous-time and discrete-time signals. Z-transform. Discrete Fourier transform. Fast Fourier transform. Structures for digital filtering. Introduction to digital filter design techniques. Letter grading.

**113DA. Digital Signal Processing Design. (4)** Lecture, two hours; laboratory, four hours; outside study, six hours. Enforced requisite: course 113. Real-time implementation of digital signal processing algorithms on digital processor chips. Experiments involving A/D and D/A conversion, aliasing, digital filtering, sinusoidal oscillators, Fourier transforms, and finite wordlength effects. Course project involving original design and implementation of machine learning and signal processing systems for communications, radar, medical and other imaging, speech, music, or video using DSP hardware. In progress grading (credit to be given only on completion of course 113DB).

**113DB. Digital Signal Processing Design. (4)** Laboratory, four hours; outside study, eight hours. Enforced requisites: courses 113, 113DA. Real-time implementation of digital signal processing algorithms on digital processor chips. Experiments involving A/D and D/A conversion, aliasing, digital filtering, sinusoidal oscillators, Fourier transforms, and finite wordlength effects. Course project involving original design and implementation of signal processing systems for communications, speech, audio, or video using DSP chip. Completion of projects begun in course 113DA. Letter grading.

**114. Speech and Image Processing Systems Design. (4)** Lecture, three hours; discussion, one hour; laboratory, two hours; outside study, six hours. Enforced requisite: course 113. Design principles of speech and image processing systems. Speech production, analysis, and modeling in first half of course; design techniques for image enhancement, filtering, and transformation in second half. Lectures supplemented by laboratory implementation of speech and image processing tasks. Letter grading.

**115A. Analog Electronic Circuits I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 110. Review of physics and operation of diodes and bipolar and MOS transistors. Equivalent circuits and models of semiconductor devices. Analysis and design of single-stage amplifiers. DC biasing circuits. Small-signal analysis. Operational amplifier systems. Letter grading.

**115AL. Analog Electronics Laboratory I. (2)** Laboratory, four hours; outside study, two hours. Enforced requisites: courses 110L or 111L, 115A. Experimental determination of device characteristics, resistive diode

circuits, single-stage amplifiers, compound transistor stages, effect of feedback on single-stage amplifiers, operational amplifiers, and operational amplifier circuits. Introduction to hands-on design experience based on individual student hardware design and implementation platforms. Letter grading.

**115B. Analog Electronic Circuits II. (4)** Lecture, four hours; discussion, one hour; outside study, eight hours. Enforced prerequisite: course 115A. Analysis and design of differential amplifiers in bipolar and CMOS technologies. Current mirrors and active loads. Frequency response of amplifiers. Feedback and its properties. Stability issues and frequency compensation. Letter grading.

**115C. Digital Electronic Circuits. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 100 or 115A, and Computer Science M51A. Transistor-level digital circuit analysis and design. Modern logic families (static CMOS, pass-transistor, dynamic logic), integrated circuit (IC) layout, digital circuits (logic gates, flipflops/latches, counters, etc.), computer-aided simulation of digital circuits. Letter grading.

**115E. Design Studies in Electronic Circuits. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 115B. Description of process of circuit design through lectures to complement other laboratory-based design courses. Topics vary by instructor and include communication circuits, power electronics, and instrumentation and measurement and may entail simulation-based design projects. Emphasis throughout on design-oriented analysis and rigorous approach to practical circuit design. Letter grading.

**M116C. Computer Systems Architecture. (4)** (Same as Computer Science M151B.) Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisites: course M16 or Computer Science M51A, Computer Science 33. Recommended: course M116L or Computer Science M152A, Computer Science 111. Computer system organization and design, implementation of CPU datapath and control, instruction set design, memory hierarchy (caches, main memory, virtual memory) organization and management, input/output subsystems (bus structures, interrupts, DMA), performance evaluation, pipelined processors. Letter grading.

**M116L. Introductory Digital Design Laboratory. (2)** (Same as Computer Science M152A.) Laboratory, four hours; outside study, two hours. Enforced prerequisite: course M16 or Computer Science M51A. Hands-on design, implementation, and debugging of digital logic circuits, use of computer-aided design tools for schematic capture and simulation, implementation of complex circuits using programmed array logic, design projects. Letter grading.

**M119. Fundamentals of Embedded Networked Systems. (4)** (Same as Computer Science M119.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 132B or Computer Science 118; one course from course 131A, Civil and Environmental Engineering 110, Mathematics 170A, 170E, Statistics 100A; Computer Science 33. Design tradeoffs and principles of operation of cyber physical systems such as devices and systems constituting Internet of Things. Topics include signal propagation and modeling, sensing, node architecture and operation, and applications. Letter grading.

**121B. Principles of Semiconductor Device Design. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Enforced prerequisite: course 2. Introduction to principles of operation of bipolar and MOS transistors, equivalent circuits, high-frequency behavior, voltage limitations. Letter grading.

**121DA-121DB. Semiconductor Processing and Device Design. (4-4)** Design fabrication and characterization of p-n junction and transistors. Students perform various processing tasks such as wafer preparation, oxidation, diffusion, metallization, and photolithography. Introduction to CAD tools used in integrated circuit processing and device design. Device structure optimization tool based on MEDICI; process integration tool based on SUPREM. Course familiarizes students with those tools. Using CAD tools, CMOS process integration to be designed. **121DA.**

Lecture, four hours; laboratory, four hours; outside study, four hours. Enforced prerequisite or corequisite: course 121B. In progress grading (credit to be given only on completion of course 121DB). **121DB.** Lecture, two hours; laboratory, four hours; outside study, six hours. Enforced prerequisites: courses 121B, 121DA. Letter grading.

**123A. Fundamentals of Solid-State I. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 2 or Physics 1C. Limited to junior/senior engineering majors. Fundamentals of solid-state, introduction to quantum mechanics and quantum statistics applied to solid-state. Crystal structure, energy levels in solids, and band theory and semiconductor properties. Letter grading.

**123B. Fundamentals of Solid-State II. (4)** Lecture, four hours; outside study, eight hours. Enforced prerequisite: course 123A. Discussion of solid-state properties, lattice vibrations, thermal properties, dielectric, magnetic, and superconducting properties. Letter grading.

**128. Principles of Nanoelectronics. (4)** Lecture, four hours; discussion, four hours; outside study, four hours. Requisite: Physics 1C. Introduction to fundamentals of nanoscience for electronics nanosystems. Principles of fundamental quantities: electron charge, effective mass, Bohr magneton, and spin, as well as theoretical approaches. From these nanoscale components, discussion of basic behaviors of nanosystems such as analysis of dynamics, variability, and noise, contrasted with those of scaled CMOS. Incorporation of design project in which students are challenged to design electronics nanosystems. Letter grading.

**131A. Probability and Statistics. (4)** Lecture, four hours; discussion, one hour; outside study, 10 hours. Requisites: Mathematics 32B, 33B. Introduction to basic concepts of probability, including random variables and vectors, distributions and densities, moments, characteristic functions, and limit theorems. Applications to communication, control, and signal processing. Introduction to computer simulation and generation of random events. Letter grading.

**132A. Introduction to Communication Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisites: courses 102, 113, 131A. Review of basic probability, basics of hypothesis testing, sufficient statistics and waveform communication, signal-design tradeoffs for digital communications, basics of error control coding, intersymbol interference channels and orthogonal frequency division multiplexing (OFDM), basics of wireless communications. Letter grading.

**132B. Data Communications and Telecommunication Networks. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 131A. Layered communications architectures. Queueing system modeling and analysis. Error control, flow and congestion control. Packet switching, circuit switching, and routing. Network performance analysis and design. Multiple-access communications: TDMA, FDMA, polling, random access. Local, metropolitan, wide area, integrated services networks. Letter grading.

**133A. Applied Numerical Computing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisites: course 131A, and Civil Engineering M20 or Computer Science 31 or Mechanical and Aerospace Engineering M20. Introduction to numerical computing/analysis; analytic formulations versus numerical solutions; floating-point representations and rounding errors. Review of MATLAB; mathematical software. Linear equations; LU factorization; bounds on error; iterative methods for solving linear equations; conditioning and stability; complexity. Interpolation and approximation; splines. Zeros and roots of nonlinear equations. Linear least squares and orthogonal (QR) factorization; statistical interpretation. Numerical optimization; Newton method; nonlinear least squares. Numerical quadrature. Solving ordinary differential equations. Eigenvalues and singular values; QR algorithm; statistical applications. Letter grading.

**133B. Simulation, Optimization, and Data Analysis. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 133A. Simulation of dynamical systems. Algorithms for ordinary differential and difference equations. Fourier analysis; fast Fourier transforms. Random number generators. Simulation of stochastic systems, Monte Carlo methods. Constrained optimization; applications of optimization to engineering design, modeling, and data analysis. Introduction to data mining and machine learning. Algorithms and complexity. Integration of mathematical software in applications. Letter grading.

**134. Graph Theory in Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Basics of graph theory, including trees, bipartite graphs and matching, vertex and edge coloring, planar graphs and networks. Emphasis on reducing real-world engineering problems to graph theory formulations. Letter grading.

**141. Principles of Feedback Control. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 102. Mathematical modeling of physical control systems in form of differential equations and transfer functions. Design problems, system performance indices of feedback control systems via classical techniques, root-locus and frequency-domain methods. Computer-aided solution of design problems from real world. Letter grading.

**142. Linear Systems: State-Space Approach. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced prerequisite: course 102. State-space methods of linear system analysis and synthesis, with application to problems in networks, control, and system modeling. Letter grading.

**C143A. Neural Signal Processing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 131A, Mathematics 33A. Topics include fundamental properties of electrical activity in neurons; technology for measuring neural activity; spiking statistics and Poisson processes; generative models and classification; regression and Kalman filtering; principal components analysis, factor analysis, and expectation maximization. Concurrently scheduled with course C243A. Letter grading.

**M146. Introduction to Machine Learning. (4)** (Same as Computer Science M146.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 131A or Civil and Environmental Engineering 110 or Mathematics 170A or 170E or Statistics 100A; Computer Science 32 or Program in Computing 10C; Mathematics 33A. Introduction to breadth of data science. Foundations for modeling data sources, principles of operation of common tools for data analysis, and application of tools and models to data gathering and analysis. Topics include statistical foundations, regression, classification, kernel methods, clustering, expectation maximization, principal component analysis, decision theory, reinforcement learning and deep learning. Letter grading.

**C147. Neural Networks and Deep Learning. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 131A, 133A or 205A, and M146, or equivalent. Review of machine learning concepts; maximum likelihood; supervised classification; neural network architectures; backpropagation; regularization for training neural networks; optimization for training neural networks; convolutional neural networks; practical CNN architectures; deep learning libraries in Python; recurrent neural networks, backpropagation through time, long short-term memory and gated recurrent units; variational autoencoders; generative adversarial networks; adversarial examples and training. Concurrently scheduled with course C247. Letter grading.

**M148. Introduction to Data Science. (4)** (Same as Computer Science M148.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: one course from 131A, Civil and Environmental Engineering 110, Mathematics 170A, Mathematics 170E, or Statistics 100A, and Computer Science 31 or Program in Computing 10A, and 10B. How to analyze data arising in real world so as to understand corresponding phenomenon. Covers topics in machine learning, data analytics, and statistical modeling clas-



sically employed for prediction. Comprehensive, hands-on overview of data science domain by blending theoretical and practical instruction. Data science lifecycle: data selection and cleaning, feature engineering, model selection, and prediction methodologies. Letter grading.

**149. Foundations of Computer Vision. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisites: courses 102, 131A, Mathematics 33A. Covers foundations of computer vision from both theoretical and practical perspective. Particular emphasis on classical computer vision, which should be seen as complementary to deep learning. Study is relevant for various majors in the sciences specializing in artificial intelligence, cyberphysical systems and information engineering, robotics, machine learning, perception, and others looking for applications. Letter grading.

**M153. Introduction to Microscale and Nanoscale Manufacturing. (4)** (Same as Bioengineering M153, Chemical Engineering M153, and Mechanical and Aerospace Engineering M183B.) Lecture, three hours; laboratory, four hours; outside study, five hours. Enforced requisites: Chemistry 20A, Physics 1A, 1B, 1C, 4AL. Introduction to general manufacturing methods, mechanisms, constraints, and microfabrication and nanofabrication. Focus on concepts, physics, and instruments of various microfabrication and nanofabrication techniques that have been broadly applied in industry and academia, including various photolithography technologies, physical and chemical deposition methods, and physical and chemical etching methods. Hands-on experience for fabricating microstructures and nanostructures in modern clean-room environment. Letter grading.

**162A. Wireless Communication Links and Antennas. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 101B. Basic properties of transmitting and receiving antennas and antenna arrays. Array synthesis. Adaptive arrays. Friis transmission formula, radar equations. Cell-site and mobile antennas, bandwidth budget. Noise in communication systems (transmission lines, antennas, atmospheric, etc.). Cell-site and mobile antennas, cell coverage for signal and traffic, interference, multipath fading, ray bending, and other propagation phenomena. Letter grading.

**163A. Introductory Microwave Circuits. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 101B. Transmission lines description of waveguides, impedance matching techniques, power dividers, directional couplers, active devices, transistor amplifier design. Letter grading.

**163C. Fundamental Principles of Radiofrequency and Microwave Systems. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 101B. Theory and design of modern radiofrequency (RF) and microwave systems such as cellular communications, satellite systems, radar systems, wireless sensors, and biological applications of microwaves such as magnetic resonance imaging (MRI). Letter grading.

**163DA. Microwave and Wireless Design I. (4)** Lecture, one hour; laboratory, three hours; outside study, eight hours. Enforced requisites: courses 101A, 101B. Course 163DA is enforced requisite to 163DB. Limited to senior Electrical Engineering majors. Capstone design course, with emphasis on transmission line-based circuits and components to address need in industry and research community for students with microwave and wireless circuit design experiences. Standard design procedure for waveguide and transmission line-based microwave circuits and systems to gain experience in using Microwave CAD software such as Agilent ADS or HFSS. How to fabricate and test these designs. In Progress grading (credit to be given only on completion of course 163DB).

**163DB. Microwave and Wireless Design II. (4)** Lecture, one hour; laboratory, three hours; outside study, eight hours. Enforced requisites: courses 101A, 101B, 163DA. Limited to senior Electrical Engineering majors. Design of radio frequency circuits and systems, with emphasis on both theoretical foundations and hands-on experience. Design of radio frequency

transceivers and their building blocks according to given specifications or in form of open-ended problems. Introduction to advanced topics related to projects through lecture and laboratories. Creation by students of end-to-end systems in application context, managing trade-offs across subsystems while meeting constraints and optimizing metrics related to cost, performance, ease of use, manufacturability, testing, and other real-world issues. Oral and written presentations of project results required. Letter grading.

**164DA-164DB. Electronic Circuits and Systems Design. (4-4)** Limited to senior Electrical Engineering majors. Design of analog circuits, components and systems, emphasizing theoretical foundations and hands-on experience. Design of key analog and digital building blocks according to given specifications or in form of open-ended problems. Introduction to advanced topics related to projects through lectures and laboratories. Creation by students of end-to-end systems in application context, managing trade-offs across subsystems while meeting constraints and optimizing metrics related to cost, performance, ease of use, manufacturability, testing, and other real-world issues. Oral and written presentations of project results required. **164DA.** Lecture, two hours; laboratory, two hours; outside study, eight hours. Requisite: course 115B (may be taken concurrently), or instructor consent. Course 164DA is enforced requisite to 164DB. In Progress (164DA) and letter (164DB) grading. **164DB.** Lecture, one hour; laboratory, three hours; outside study, eight hours. Enforced requisite: course 164DA. Letter grading.

**170A. Principles of Photonics. (4)** Lecture, four hours; recitation, one hour; outside study, seven hours. Enforced requisites: courses 2, 101A. Development of solid foundation on essential principles of photonics from ground up with minimum prior knowledge on this subject. Topics include optical properties of materials, optical wave propagation and modes, optical interferometers and resonators, optical coupling and modulation, optical absorption and emission, principles of lasers and light-emitting diodes, and optical detection. Letter grading.

**170B. Lasers and Photonic Devices. (4)** Lecture, four hours; recitation, one hour; outside study, seven hours. Enforced requisite: course 170A. Coverage of laser physics, related photonic devices, and applications of lasers. Topics include resonators, thermal radiation, Einstein coefficients, optical amplification, semiconductor lasers, optical modulation and detection. Letter grading.

**170C. Photonic Sensors and Solar Cells. (4)** Lecture, four hours; recitation, one hour; outside study, seven hours. Enforced requisite: course 101A. Recommended: courses 2, 170A. Fundamentals of detection of light for communication and sensing, as well as conversion of light to electrical energy in solar cells. Introduction to radiometry, semiconductor photodetectors, noise processes and figures of merit, thermal detectors, and photovoltaic solar cells of various types and materials. Letter grading.

**M171L. Data Communication Systems Laboratory. (2 to 4)** (Same as Computer Science M171L.) Laboratory, four to eight hours; outside study, two to four hours. Recommended preparation: course M116L. Limited to seniors. Not open to students with credit for course M117. Interpretation of analog-signaling aspects of digital systems and data communications through experience in using contemporary test instruments to generate and display signals in relevant laboratory setups. Use of oscilloscopes, pulse and function generators, baseband spectrum analyzers, desktop computers, terminals, modems, PCs, and workstations in experiments on pulse transmission impairments, waveforms and their spectra, modem and terminal characteristics, and interfaces. Letter grading.

**173DA-173DB. Photonics and Communication Design. (4-4)** Lecture, one hour; laboratory, three hours; outside study, eight hours. Introduction to measurement of basic photonic devices, including LEDs, lasers, detectors, and amplifiers; fiber-optic fundamentals and measurement of fiber systems. Modulation techniques, including AM, FM, phase and suppressed

carrier methods. Possible projects include lasers, optical communication, and biomedical imaging and sensing. **173DA.** Enforced requisite: course 101A. Recommended: course 170A or Bioengineering C170. Choice of project preliminary design. In Progress grading (credit to be given only on completion of course 173DB). **173DB.** Enforced requisites: courses 101A, 173DA. Finalization of design and testing of projects begun in course 173DA. Letter grading.

**176. Photonics in Biomedical Applications. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Enforced requisite: course 101A. Study of different types of optical systems and their physics background. Examination of their roles in current and projected biomedical applications. Specific capabilities of photonics to be related to each example. Letter grading.

**180DA-180DW. Systems Design. (4-4)** Advanced systems design integrating communications, control, and signal processing subsystems. Introduction to advanced topics related to projects through lecture and laboratories. Open-ended projects vary each offering. Student teams create high-performance designs that manage trade-offs among subsystem components, including cost, performance, ease of use, and other real-world constraints. Societal implications of such systems. Professional technical writing instruction and assignments. Oral and written presentation of project results. **180DA.** Lecture, two hours; laboratory, four hours; outside study, six hours. Limited to senior Electrical Engineering and Computer Engineering majors. In Progress grading (credit to be given only on completion of course 180DW). **180DW.** (Formerly numbered 180DB.) Laboratory, four hours; outside study, eight hours. Enforced requisite: course 180DA. Completion of projects begun in course 180DA. Satisfies Writing II requirement. Letter grading.

**181DA-181DB. Honors Thesis. (4-4)** Tutorial, one hour; outside study, 11 hours. Limited to seniors. Research by individuals or small teams under supervision of faculty mentor, leading to composition and presentation of honors thesis. Study of fundamentals of modern research and development: project conception, planning, development and testing; design iteration cycle; research and data documentation standards; how to read technical literature. Planning, execution, and documentation of original open-ended research/development project. **181DA.** Study of research fundamentals, conception of project plan, and first iteration of design such as experiment, simulation, algorithm, or hardware artifact, each with testing and validation plan. Written documentation of design with oral presentation. In Progress grading (credit to be given only on completion of course 181DB). **181DB.** Enforced requisite: course 181DA. Iterations of design. Written documentation in form of thesis documenting results in their societal and technical contexts, and oral presentation/demonstration of final results. Letter grading.

**CM182. Science, Technology, and Public Policy. (4)** (Same as Public Affairs M164 and Public Policy CM182.) Lecture, three hours. Recent and continuing advances in science and technology are raising profoundly important public policy issues. Consideration of selection of critical policy issues, each of which has substantial ethical, social, economic, political, scientific, and technological aspects. Concurrently scheduled with course CM282. Letter grading.

**183DA. Design of Robotic Systems I. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Requisite: course 102. Recommended: courses 141, 142. Course 183DA is requisite to 183DB. Limited to senior Electrical Engineering majors. Topics in robotic design include integrated electromechanical design, design for manufacturing (DFM), design software, and design automation. Topics in robotic manufacturing include materials, sensors and actuators, programming, and rapid prototyping. Topics in control include manipulation, motion and path planning, learning and adaptation, and human-robot interaction. Additional topics may include distributed and multi-robot systems, bio-inspired robotics, project management, and societal implications. Open-ended projects vary annually. Student teams create and analyze robotic systems for various applications. Oral and

written presentation of project results. In Progress grading (credit to be given only on completion of course 183DB).

**183DB. Design of Robotic Systems II. (4)** Laboratory, four hours; outside study, eight hours. Requisite: course 183DA. Recommended: courses 141, 142. Limited to senior Electrical Engineering majors. Topics in robotic design include integrated electromechanical design, design for manufacturing (DFM), design software, and design automation. Topics in robotic manufacturing include materials, sensors and actuators, programming, and rapid prototyping. Topics in control include manipulation, motion and path planning, learning and adaptation, and human-robot interaction. Additional topics may include distributed and multi-robot systems, bio-inspired robotics, project management, and societal implications. Open-ended projects vary annually. Student teams create and analyze robotic systems for various applications. Oral and written presentation of project results. Letter grading.

**184DA-184DB. Independent Group Project Design. (2-2)** Laboratory, five hours; discussion, one hour. Enforced requisites: courses M16, 110, 110L. Course 184DA is enforced prerequisite to 184DB. Courses centered on group project that runs year long to give students intensive experience on hardware design, microcontroller programming, and project coordination. Several projects based on autonomous robots that traverse small mazes and courses offered yearly and target regional competitions. Students may submit proposals that are evaluated and approved by faculty members. Topics include sensing circuits and amplifier-based design, microcontroller programming, feedback control, actuation, and motor control. In Progress (184DA) and letter (184DB) grading.

**M185. Introduction to Plasma Science and Engineering. (4)** (Same as Earth, Planetary, and Space Sciences M156 and Physics M122.) Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 101A or Physics 110B. Senior-level introductory course on electrodynamics of charged particles and their collective behavior in plasmas in laboratory, near-Earth space and astrophysical settings. Covers selected applications taken from fusion energy, space weather, materials processing, generation of coherent radiation and particle accelerators. Letter grading.

**188. Special Courses in Electrical Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Special topics in electrical engineering for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated once for credit with topic or instructor change. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**194. Research Group Seminars: Electrical Engineering. (2 to 4)** Seminar, four hours; outside study, eight hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field. May be repeated for credit. Letter grading.

**199. Directed Research in Electrical Engineering. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**201A. VLSI Design Automation. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 115C. Fundamentals of design automation of VLSI circuits and systems, including introduction to circuit and system platforms such as field

programmable gate arrays and multicore systems; high-level synthesis, logic synthesis, and technology mapping; physical design; and testing and verification. Letter grading.

**201C. Modeling of VLSI Circuits and Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 115C. Detailed study of VLSI circuit and system models considering performance, signal integrity, power and thermal effects, reliability, and manufacturability. Discussion of principles of modeling and optimization codevelopment. Letter grading.

**201D. Design in Nanoscale Technologies. (4)** Lecture, four hours; outside study, eight hours. Enforced prerequisite: course 115C. Challenges of digital circuit design and layout in deeply scaled technologies, with focus on design-manufacturing interactions. Summary of large-scale digital design flow; basic manufacturing flow; lithographic patterning, resolution enhancement, and mask preparation; yield and variation modeling; circuit reliability and aging issues; design rules and their origins; layout design for manufacturing; test structures and process control; circuit and architecture methods for variability mitigation. Letter grading.

**M202A. Embedded Systems. (4)** (Same as Computer Science M213A.) Lecture, four hours; discussion, one hour; outside study, seven hours. Designed for graduate computer science and electrical engineering students. Methodologies and technologies for design of embedded systems. Topics include hardware and software platforms for embedded systems, techniques for modeling and specification of system behavior, software organization, real-time operating system scheduling, real-time communication and packet scheduling, low-power battery and energy-aware system design, timing synchronization, fault tolerance and debugging, and techniques for hardware and software architecture optimization. Theoretical foundations as well as practical design methods. Letter grading.

**M202B. Energy-Aware Computing and Cyber-Physical Systems. (4)** (Same as Computer Science M213B.) Lecture, four hours; outside study, eight hours. Requisite: course M16 or Computer Science M51A. Recommended: course M116C or Computer Science M151B, and Computer Science 111. System-level management and cross-layer methods for power and energy consumption in computing and communication at various scales ranging across embedded, mobile, personal, enterprise, and data-center scale. Computing, networking, sensing, and control technologies and algorithms for improving energy sustainability in human-cyber-physical systems. Topics include modeling of energy consumption, energy sources, and energy storage; dynamic power management; power-performance scaling and energy proportionality; duty-cycling; power-aware scheduling; low-power protocols; battery modeling and management; thermal management; sensing of power consumption. Letter grading.

**202C. Networked Embedded Systems Design. (4)** Lecture, four hours; laboratory, four hours; outside study, four hours. Designed for graduate computer science and electrical engineering students. Training in combination of networked embedded systems design combining embedded hardware platform, embedded operating system, and hardware/software interface. Essential graduate student background for research and industry career paths in wireless devices for applications ranging from conventional wireless mobile devices to new area of wireless health. Laboratory design modules and course projects based on state-of-art embedded hardware platform. Letter grading.

**205A. Matrix Analysis for Scientists and Engineers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Preparation: one undergraduate linear algebra course. Designed for first-year graduate students in all branches of engineering, science, and related disciplines. Introduction to matrix theory and linear algebra, language in which virtually all of modern science and engineering is conducted. Review of matrices taught in undergraduate courses and introduction to graduate-level topics. Letter grading.

**M206. Machine Perception. (4)** (Same as Computer Science M268.) Lecture, four hours; discussion, two hours; outside study, six hours. Designed for graduate students. Computational aspects of processing visual and other sensory information. Unified treatment of early vision in man and machine. Integration of symbolic and iconic representations in process of image segmentation. Computing multimodal sensory information by neural-net architectures. Letter grading.

**M208B. Functional Analysis for Applied Mathematics and Engineering. (4)** (Same as Mathematics M268A.) Lecture, four hours; outside study, eight hours. Requisites: course 208A (or Mathematics 115A and 115B), Mathematics 131A, 131B, 132. Topics may include  $L^p$  spaces, Hilbert, Banach, and separable spaces; Fourier transforms; linear functionals. Riesz representation theory, linear operators and their adjoints; self-adjoint and compact operators. Spectral theory. Differential operators such as Laplacian and eigenvalue problems. Resolvent distributions and Green's functions. Semigroups. Applications. S/U or letter grading.

**M208C. Topics in Functional Analysis for Applied Mathematics and Engineering. (4)** (Same as Mathematics M268B.) Lecture, four hours; outside study, eight hours. Requisite: course M208B. Semigroups of linear operators over Hilbert spaces; generator and resolvent, generation theorems, Laplace inversion formula. Dissipative operators and contraction semigroups. Analytic semigroups and spectral representation. Semigroups with compact resolvents. Parabolic and hyperbolic systems. Controllability and stabilizability. Spectral theory of differential operators, PDEs, generalized functions. S/U or letter grading.

**209AS. Special Topics in Circuits and Embedded Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Special topics in one or more aspects of circuits and embedded systems, such as digital, analog, mixed-signal, and radio frequency integrated circuits (RF ICs); electronic design automation; wireless communication circuits and systems; embedded processor architectures; embedded software; distributed sensor and actuator networks; robotics; and embedded security. May be repeated for credit with topic change. S/U or letter grading.

**209BS. Seminar: Circuits and Embedded Systems. (2 to 4)** Seminar, two to four hours; outside study, four to eight hours. Seminars and discussions on current and advanced topics in one or more aspects of circuits and embedded systems, such as digital, analog, mixed-signal, and radio frequency integrated circuits (RF ICs); electronic design automation; wireless communication circuits and systems; embedded processor architectures; embedded software; distributed sensor and actuator networks; robotics; and embedded security. May be repeated for credit with topic change. S/U or letter grading.

**210A. Adaptation and Learning. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Preparation: prior training in probability theory, random processes, and linear algebra. Recommended requisites: courses 205A, 241A. Mean-square-error estimation and filters, least-squares estimation and filters, steepest-descent algorithms, stochastic-gradient algorithms, convergence, stability, tracking, and performance, algorithms for adaptation and learning, adaptive filters, learning and classification, optimization. Letter grading.

**210B. Inference over Networks. (4)** Lecture, four hours; outside study, eight hours. Preparation: prior training in probability theory, random processes, linear algebra, and adaptation. Enforced prerequisite: course 210A. Adaptation, learning, estimation, and detection over networks. Steepest-descent algorithms, stochastic-gradient algorithms, convergence, stability, tracking, and performance analyses. Distributed optimization. Online and distributed adaptation and learning. Synchronous and asynchronous network behavior. Incremental, consensus, diffusion, and gossip strategies. Letter grading.

**211A. Digital Image Processing I. (4)** Lecture, three hours; discussion, one hour; laboratory, four hours; outside study, four hours. Preparation: computer programming experience. Requisite: course 113. Fundamentals of digital image processing theory and tech-

niques. Topics include two-dimensional linear system theory, image transforms, and enhancement. Concepts covered in lecture applied in computer laboratory assignments. Letter grading.

**212A. Theory and Design of Digital Filters. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 113. Approximation of filter specifications. Use of design charts. Structures for recursive digital filters. FIR filter design techniques. Comparison of IIR and FIR structures. Implementation of digital filters. Limit cycles. Overflow oscillations. Discrete random signals. Wave digital filters. Letter grading.

**M214A. Digital Speech Processing. (4)** (Same as Bioengineering M214A.) Lecture, three hours; laboratory, two hours; outside study, seven hours. Requisite: course 113. Theory and applications of digital processing of speech signals. Mathematical models of human speech production and perception mechanisms, speech analysis/synthesis. Techniques include linear prediction, filter-bank models, and homomorphic filtering. Applications to speech synthesis, automatic recognition, and hearing aids. Letter grading.

**214B. Advanced Topics in Speech Processing. (4)** Lecture, three hours; discussion, one hour; computer assignments, two hours; outside study, six hours. Requisite: course M214A. Advanced techniques used in various speech-processing applications, with focus on speech recognition by humans and machine. Physiology and psychoacoustics of human perception. Dynamic Time Warping (DTW) and Hidden Markov Models (HMM) for automatic speech recognition systems, pattern classification, and search algorithms. Aids for hearing impaired. Letter grading.

**215A. Analog Integrated Circuit Design. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 115B. Analysis and design of analog integrated circuits. MOS and bipolar device structures and models, single-stage and differential amplifiers, noise, feedback, operational amplifiers, offset and distortion, sampling devices and discrete-time circuits, bandgap references. Letter grading.

**215B. Advanced Digital Integrated Circuits. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 115C, M216A. Analysis and comparison of modern logic families. VLSI memories (SRAM, DRAM, and ROMs). Accuracy of various simulation models and simulation methods for digital circuits. Letter grading.

**215C. Analysis and Design of RF Circuits and Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 215A. Principles of RF circuit and system design, with emphasis on monolithic implementation in VLSI technologies. Basic concepts, communications background, transceiver architectures, low-noise amplifiers and mixers, oscillators, frequency synthesizers, power amplifiers. Letter grading.

**215D. Analog Microsystem Design. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 215A. Analysis and design of data conversion interfaces and filters. Sampling circuits and architectures, D/A conversion techniques, A/D converter architectures, building blocks, precision techniques, discrete- and continuous-time filters. Letter grading.

**215E. Signaling and Synchronization. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 215A, M216A. Analysis and design of circuits for synchronization and communication for VLSI systems. Use of both digital and analog design techniques to improve data rate of electronics between functional blocks, chips, and systems. Advanced clocking methodologies, phase-locked loop design for clock generation, and high-performance wire-line transmitters, receivers, and timing recovery circuits. Letter grading.

**M216A. Design of VLSI Circuits and Systems. (4)** (Same as Computer Science M258A.) Lecture, four hours; discussion, two hours; laboratory, four hours; outside study, two hours. Requisites: courses M16 or Computer Science M51A, and 115A. Recommended: course 115C. LSI/VLSI design and application in com-

puter systems. Fundamental design techniques that can be used to implement complex integrated systems on chips. Letter grading.

**216B. VLSI Signal Processing. (4)** Lecture, four hours; outside study, eight hours. Advanced concepts in VLSI signal processing, with emphasis on architecture design and optimization within block-based description that can be mapped to hardware. Fundamental concepts from digital signal processing (DSP) theory, architecture, and circuit design applied to complex DSP algorithms in emerging applications for personal communications and healthcare. Letter grading.

**M216C. LSI in Computer System Design. (4)** (Same as Computer Science M258C.) Lecture, four hours; laboratory, four hours; outside study, four hours. Requisite: course M216A. LSI/VLSI design and application in computer systems. In-depth studies of VLSI architectures and VLSI design tools. Letter grading.

**M217. Biomedical Imaging. (4)** (Same as Bioengineering M217.) Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 114 or 211A. Optical imaging modalities in biomedicine. Other nonoptical imaging modalities discussed briefly for comparison purposes. Letter grading.

**218. Network Economics and Game Theory. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Discussion of how different cooperative and noncooperative games among agents can be constructed to model, analyze, optimize, and shape emerging interactions among users in different networks and system settings. How strategic agents can successfully compete with each other for limited and time-varying resources by optimizing their decision process and learning from their past interaction with other agents. To determine their optimal actions in these distributed, informationally decentralized environments, agents need to learn and model directly or implicitly other agents' responses to their actions. Discussion of existing multiagent learning techniques and learning in games, including adjustment processes for learning equilibria, fictitious play, regret-learning, and more. Letter grading.

**219. Large-Scale Data Mining: Models and Algorithms. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Introduction of variety of scalable data modeling tools, both predictive and causal, from different disciplines. Topics include supervised and unsupervised data modeling tools from machine learning, such as support vector machines, different regression engines, different types of regularization and kernel techniques, deep learning, and Bayesian graphical models. Emphasis on techniques to evaluate relative performance of different methods and their applicability. Includes computer projects that explore entire data analysis and modeling cycle: collecting and cleaning large-scale data, deriving predictive and causal models, and evaluating performance of different models. Letter grading.

**221A. Physics of Semiconductor Devices I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Physical principles and design considerations of junction devices. Letter grading.

**221B. Physics of Semiconductor Devices II. (4)** Lecture, four hours; outside study, eight hours. Principles and design considerations of field effect devices and charge-coupled devices. Letter grading.

**221C. Microwave Semiconductor Devices. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Physical principles and design considerations of microwave solid-state devices: Schottky barrier mixer diodes, IMPATT diodes, transferred electron devices, tunnel diodes, microwave transistors. Letter grading.

**222. Integrated Circuits Fabrication Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 2. Principles of integrated circuits fabrication processes. Technological limitations of integrated circuits design. Topics include bulk crystal and epitaxial growth, thermal oxidation, diffusion, ion-implantation, chemical vapor deposition, dry etching, lithography, and metallization. Introduction of advanced process simulation tools. Letter grading.

**223. Solid-State Electronics I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Recommended requisite: course 270. Energy band theory, electronic band structure of various elementary, compound, and alloy semiconductors, defects in semiconductors. Recombination mechanisms, transport properties. Letter grading.

**224. Solid-State Electronics II. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 223. Techniques to solve Boltzmann transport equation, various scattering mechanisms in semiconductors, high field transport properties in semiconductors, Monte Carlo method in transport. Optical properties. Letter grading.

**225. Physics of Semiconductor Nanostructures and Devices. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 223. Theoretical methods for circulating electronics and optical properties of semiconductor structures. Quantum size effects and low-dimensional systems. Application to semiconductor nanometer scale devices, including negative resistance diodes, transistors, and detectors. Letter grading.

**229. Seminar: Advanced Topics in Solid-State Electronics. (4)** Seminar, four hours; outside study, eight hours. Requisites: courses 223, 224. Current research areas, such as radiation effects in semiconductor devices, diffusion in semiconductors, optical and microwave semiconductor devices, nonlinear optics, and electron emission. Letter grading.

**229S. Advanced Electrical Engineering Seminar. (2)** Seminar, two hours; outside study, six hours. Preparation: successful completion of PhD major field examination. Seminar on current research topics in solid-state and quantum electronics (Section 1) or in electronic circuit theory and applications (Section 2). Students report on tutorial topic and on research topic in their dissertation area. May be repeated for credit. S/U grading.

**230A. Detection and Estimation in Communication. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 131A. Applications of estimation and detection concepts in communication and signal processing; random signal and noise characterizations by analysis and simulations; mean square (MS) and maximum likelihood (ML) estimations and algorithms; detection under ML, Bayes, and Neyman/Pearson (NP) criteria; signal-to-noise ratio (SNR) and error probability evaluations. Introduction to Monte Carlo simulations. Letter grading.

**230B. Digital Communication Systems. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 132A, 230A. Principles and practical techniques for communication at physical and multiple access layers. Review of communications over Gaussian channel. Synchronization and adaptive equalization. Nonlinear impairments in radio transceivers. Wireless channel models, diversity techniques, and link budgets. Modulations for wireless channels. Multi-antenna methods. Wireless multiple access and resource allocation techniques. Scalable approaches to meeting wireless data rate demand. Letter grading.

**230C. Signal Processing in Communications. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 131A, 230A. Concepts and implementations of signal processing in communication and signal processing systems. Spectral analysis using Fourier transform and windowing, parametric modeling, eigen-decomposition methods, time-frequency analysis, wavelet transform, and sub-band processing. Array processing using beamforming for SNIR enhancement, smart antenna, and source separation and localization. Introduction to compressive sampling and applications. Letter grading.

**230D. Algorithms and Processing in Communication Systems. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 131A, 230A. Review of computational linear algebra methods on QRD, eigen- and singular-value decompositions, and LS estimation with applications to estimation and detection in communication, radar, speech, image, and array processing systems. Systolic and parallel algorithms and VLSI architectures for high performance and high throughput real-time estimation, detection, decoding, and beamforming applications. Letter grading.

**231A. Information Theory: Channel and Source Coding. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 131A. Fundamentals information compression, transmission, processing, and learning. Topics include limits and algorithms for lossless data compression, connections to model estimation and learning, channel capacity, rate versus distortion in lossy compression, and basics of information theory for networks. Letter grading.

**231B. Network Information Theory. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 231A. Point-to-point multiple-input, multiple-output (MIMO) wireless channels: capacity and outage; single-hop networks: multiple access, broadcast, interference, and relay channels; channels and sources with side-information; basics of multiterminal lossy data compression; basics of network information flow over general noisy networks. Letter grading.

**231E. Channel Coding Theory. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 131A. Fundamentals of error control codes and decoding algorithms. Topics include block codes, convolutional codes, trellis codes, and turbo codes. Letter grading.

**232A. Stochastic Modeling with Applications to Telecommunication Systems. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 131A. Stochastic processes as applied to study of telecommunication systems, traffic engineering, business, and management. Discrete-time and continuous-time Markov chain processes. Renewal processes, regenerative processes, Markov-renewal, semi-Markov and semiregenerative stochastic processes. Decision and reward processes. Applications to traffic and queueing analysis of basic telecommunications and computer communication networks, Internet, and management systems. Letter grading.

**232B. Queuing Systems and Intelligent Transportation Networks. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 131A or equivalent. Modeling, analysis, and design of queuing systems; traffic management and design of intelligent transportation systems, communications networks, autonomous vehicular networks, business and management systems. Markovian and non-Markovian queuing systems and networks. Applications to traffic engineering, transportation and autonomous vehicular systems; computer communications, management and business systems. Letter grading.

**232D. Communications Networking and Traffic Management for Autonomous Mobile Systems. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 131A or equivalent. Analysis, design, and traffic management of autonomous mobile systems. Telecommunication networks, mobile wireless networks, and multiple-access communication systems. Networking architectures, multiple-access communications under adaptive quality-of-service metrics. Switching, routing, networking protocols, and Internet. Autonomous mobile networked systems. Cellular wireless networks, WiFi mesh networks, peer-to-peer mobile ad hoc wireless networks. Autonomous transportation networked systems. Traffic management architectures in support of self-driving cars. Smart grid networks. Adaptive multimedia streaming over mobile wireless networks. Embedded sensor networks. Energy and pollution aware sustainable networking. Security mechanisms. Letter grading.

**232E. Large-Scale Social and Complex Networks: Design and Algorithms. (4)** Lecture, four hours; recitation, one hour; outside study, seven hours. Modeling and design of large-scale complex networks, including social networks, peer-to-peer file-sharing networks, World Wide Web, and gene networks. Modeling of characteristic topological features of complex networks, such as power laws and percolation threshold. Mining topology to design algorithms for various applications, such as e-mail spam detection, friendship recommendations, viral popularity, and epidemics. Introduction to network algorithms, computational complexity, and nondeterministic, polynomial-time completeness. Letter grading.

**233. Wireless Communications System Design, Modeling, and Implementation. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 113. Covers algorithms, architec-

tures, and implementation for radio transceivers, physical, and network layer functionalities. Topics include wireless channel modeling, single-carrier and multi-carrier systems, multiple antenna systems, radio impairments and their correction, architectures and circuits design trade-offs, wideband spectrum sensing, wideband signaling, cognitive radio, massive multiple-input, multiple-output (MIMO) systems, and applications in 5G and Internet of things (IoT) communication. Letter grading.

**234A. Network Coding Theory and Applications. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Algebraic approach and main theorem in network coding, combinatorial approach and alphabet size, linear programming approach and throughput benefits, network code design algorithms, secure network coding, network coding for wireless, other applications. Letter grading.

**235A. Mathematical Foundations of Data Storage Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 131A or equivalent. Research developments in new mathematical techniques for emerging large-scale, ultra-reliable, fast, and affordable data storage systems. Topics include, but are not limited to, graph-based codes and algebraic codes and decoders for modern storage devices (e.g., Flash), rank modulation, rewriting codes, algorithms for data deduplication and synchronization, and redundant array of independent disks (RAID) systems. Letter grading.

**236A. Linear Programming. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: Mathematics 115A or equivalent knowledge of linear algebra. Basic graduate course in linear optimization. Geometry of linear programming. Duality. Simplex method. Interior-point methods. Decomposition and large-scale linear programming. Quadratic programming and complementary pivot theory. Engineering applications. Introduction to integer linear programming and computational complexity theory. Letter grading.

**236B. Convex Optimization. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 236A. Introduction to convex optimization and its applications. Convex sets, functions, and basics of convex analysis. Convex optimization problems (linear and quadratic programming, second-order cone and semidefinite programming, geometric programming). Lagrange duality and optimality conditions. Applications of convex optimization. Unconstrained minimization methods. Interior-point and cutting-plane algorithms. Introduction to nonlinear programming. Letter grading.

**236C. Optimization Methods for Large-Scale Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 236B. First-order algorithms for convex optimization: sub-gradient method, conjugate gradient method, proximal gradient and accelerated proximal gradient methods, block coordinate descent. Decomposition of large-scale optimization problems. Augmented Lagrangian method and alternating direction method of multipliers. Monotone operators and operator-splitting algorithms. Second-order algorithms: inexact Newton methods, interior-point algorithms for conic optimization. Letter grading.

**M237. Dynamic Programming. (4)** (Same as Mechanical and Aerospace Engineering M276.) Lecture, four hours; outside study, eight hours. Recommended requisite: course 232A or 236A or 236B. Introduction to mathematical analysis of sequential decision processes. Finite horizon model in both deterministic and stochastic cases. Finite-state infinite horizon model. Methods of solution. Examples from inventory theory, finance, optimal control and estimation, Markov decision processes, combinatorial optimization, communications. Letter grading.

**238. Multimedia Communications and Processing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 131A. Key concepts, principles, and algorithms of online learning and learning how to make decisions under uncertainty in broad context, including Markov decision processes, optimal stopping, reinforcement learning,

structural results for online learning, multiarmed bandits learning, multiagent learning, multiagent deep learning. Letter grading.

**239AS. Special Topics in Signals and Systems. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Special topics in one or more aspects of signals and systems, such as communications, control, image processing, information theory, multimedia, computer networking, optimization, speech processing, telecommunications, and VLSI signal processing. May be repeated for credit with topic change. S/U or letter grading.

**239BS. Seminar: Signals and Systems. (2 to 4)** Seminar, two to four hours; outside study, four to eight hours. Seminars and discussions on current and advanced topics in one or more aspects of signals and systems, such as communications, control, image processing, information theory, multimedia, computer networking, optimization, speech processing, telecommunications, and VLSI signal processing. May be repeated for credit with topic change. S/U grading.

**M240A. Linear Dynamic Systems. (4)** (Same as Chemical Engineering M280A and Mechanical and Aerospace Engineering M270A.) Lecture, four hours; outside study, eight hours. Requisite: course 141 or Mechanical and Aerospace Engineering 171A. State-space description of linear time-invariant (LTI) and time-varying (LTV) systems in continuous and discrete time. Linear algebra concepts such as eigenvalues and eigenvectors, singular values, Cayley/Hamilton theorem, Jordan form; solution of state equations; stability, controllability, observability, realizability, and minimality. Stabilization design via state feedback and observers; separation principle. Connections with transfer function techniques. Letter grading.

**M240C. Optimal Control. (4)** (Same as Chemical Engineering M280C and Mechanical and Aerospace Engineering M270C.) Lecture, four hours; outside study, eight hours. Requisite: course 240B. Applications of variational methods, Pontryagin maximum principle, Hamilton/Jacobi/Bellman equation (dynamic programming) to optimal control of dynamic systems modeled by nonlinear ordinary differential equations. Letter grading.

**241A. Stochastic Processes. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 131A. Review of basic probability, axiomatic development, expectation, convergence of random processes: stationarity, power spectral density. Response of linear systems to random inputs. Basics of estimation. Special random processes, Markov processes, martingales, etc. Letter grading.

**M242A. Nonlinear Dynamic Systems. (4)** (Same as Chemical Engineering M282A and Mechanical and Aerospace Engineering M272A.) Lecture, four hours; outside study, eight hours. Requisite: course M240A or Chemical Engineering M280A or Mechanical and Aerospace Engineering M270A. State-space techniques for studying solutions of time-invariant and time-varying nonlinear dynamic systems with emphasis on stability. Lyapunov theory (including converse theorems), invariance, center manifold theorem, input-to-state stability and small-gain theorem. Letter grading.

**C243A. Neural Signal Processing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 131A, Mathematics 33A. Topics include fundamental properties of electrical activity in neurons; technology for measuring neural activity; spiking statistics and Poisson processes; generative models and classification; regression and Kalman filtering; principal components analysis, factor analysis, and expectation maximization. Concurrently scheduled with course C143A. Letter grading.

**246. Foundations of Statistical Machine Learning. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: course 131A, Mathematics 33A. Introduction to foundations of statistical machine learning. Overview of several widely used learning algorithms including logistic and linear regression, kernel methods and support vector machine (SVM), ensemble learning methods, decision trees and nearest neighbor classifiers. Connections to information theory through probably approximately correct (PAC) learning, stability, bias-complexity trade-



off, structural risk minimization, minimum description length (MDL), and universal learning. Introduction to representation learning with topics including unsupervised learning, clustering, (non-linear) dimensionality reduction, sketching, parametric distribution estimation including Gaussian mixtures, expectation maximization, non-parametric distribution estimation, property testing and neural networks focused on distribution sampling (variational autoencoders [VAEs], generative adversarial networks [GANs]). Discussion of reinforcement learning. Letter grading.

**C247. Neural Networks and Deep Learning. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 131A, 133A or 205A, and M146, or equivalent. Review of machine learning concepts; maximum likelihood; supervised classification; neural network architectures; backpropagation; regularization for training neural networks; optimization for training neural networks; convolutional neural networks; practical CNN architectures; deep learning libraries in Python; recurrent neural networks, back-propagation through time, long short-term memory and gated recurrent units; variational autoencoders; generative adversarial networks; adversarial examples and training. Concurrently scheduled with course C147. Letter grading.

**M248S. Seminar: Systems, Dynamics, and Control Topics. (2)** (Same as Chemical Engineering M297 and Mechanical and Aerospace Engineering M299A.) Seminar, two hours; outside study, six hours. Limited to graduate engineering students. Presentations of research topics by leading academic researchers from fields of systems, dynamics, and control. Students who work in these fields present their papers and results. S/U grading.

**M250B. Microelectromechanical Systems (MEMS) Fabrication. (4)** (Same as Bioengineering M250B and Mechanical and Aerospace Engineering M280B.) Lecture, three hours; discussion, one hour; outside study, eight hours. Enforced requisite: course M153. Advanced discussion of micromachining processes used to construct MEMS. Coverage of many lithographic, deposition, and etching processes, as well as their combination in process integration. Materials issues such as chemical resistance, corrosion, mechanical properties, and residual/intrinsic stress. Letter grading.

**M252. Microelectromechanical Systems (MEMS) Device Physics and Design. (4)** (Same as Bioengineering M252 and Mechanical and Aerospace Engineering M282.) Lecture, four hours; discussion, one hour; outside study, seven hours. Introduction to MEMS design. Design methods, design rules, sensing and actuation mechanisms, microsensors, and micro-actuators. Designing MEMS to be produced with both foundry and nonfoundry processes. Computer-aided design for MEMS. Design project required. Letter grading.

**M255. Neuroengineering. (4)** (Same as Bioengineering M260 and Neuroscience M206.) Lecture, four hours; laboratory, three hours; outside study, five hours. Requisites: Mathematics 32A, Physics 1B or 5C. Introduction to principles and technologies of bioelectricity and neural signal recording, processing, and stimulation. Topics include bioelectricity, electrophysiology (action potentials, local field potentials, EEG, ECG), intracellular and extracellular recording, microelectrode technology, neural signal processing (neural signal frequency bands, filtering, spike detection, spike sorting, stimulation artifact removal), brain-computer interfaces, deep-brain stimulation, and prosthetics. Letter grading.

**M256A-M256B-M256C. Evaluation of Research Literature in Neuroengineering. (2-2-2)** (Same as Bioengineering M261A-M261B-M261C and Neuroscience M212A-M212B-M212C.) Discussion, two hours; outside study, four hours. Critical discussion and analysis of current literature related to neuroengineering research. S/U grading.

**M257. Nanoscience and Technology. (4)** (Same as Mechanical and Aerospace Engineering M287.) Lecture, four hours; outside study, eight hours. Introduction to fundamentals of nanoscale science and technology. Basic physical principles, quantum mechanics, chemical bonding and nanostructures, top-down and bottom-up (self-assembly) nanofabrication;

nanocharacterization; nanomaterials, nanoelectronics, and nanobiodetection technology. Introduction to new knowledge and techniques in nano areas to understand scientific principles behind nanotechnology and inspire students to create new ideas in multidisciplinary nano areas. Letter grading.

**260A. Advanced Engineering Electrodynamics. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 101B, 162A. Advanced treatment of concepts in electrodynamics and their applications to modern engineering problems. Vector calculus in generalized coordinate system. Solutions of wave equation and special functions. Reflection, transmission, and polarization. Vector potential, duality, reciprocity, and equivalence theorems. Scattering from cylinder, half-plane, wedge, and sphere, including radar cross-section characterization. Green's functions in electromagnetics and dyadic calculus. Letter grading.

**260B. Advanced Engineering Electrodynamics. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 101B, 162A, 260A. Advanced treatment of concepts and numerical techniques in electrodynamics and their applications to modern engineering problems. Differential geometry of curves and surfaces. Geometrical optics and geometrical theory of diffraction. Physical optics techniques. Asymptotic techniques and uniform theories. Integral equations in electromagnetics. Numerical techniques based on method of moments. Letter grading.

**261. Microwave and Millimeter Wave Circuits. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 163A. Rectangular and circular waveguides, microstrip, stripline, finline, and dielectric waveguide distributed circuits, with applications in microwave and millimeter wave integrated circuits. Substrate materials, surface wave phenomena. Analytical methods for discontinuity effects. Design of passive microwave and millimeter wave circuits. Letter grading.

**262. Antenna Theory and Design. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 162A. Antenna patterns. Sum and difference patterns. Optimum designs for rectangular and circular apertures. Arbitrary side lobe topography. Discrete arrays. Mutual coupling. Design of feeding networks. Letter grading.

**263. Reflector Antennas Synthesis, Analysis, and Measurement. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 260A, 260B. Reflector pattern analysis techniques. Single and multireflector antenna configurations. Reflector synthesis techniques. Reflector feeds. Reflector tolerance studies, including systematic and random errors. Array-fed reflector antennas. Near-field measurement techniques. Compact range concepts. Microwave diagnostic techniques. Modern satellite and ground antenna applications. Letter grading.

**266. Computational Methods for Electromagnetics. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 162A, 163A. Computational techniques for partial differential and integral equations: finite-difference, finite-element, method of moments. Applications include transmission lines, resonators, integrated circuits, solid-state device modeling, electromagnetic scattering, and antennas. Letter grading.

**270. Applied Quantum Mechanics. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Preparation: modern physics (or course 123A), linear algebra, and ordinary differential equations courses. Principles of quantum mechanics for applications in lasers, solid-state physics, and nonlinear optics. Topics include eigenfunction expansions, observables, Schrödinger equation, uncertainty principle, central force problems, Hilbert spaces, WKB approximation, matrix mechanics, density matrix formalism, and radiation theory. Letter grading.

**271. Classical Laser Theory. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 170A. Microscopic and macroscopic laser phenomena and propagation of optical pulses using classical formalism. Letter grading.

**272. Dynamics of Lasers. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 271. Ultra-short laser pulse characteristics, generation, and measurement. Gain switching, Q switching, cavity dumping, active and passive mode locking. Pulse compression and soliton pulse formation. Nonlinear pulse generation: soliton laser, additive-pulse mode locking, and parametric oscillators. Pulse measurement techniques. Letter grading.

**273. Nonlinear Photonics. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 170A. Recommended: course 271. Nonlinear optical susceptibilities. Coupled-wave and coupled-mode theories. Crystal optics, electro-optics, and magneto-optics. Nonlinear optical interactions, sum- and difference-frequency generation, harmonic and parametric generation, stimulated Raman and Brillouin scattering, field-induced index changes and self-phase modulation. Nonlinear photonic devices. Nonlinear guided-wave photonics and devices. Letter grading.

**274. Optical Communication and Sensing Design. (4)** Lecture, three hours; outside study, nine hours. Requisites: courses 170A and 170B or equivalent. Top-down introduction to physical layer design in fiber optic communication systems, including Telecom, Datacom, and CATV. Fundamentals of digital and analog optical communication systems, fiber transmission characteristics, and optical modulation techniques, including direct and external modulation and computer-aided design. Architectural-level design of fiber optic transceiver circuits, including preamplifier, quantizer, clock and data recovery, laser driver, and predistortion circuits. Letter grading.

**M275. Micro- and Nanoscale Biosensing for Molecular Diagnostics. (4)** (Same as Bioengineering M273.) Lecture, four hours; discussion, one hour; outside study, seven hours. Covers state-of-art and emerging biosensors in context of molecular diagnostics. Students learn relevant biology and biochemistry pertinent to molecular diagnostics. Students gain thorough understanding of interfaces between bioparticles, biofluids, and electronics. Topics include biosensor performance parameters, modes of detection, sample preparation challenges, microfluidics, and emerging wearable biosensing platforms, as well as proteomics, genomics, and DNA sequencing technologies. Letter grading.

**279AS. Special Topics in Physical and Wave Electronics. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Special topics in one or more aspects of physical and wave electronics, such as electromagnetics, microwave and millimeter wave circuits, photonics and optoelectronics, plasma electronics, microelectromechanical systems, solid state, and nanotechnology. May be repeated for credit with topic change. S/U or letter grading.

**279BS. Seminar: Physical and Wave Electronics. (2 to 4)** Seminar, two to four hours; outside study, four to eight hours. Seminars and discussions on current and advanced topics in one or more aspects of physical and wave electronics, such as electromagnetics, microwave and millimeter wave circuits, photonics and optoelectronics, plasma electronics, microelectromechanical systems, solid state, and nanotechnology. May be repeated for credit with topic change. S/U grading.

**279CS. Clean Green IGERT Brown-Bag Seminar. (1)** Seminar, one hour. Required of students in Clean Energy for Green Industry (IGERT) Research. Literature seminar presented by graduate students and experts from around country who conduct research in energy harvest, storage, and conservation. S/U grading.

**CM282. Science, Technology, and Public Policy. (4)** (Same as Public Policy CM282.) Lecture, three hours. Recent and continuing advances in science and technology are raising profoundly important public policy issues. Consideration of selection of critical policy issues, each of which has substantial ethical, social, economic, political, scientific, and technological aspects. Concurrently scheduled with course CM182. Letter grading.

**285A. Plasma Waves and Instabilities. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 101A, and M185 or Physics M122. Wave phe-

nomina in plasmas described by macroscopic fluid equations. Microwave propagation, plasma oscillations, ion acoustic waves, cyclotron waves, hydro-magnetic waves, drift waves. Rayleigh/Taylor, Kelvin/Helmholtz, universal, and streaming instabilities. Application to experiments in fully and partially ionized gases. Letter grading.

**285B. Advanced Plasma Waves and Instabilities. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses M185, and 285A or Physics 222A. Interaction of intense electromagnetic waves with plasmas: waves in inhomogeneous and bounded plasmas, nonlinear wave coupling and damping, parametric instabilities, anomalous resistivity, shock waves, echoes, laser heating. Emphasis on experimental considerations and techniques. Letter grading.

**M287. Fusion Plasma Physics and Analysis. (4)** (Same as Mechanical and Aerospace Engineering M237B.) Lecture, four hours; outside study, eight hours. Fundamentals of plasmas at thermonuclear burning conditions. Fokker/Planck equation and applications to heating by neutral beams, RF, and fusion reaction products. Bremsstrahlung, synchrotron, and atomic radiation processes. Plasma surface interactions. Fluid description of burning plasma. Dynamics, stability, and control. Applications in tokamaks, tandem mirrors, and alternate concepts. Letter grading.

**M293. Intellectual Property for Technology Entrepreneurs and Managers. (2)** (Same as Management M247.) Seminar, two hours; outside study, four hours. Introduction to intellectual property (IP) in context of technology products and markets. Topics include best practices to put in place before product development starts, how to develop high-value patent portfolios, patent licensing, offensive and defensive IP litigation considerations, trade secrets, opportunities and pitfalls of open source software, trademarks, managing copyright in increasingly complex content ecosystems, and adopting IP strategies to globalized marketplaces. Includes case studies inspired by complex IP questions facing technology companies today. S/U or letter grading.

**295. Academic Technical Writing for Electrical Engineers. (3)** Seminar, three hours. Designed for electrical engineering PhD students who have completed preliminary examinations. Students read models of good writing and learn to make rhetorical observations and writing decisions, improve their academic and technical writing skills by writing and revising conference and journal papers, and practice writing for and speaking to various audiences, including potential students, engineers outside their specific fields, and non-engineers (colleagues outside field, policymakers, etc.). Students write in variety of genres, all related to their professional development as electrical engineers. Emphasis on writing as vital way to communicate precise technical and professional information in distinct contexts, directly resulting in specific outcomes. S/U grading.

**296. Seminar: Research Topics in Electrical Engineering. (2)** Seminar, two hours; outside study, four hours. Advanced study and analysis of current topics in electrical engineering. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**297. Seminar Series: Electrical Engineering. (1)** Seminar, 90 minutes; outside study, 90 minutes. Limited to graduate electrical engineering students. Weekly seminars and discussion by invited speakers on research topics of heightened interest. S/U grading.

**298. Seminar: Engineering. (2 to 4)** Seminar, to be arranged. Limited to graduate electrical engineering students. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change. S/U or letter grading.

**299. MS Project Seminar. (4)** Seminar, to be arranged. Required of all MS students not in thesis option. Supervised research in small groups or individually under guidance of faculty mentor. Regular meetings, culminating report, and presentation required.

Individual contract required; enrollment petitions available in Office of Graduate Student Affairs. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**M495. Teaching Preparation Seminar: Teaching and Writing Pedagogies for Electrical Engineers. (2)** (Same as English Composition M495K.) Seminar, two hours. Limited to graduate electrical engineering students. Required of all departmental teaching assistants (TAs). May be taken concurrently while holding a TA appointment. Seminar on pedagogy and logistics of being a TA with emphasis on student-centered teaching, clear communication, and multimodal teaching and learning. S/U grading.

**596. Directed Individual or Tutorial Studies. (2 to 8)** Tutorial, to be arranged. Limited to graduate electrical engineering students. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for MS Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. Limited to graduate electrical engineering students. Reading and preparation for MS comprehensive examination. S/U grading.

**597B. Preparation for PhD Preliminary Examinations. (2 to 16)** Tutorial, to be arranged. Limited to graduate electrical engineering students. S/U grading.

**597C. Preparation for PhD Oral Qualifying Examination. (2 to 16)** Tutorial, to be arranged. Limited to graduate electrical engineering students. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 12)** Tutorial, to be arranged. Limited to graduate electrical engineering students. Supervised independent research for MS candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Limited to graduate electrical engineering students. Usually taken after students have been advanced to candidacy. S/U grading.

## EMERGENCY MEDICINE

*David Geffen School of Medicine*

924 Westwood Boulevard, Suite 300  
Box 951777  
Los Angeles, CA 90095-1777

**Emergency Medicine**  
310-794-0578

Gregory W. Hendey, MD, *Chair*

### Overview

The Department of Emergency Medicine focuses on the teaching and management of diagnosis and treatment of unforeseen illness or injury. The practice of emergency medicine includes the initial evaluation, diagnosis, treatment, coordination of care among multiple providers, and disposition of any patient requiring expeditious medical, surgical, or psychiatric care. A three- or four-week subinternship rotation is offered to fourth-year medical students. The length of training in the residency program is four years.

For details on the Department of [Emergency Medicine](#) and courses offered, see the department website.

[Emergency Medicine faculty](#) information is available from the department.

## ENGINEERING SCHOOLWIDE PROGRAMS

*Henry Samueli School of Engineering and Applied Science*

6426 Boelter Hall  
Box 951601  
Los Angeles, CA 90095-1601

**Engineering Schoolwide Programs**  
310-825-9580

### Overview

The Henry Samueli School of Engineering and Applied Science offers several schoolwide graduate degree programs.

### Graduate Study

The Samueli School offers the Master of Engineering (MEng) degree, Master of Science (MS) online degree in Engineering, and Engineer (Engr) degree as schoolwide degrees. The following area-specific online degrees have also been established: MS in Engineering–Aerospace, MS in Engineering–Computer Networking, MS in Engineering–Electrical, MS in Engineering–Electronic Materials, MS in Engineering–Integrated Circuits, MS in Engineering–Manufacturing and Design, MS in Engineering–Materials Science, MS in Engineering–Mechanical, MS in Engineering–Signal Processing and Communication, and MS in Engineering–Structural Materials.

A certificate of specialization is available in all areas of specialization.

### Graduate Majors

### Engineer

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Engineering

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more de-

tailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Aerospace MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Computer Networking MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Electrical MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Electronic Materials MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Integrated Circuits MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Manufacturing and Design MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Materials Science MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Mechanical MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Signal Processing and Communication MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering–Structural Materials MS

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available on the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Engineering Lower-Division Courses

**2. Technology and Society.** (2) Lecture, two hours; discussion, one hour; outside study, three hours. Introduction of broader societal opportunities, impacts, and challenges associated with technology. Drawing from historical and contemporary examples, consideration of some of ethical, policy, and legal questions spurred by rapid technological change. Development of perspectives to take broad, contextualized view of role of technology in society. Letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. First-Year Engineering Transition Bridge.** (2) Seminar, 18 hours (two weeks). Designed primarily for new students to help them understand UCLA, its culture, structure (quarter system), and academic policies; and to facilitate their transition from high school to college. Examination of research on first-year experience of college students, studying at UCLA versus high school, policies and procedures, and campus resources. Advanced preparation and early exposure to fall quarter mathematics, chemistry, and computer science curricula. Collaborative learning techniques and community-building activities are integral processes to both day and evening programs. Intensive classroom instruction and collaborative learning workshops. May be repeated for credit. Offered in summer only. P/NP grading.

**21. Computing Immersion Summer Experience.** (2) Seminar, 18 hours (three weeks). Designed primarily for new students to help them understand UCLA, its culture, structure (quarter system), and academic policies; and to facilitate their transition from high school/community college to university. Designed to immerse incoming computing students in foundation concepts and principles of computer science, with focus on fundamental computer programming principles, methodologies, and techniques. Basic concepts of programming and C++ computing language. Offered in summer only. P/NP grading.

**22. Summer Bridge Review for Enhancing Engineering Students.** (2) Seminar, 18 hours (two weeks). Designed primarily for new students to help them understand UCLA, its culture, structure (quarter system), and academic policies; and to facilitate their transition from community college to university. Intensive introduction of advanced topics covered in upper-division engineering courses. May be repeated for credit. Offered in summer only. P/NP grading.

**23. Finding Industry Internship.** (2) Seminar, two hours; outside study, four hours. Designed to engage engineering students in process of formal career development. Students learn about various components of internship/job application and practice preparing relevant materials. Prepares students for career-related social interactions. Development of skills and insights to successfully secure future opportunities, such as first industry internship. P/NP grading.

**24. Finding Undergraduate Research Opportunity.** (2) Seminar, two hours; outside study, four hours. Designed to engage engineering students, primarily those without prior experience, in process of soliciting, securing, and beginning research. Students learn about various methods and resources used to obtain laboratory position. Exploration of opportunities and guidance on how to approach those openings. Offers students smooth transition into research laboratory. P/NP grading.

**25. Communicating Undergraduate Research Results.** (2) Seminar, two hours; outside study, four hours. Designed to engage engineering students in process of communicating formal research. Students learn about various components required in publishing research. Offers templates and examples as guides for understanding technical presentations and writing. Development of skills and insights to successfully publish first research project. P/NP grading.

**26. Finding Entry-Level Job.** (2) Seminar, two hours; discussion, two hours; outside study, two hours. Designed to engage engineering students in process of getting ready to graduate and need help joining workforce. Focus on how to apply to entry-level positions in engineering field, and specifically industries that value engineering degree over technical experience. Offers suggestions to overcome typical barriers students encounter in securing entry-level position including students with no industry internships, lack of professional network, lack of hands-on technical experience, low grade-point average, lack of student organization extracurricular activities, international students, Deferred Action for Childhood Arrivals (DACA) students, and other low-confidence students. Students learn about various components of job application, practice preparing relevant materials, and prepare for career-related social interactions. Students develop skills and insights to successfully secure entry-level job as soon as possible after graduation. P/NP grading.

**87. Introduction to Engineering Disciplines.** (4) Lecture, four hours; discussion, four hours; outside study, four hours. Introduction to engineering as professional opportunity for freshman students by exploring difference between engineering disciplines and functions engineers perform. Development of skills and techniques for academic excellence through team process. Investigation of national need underlying current effort to increase participation of historically underrepresented groups in U.S. technological work force. Letter grading.

**95. Internship Studies in Engineering.** (1 to 4) Tutorial, one hour. Limited to first years/sophomores. Internship studies course supervised by associate dean or designated faculty members. Further supervision to be provided by organization for which students are doing internship. Students may be required to meet on regular basis with instructor and provide periodic reports of their experience. May not be applied toward major requirements. May be repeated for credit. Individual contract with associate dean required. P/NP grading.

**96A. Introduction to Engineering Design.** (2) Lecture, one hour; laboratory, one hour; outside study, four hours. Introduction to engineering design while building teamwork and communication skills and examination of engineering majors offered at UCLA and of engineering careers. Completion of hands-on engineering design projects, preparation of short report describing projects, and presentation of results. Specific project details and relevant majors explored vary with instructor. May be repeated once for credit with topic or instructor change. Letter grading.

**96B. Introduction to Engineering Design: Digital Imaging.** (2) Lecture, one hour; laboratory, one hour; outside study, four hours. Recommended for undergraduate Aerospace Engineering, Bioengineering, Computer Science, Electrical Engineering, and Mechanical Engineering majors. Introduction to engineering design while building teamwork and communication skills and examination of engineering majors offered at UCLA and of engineering careers. Hands-on experience with state-of-art solid-state imaging devices. How to focus, expose, record, and manipulate tele-scopic images. Development of photographic tech-

nology from early chemical experiments to wide spread use of cell phone camera. Completion of hands-on engineering design projects, preparation of short report describing projects, and presentation of results. Letter grading.

**96C. Cybernetics: Introduction to Robotic Control Systems.** (2) Lecture, one hour; laboratory, one hour; outside study, four hours. Complete introduction to robotics control systems that are critical and rapidly growing engineering technology with expanding societal impact. Designed to support entry-level students with primary principles of modern control systems. Students are provided with essential background in formal principles. Includes breakthrough technology providing hands-on experience with physical robotics control systems. Extensive use of graphical and animation methods to support understanding of mathematical concepts. Hands-on systems are provided in laboratory sections for each student for system design and characterization. Students connect personal computers to robotic control system and have real-time access for configuration and control. Convenient computing tools are provided to support each design method, as well as real-time visualization and performance characterization. Letter grading.

**96E. Introduction to Engineering Design: Electrocardiogram.** (2) Lecture, 90 minutes; laboratory, 90 minutes; outside study, three hours. Students learn and use concepts and techniques in electrical circuit design and analysis, cardiac electrophysiology, biophysics, microcontrollers, and computer programming. Students work in teams to design, construct, and test circuit boards capable of measuring human electrocardiograms by capturing data with microcontroller, with computer analysis and display. Students present their designs orally and in writing. Letter grading.

**96G. Introduction to Engineering Design: Go-Karts.** (2) Lecture, 90 minutes; laboratory, 90 minutes; outside study, three hours. Students learn and use concepts and techniques in computer-aided design, finite element analysis, machining, electric motor performance, steering linkages, and general mechanical design and assembly to work in teams and construct and test go-karts. Students present their designs orally and in writing. Letter grading.

**96I. Introduction to Engineering Design: Internet of Things.** (2) (Formerly numbered 96C.) Lecture, one hour; laboratory, one hour; outside study, four hours. Recommended for undergraduate Aerospace Engineering, Bioengineering, Computer Science, Electrical Engineering, and Mechanical Engineering majors. Introduction to engineering design while building teamwork and communication skills and examination of engineering majors offered at UCLA and of engineering careers. Hands-on experience with state-of-art Internet of things (IoT) technology to offer students opportunity to rapidly develop innovative and inspiring systems that provide ideal introduction to computing systems and IoT applications specific to their major field. IoT technology has become one of most important advances in technology history with applications ranging from wearable devices for healthcare to residential monitoring systems, natural resource protection and management, intelligent vehicles and transportation systems, robotics systems, and energy conservation. Completion of hands-on engineering design projects, preparation of short report describing projects, and presentation of results. Letter grading.

**96R. Introduction to Engineering Design: Rockets.** (2) Lecture, 90 minutes; laboratory, 90 minutes; outside study, three hours. Introduction to basic concepts in aerospace engineering, computer-aided design, finite element analysis, 3D printing, carbon fiber layup, telemetry, general mechanical design and assembly, and machine shop fabrication. Concepts applied to team-based design, construction, and testing of small 3D-printed rockets and larger, high-power rockets. Students present their designs orally and in writing, and evaluate their performance against other student teams. Rockets fired from Mojave Desert launch site in class field trip. No prior experience or coursework needed. Study led by experienced undergraduate

members of Bruin Rocket Project. Meetings, and design and fabrication homework, make use of Maker-space facilities and tools. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**102. Synthetic Biosystems and Nanosystems Design.** (4) Lecture, four hours; outside study, eight hours. Prerequisites: course M101, Life Sciences 3. Introduction to current progress in engineering to integrate biosciences and nanosciences into synthetic systems, where biological components are reengineered and rewired to perform desirable functions in both intracellular and cell-free environments. Discussion of basic technologies and systems analysis that deal with dynamic behavior, noise, and uncertainties. Design project in which students are challenged to design novel biosystems and nanosystems for nontrivial task required. Letter grading.

**M103. Environmental Nanotechnology: Implications and Applications.** (4) (Same as Civil Engineering M165.) Lecture, four hours; discussion, two hours; outside study, six hours. Recommended prerequisite: course M101. Introduction to potential implications of nanotechnology to environmental systems as well as potential application of nanotechnology to environmental protection. Technical contents include three multidisciplinary areas: (1) physical, chemical, and biological properties of nanomaterials, (2) transport, reactivity, and toxicity of nanoscale materials in natural environmental systems, and (3) use of nanotechnology for energy and water production, plus environmental protection, monitoring, and remediation. Letter grading.

**110. Introduction to Technology Management and Economics for Engineers.** (4) Lecture, four hours; discussion, one hour; outside study, seven hours. Fundamental principles of micro-level (individual, firm, and industry) and macro-level (government, international) economics as they relate to technology management. How individuals, firms, and governments impact successful commercialization of high technology products and services. Letter grading.

**111. Introduction to Finance and Marketing for Engineers.** (4) Lecture, four hours; discussion, one hour; outside study, seven hours. Critical components of finance and marketing research and practice as they impact management of technology commercialization. Internal (within firm) and external (in marketplace) marketing and financing of high-technology innovation. Concepts include present value, future value, discounted cash flow, internal rate of return, return on assets, return on equity, return on investment, interest rates, cost of capital, and product, price, positioning, and promotion. Use of market research, segmentation, and forecasting in management of technological innovation. Letter grading.

**112. Laboratory to Market, Entrepreneurship for Engineers.** (4) Lecture, four hours; discussion, one hour; outside study, seven hours. Critical components of entrepreneurship, finance, marketing, human resources, and accounting disciplines as they impact management of technology commercialization. Topics include intellectual property management, team building, market forecasting, and entrepreneurial finance. Students work in small teams studying technology management plans to bring new technologies to market. Students select from set of available technology concepts, many generated at UCLA, that are in need of plans for movement from laboratory to market. Letter grading.

**113. Product Strategy.** (4) Lecture, four hours; discussion, one hour; outside study, seven hours. Designed for juniors/seniors. Introduction to current management concept of product development. Topics include product strategy, product platform, and product lines; competitive strategy, vectors of differen-



tiation, product pricing, first-to-market versus fast-follower; growth strategy, growth through acquisition, and new ventures; product portfolio management. Case studies, class projects, group discussions, and guest lectures by speakers from industry. Letter grading.

**116. Statistics for Management Decisions. (4)** Lecture, four hours; outside study, eight hours. Management as well as engineering decisions nearly always take place in environment characterized by uncertainty. Probability provides mathematical framework for understanding how to make rational decisions when outcomes of actions are uncertain. Application of probability to problem of reasoning from sample data, encompassing estimation, hypothesis testing, and regression analysis. Discussion of specific analytical techniques needed in later courses in program. Development of basic understanding of statistical analysis. Letter grading.

**120. Entrepreneurship for Scientists and Engineers. (2)** Seminar, two hours; outside study, four hours. Designed for seniors and graduate students. Identification of business opportunities and outline of basic requisites for viable business plans, followed by specific topics related to securing basic assets and resources needed to execute those plans. P/NP grading.

**160. Entrepreneurship and Venture Initiation for Engineers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Not open to students with credit for Management 160. Focus on process and methodology for starting new venture. Introduction to entrepreneurship from perspective of entrepreneur. Examination of core concepts and frameworks on idea generation, market analysis, fundraising, corporate structures, and financial accounting for entrepreneurial endeavors. Focus on fundamentals of building business, and also emphasis on inherent experiential nature of entrepreneurship and need for constant learning on this subject. Letter grading.

**163. Entrepreneurship and New Product Development for Engineers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Limited to juniors/seniors. Not open to students with credit for Management 163. Designed to deepen understanding of innovations and innovative processes related to creating new products. Inquiry into why, what, and how of making new products. New products are essential to any business (start-up or well-established) and thriving economies. Making successful new products requires various types of innovation. Availability of digital technologies and global outsources have accelerated pace of these innovations. Letter grading.

**170. Project-Based Technology Bootcamp for Social Impact. (4)** Seminar, two hours; offsite work, five hours; outside study, five hours. Study of design thinking covering various business, technology, and interpersonal topics such as data analysis, user interface and user experience, how to pitch, and collaboration. Application of learned skills to define social-impact problem and build solution in student teams coached by industry professionals. May be repeated for credit. P/NP or letter grading.

**180. Engineering of Complex Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Designed for junior/senior engineering majors. Holistic view of engineering discipline, covering life-cycle of engineering, processes, and techniques used in industry today. Multidisciplinary systems engineering perspective in which aspects of electrical, mechanical, material, and software engineering are incorporated. Three specific case studies in communication, sensor, and processing systems included to help students understand these concepts. Special attention paid to link material covered to engineering curriculum offered by UCLA to help students integrate and enhance their understanding of knowledge already acquired. Motivation of students to continue their learning and reinforce lifelong learning habits. Letter grading.

**181EW. Ethical Negotiation in Technology. (4)** Lecture, five hours; discussion, three hours; outside study, four hours. Requisite: English Composition 3, 3D, 3DS, 3E, or 3SL. Not open for credit to students with credit for course 182EW, 183EW, 185EW, or 188EW. Focuses on negotiation and complex ethical issues

that emerge as result in areas such as biotechnology, information technology, nanotechnology, and energy technology. Discussion of nature of these issues; their ethical, legal, and social ramifications; and what society values in relation to these issues. Writing and revision of about 20 pages total, including two essays and one analysis of a negotiation from an ethical perspective. Satisfies engineering writing requirement. Letter grading.

**182EW. Technology and Law. (4)** Lecture, four hours; discussion, three hours; outside study, five hours. Requisite: English Composition 3, 3D, 3DX, 3E, or 3SL. Not open for credit to students with credit for course 181EW, 183EW, 185EW, or 188EW. Places engineering in broader societal context through examination of some of key ethical, legal, and regulatory issues and frameworks relevant to design and deployment of emerging technology products and services. Historical examination of ethical and legal frameworks generally and in relation to technology. Exploration of series of specific contemporary technology-related topics to examine their broader ramifications. Topics may include driverless cars, algorithms and artificial intelligence, social media, digital privacy, and impact of technology on employment. Offers students tools enabling them to think more proactively and holistically about ethical and societal dimensions of their work as technology creators. Satisfies engineering writing requirement. Letter grading.

**183EW. Engineering and Society. (4)** Lecture, four hours; discussion, three hours; outside study, five hours. Enforced requisite: English Composition 3, 3D, 3DS, 3E, or 3SL. Not open for credit to students with credit for course 181EW, 182EW, 185EW, or 188EW. Limited to sophomore/junior/senior engineering students. Professional and ethical considerations in practice of engineering. Impact of technology on society and on development of moral and ethical values. Contemporary environmental, biological, legal, and other issues created by new technologies. Emphasis on research and writing within engineering environments. Writing and revision of about 20 pages total, including two individual technical essays and one team-written research report. Readings address technical issues and writing form. Satisfies engineering writing requirement. Letter grading.

**185EW. Art of Engineering Endeavors. (4)** Lecture, four hours; discussion, three hours; outside study, five hours. Enforced requisite: English Composition 3, 3D, 3DS, 3E, or 3SL. Not open for credit to students with credit for course 181EW, 182EW, 183EW, or 188EW. Designed for junior/senior engineering students. Non-technical skills and experiences necessary for engineering career success. Importance of group dynamics in engineering practice. Teamwork and effective group skills in engineering environments. Organization and control of multidisciplinary complex engineering projects. Forms of leadership and qualities and characteristics of effective leaders. How engineering, computer sciences, and technology relate to major ethical and social issues. Societal demands on practice of engineering. Emphasis on research and writing in engineering environments. Satisfies engineering writing requirement. Letter grading.

**188. Special Courses in Engineering. (4)** Seminar, four hours; outside study, eight hours. Special topics in engineering for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated for credit with topic or instructor change. Letter grading.

**188EW. Experimental Courses in Engineering Ethics. (4)** Lecture, four hours; discussion, three hours; outside study, five hours. Enforced requisite: English Composition 3, 3D, 3DS, 3E, or 3SL. Not open for credit to students with credit for course 181EW, 182EW, 183EW, or 185EW. Limited to junior/senior engineering students. Professional and ethical considerations in practice of engineering and computer science. Emphasis on research and writing within engineering and computer science. Writing and revision of about 20 pages total, including two individual technical essays. Readings address technical issues and writing form. Satisfies engineering writing requirement. Letter grading.

**191. Seminar Series in Engineering Research. (1)** Seminar, one hour. Seminar series in cutting-edge engineering research at UCLA. Each seminar is given by UCLA graduate student researcher or post-doctoral scholar. Designed to be accessible to undergraduate students in any science, technology, engineering, and mathematics (STEM) major. Offers undergraduate students window into excitement of graduate student research experience. Also offers opportunity for graduate students to learn about what their peers are doing. P/NP grading.

**192. Fundamentals of Engineering Mentorship. (2)** Seminar, two hours; outside study, four hours. Principles and practical techniques for instruction of hands-on engineering design projects. Curriculum planning, project preparation, classroom management, team collaboration, diversity awareness, fostering of group cohesion, and emergency procedures. Preparation of lessons and projects for academic year courses and high school summer outreach program, with practice presentations. May be repeated for credit. P/NP grading.

**195. Internship Studies in Engineering. (1 to 4)** Tutorial, one hour. Limited to juniors/seniors. Internship studies course supervised by associate dean or designated faculty members. Further supervision to be provided by organization for which students are doing internship. Students may be required to meet on regular basis with instructor and provide periodic reports of their experience. May not be applied toward major requirements. May be repeated for credit. Individual contract with associate dean required. P/NP grading.

**199. Directed Research in Engineering. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**200. Program Management Principles for Engineers and Professionals. (4)** Lecture, four hours; outside study, eight hours. Designed for graduate students. Practical review of necessary processes and procedures to successfully manage technology programs. Review of fundamentals of program planning, organizational structure, implementation, and performance tracking methods to provide program manager with necessary information to support decision-making process that provides high-quality products on time and within budget. Letter grading.

**201. Systems Engineering. (4)** Lecture, four hours; outside study, eight hours. Designed for graduate students. Practical review of major elements of system engineering process. Coverage of key elements: system requirements and flow down, product development cycle, functional analysis, system synthesis and trade studies, budget allocations, risk management metrics, review and audit activities and documentation. Letter grading.

**202. Reliability, Maintainability, and Supportability. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 201. Designed for graduate students with one to two years work experience. Integrated logistic support (ILS) is major driver of system life-cycle cost and one key element of system engineering activities. Overview of engineering disciplines critical to this function—reliability, maintainability, and supportability—and their relationships, taught using probability theory. Topics also include fault detections and isolations and parts obsolescence. Discussion of 6-sigma process, one effective design and manufacturing methodology, to ensure system reliability, maintainability, and supportability. Letter grading.

**203. System Architecture. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 201. Designed for graduate students with BS degrees in engineering or science and one to two years work experience in selected domain. Art and science of architecting. Introduction to architecting methodology—paradigm and tools. Principles of architecting through analysis of architecture designs of major existing sys-



tems. Discussion of selected elements of architectural practices, such as representation models, design progression, and architecture frameworks. Examination of professionalization of system architecting. Letter grading.

**204. Trusted Systems Engineering. (4)** Lecture, four hours; outside study, eight hours. Trust is placed in information systems to behave properly, but cyber threats and breaches have become routine, including penetration of financial, medical, government, and national security systems. To build systems that can protect confidentiality, integrity, and availability involves more than composing systems from network security, computer security, data security, cryptography, etc. One can use most secure components, and resulting system could still be vulnerable. Skills learned ensure that systems are architected, designed, implemented, tested, and operated for specific levels of trust. Aspects include assessing vulnerability and risk for systems, establishing protection principles, and using them as guide to formulate system architectures; translating architecture into system design and verifying correctness of design; and constructing and following trusted development and implementation process. Letter grading.

**205. Model-Based Systems Engineering. (4)** Lecture, four hours; outside study, eight hours. Model-based systems engineering (MBSE) and systems modeling language (SysML) taught through lectures and readings, individual projects, and one group project. Lectures and readings to provide students with conceptual framework and vocabulary. Individual projects enable students to develop basic skills for creating SysML requirements and structural and behavioral diagrams. In group project students learn how to package, compartmentalize, and integrate smaller efforts while being constrained to meet schedules. Industry-recognized credentials may be obtained, as course covers Object Management Group (OMG) Certified Systems Modeling Professional (OCSMP) tests, such as Model User and Model Builder Fundamentals and Model Builder Intermediate. Letter grading.

**206. Engineering for Systems Assurance. (4)** Lecture, four hours; outside study, eight hours. Recommended requisites: course 204, Computer Science 236. Systems are constructed to perform complex functions and services. How to understand needs of users, analysis of requirements and derived requirements, creation of various system architecture products, and design and integration of various components into systems that perform these functions and services. System assurance addresses confidence that systems meet specified operational requirements based on evidence provided by applying assurance techniques. Introduction, investigation, and analysis of framework of assurance to accomplish total system assurance. Development of secure, reliable, and dependable systems that range from commercial realm such as air traffic control, Supervisory Control and Data Acquisition (SCADA), and autonomous vehicles to military realm such as command, control, communication, intelligence, and cyber. Letter grading.

**210. Operations and Supply Chain Management. (4)** Lecture, four hours; outside study, eight hours. Introduction to strategic and operating issues and decisions involved in managing enterprises. Operational processes use organization's resources to transform inputs into goods and utilizes them to provide service, or does both. Conceptual framework and set of analytical tools provided to enable students to better understand why processes behave as they do. Given this understanding, students are able to involve themselves in organization's defining strategic decisions, those related to key processes affecting organizational unit's performance. Letter grading.

**211. Financial Management. (4)** Lecture, four hours; outside study, eight hours. Introduction to concepts reflecting material generally covered in certain MBA core and elective courses. Integration of both theory—to introduce essential conceptual building blocks in accounting and finance—and empirical practice—to emphasize how these theories are actually implemented in real world. Cases, comprehensive prob-

lems, and recent events presented to provide students with as much hands-on experience in applying material presented as possible. Letter grading.

**212. Intellectual Property Law and Strategy. (4)** Lecture, four hours; outside study, eight hours. Prior knowledge of legal doctrines or materials not required. Intellectual property law is not just topic for lawyers. Engineers who have design responsibilities must understand how legal system in some instances protects their designs and in other instances stands as obstacle to what would otherwise be most efficient design choice. Engineers with management responsibilities must understand intellectual property law implications for everything from pricing to strategic partnerships. Examination of intellectual property law, not only by learning fundamental rules associated with patent, copyright, trademark, and trade secret protection, but by studying business strategies that these rules support. Examples and case studies to be taken from across content, technology, and pharmaceutical industries. Letter grading.

**213. Data and Business Analytics. (4)** Lecture, four hours; outside study, eight hours. Coverage of wide variety of spreadsheet models that can be used to solve business and engineering problems, with emphasis on mastery of Excel spreadsheet modeling as integral part of analytic decision making. Managerial models include data modeling, regression and forecasting, linear programming, network and distribution models, integer programming, nonlinear programming, and Monte Carlo simulation. Problems from operations, finance, and marketing taught by spreadsheet examples and describe general managerial situations from various industries and disciplines. Development of spreadsheet models to facilitate decision making. Letter grading.

**214. Management Communication. (4)** Lecture, four hours. Exploration of knowledge, attributes, skills, and strategies necessary to succeed communicatively in workplace, with focus on business presentation skills, visual and verbal persuasion skills, and interpersonal communication skills. Letter grading.

**215. Entrepreneurship for Engineers. (4)** Lecture, four hours; outside study, eight hours. Limited to graduate engineering students. Topics in starting and developing high-tech enterprises and intended for students who wish to complement their technical education with introduction to entrepreneurship. Letter grading.

**299. Capstone Project. (4)** Activity, 10 hours. Preparation: completion of minimum of four 200-level courses in online MS program. Project course that satisfies UCLA final comprehensive examination requirement of MS online degree in Engineering. Project is completed under individual guidance from UCLA Engineering faculty member and incorporates advanced knowledge learned in MS program of study. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**470A-470D. Engineer in Technical Environment. (3 each)** Lecture, three hours; outside study, six hours. Limited to Engineering Executive Program students. Theory and application of quantitative methods in analysis and synthesis of engineering systems for purpose of making management decisions. Optimization of outputs with respect to dollar costs, time, material, energy, information, and manpower. Case studies and individual projects. S/U or letter grading.

**471A-471B-471C. Engineer in General Environment. (3-3-1.5)** Lecture, three hours (courses 471A, 471B) and 90 minutes (course 471C). Limited to Engineering Executive Program students. Influences of human relations, laws, social sciences, humanities, and fine arts on development and utilization of natural and human resources. Interaction of technology and society past, present, and future. Change agents and resistance to change. S/U or letter (471A) grading; In Progress (471B) and S/U or letter (471C) grading.

**472A-472D. Engineer in Business Environment. (3-3-3-1.5)** Lecture, three hours (courses 472A, 472B, 472C) and 90 minutes (course 472D). Limited to Engineering Executive Program students. Language of business for engineering executive. Accounting, finance, business economics, business law, and marketing. Laboratory in organization and management problem solving. Analysis of actual business problems of firm, community, and nation, provided through cooperation and participation with California business corporations and government agencies. In Progress (472A, 472C) and S/U or letter grading (credit to be given on completion of courses 472B and 472D).

**473A-473B. Analysis and Synthesis of Large-Scale System. (3-3)** Lecture, two and one half hours; outside study, six hours. Limited to Engineering Executive Program students. Problem area of modern industry or government is selected as class project, and its solution is synthesized using quantitative tools and methods. Project also serves as laboratory in organization for goal-oriented technical group. In Progress (473A) and S/U (473B) grading.

**495A. Teaching Assistant Training Seminar. (4)** Seminar, four hours; outside study, eight hours. Preparation: appointment as teaching assistant. Limited to graduate engineering students. Seminar on communication of engineering principles, concepts, and methods, preparation, organization of material, presentation, use of visual aids, grading, advising, and rapport with students. S/U grading.

**M495I. Teaching Preparation Seminar: Writing for Engineers. (4)** (Same as English Composition M495I.) Seminar, two and one half hours; outside study, nine and one half hours. Limited to graduate students. Required of all teaching assistants for Engineering writing courses not exempt by appropriate departmental or program training. Training and mentoring, with focus on composition pedagogy, assessment of student writing, guidance of revision process, and specialized writing problems that may occur in engineering writing contexts. Practical concerns of preparing students to write course assignments, marking and grading essays, and conducting peer reviews and conferences. S/U grading.

**M495J. Supervised Teaching of Writing for Engineers. (2)** (Same as English Composition M495J.) Seminar, one hour; outside study, five hours. Enforced requisite: course M495I. Required of all teaching assistants in their initial term of teaching Engineering writing courses. Mentoring in group and individual meetings. Continued focus on composition pedagogy, assessment of student writing, guidance of revision process, and specialized writing problems that may occur in engineering writing contexts. Practical concerns of preparing students to write course assignments, marking and grading essays, and conducting peer reviews and conferences. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

## ENGLISH

*College of Letters and Science*

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English

310-825-4173

Department e-mail

Saree Makdisi, PhD, Chair

## Faculty Roster

### Professors

Blake Allmendinger, PhD  
 Ali Behdad, PhD (*John Charles Hillis Professor of Literature*)  
 Adam F. Bradley, PhD  
 Joseph E. Bristow, PhD  
 Christine N. Chism, PhD  
 Michael J. Colacurcio, PhD  
 Frederick M. D'Aguiar, BA  
 Elizabeth M. DeLoughrey, PhD  
 Helen E. Deutsch, PhD  
 Barbara Fuchs, PhD  
 Alicia Gaspar de Alba, PhD  
 Yogita Goyal, PhD  
 Jonathan H. Grossman, PhD  
 Ursula K. Heise, PhD (*Marcia H. Howard Term Professor of Literary Studies*)  
 Eric Jager, PhD  
 Eleanor K. Kaufman, PhD  
 Rachel C. Lee, PhD  
 Jinqi Ling, PhD  
 Christopher J. Looby, PhD  
 Marissa K. López, PhD  
 Saree Makdisi, PhD  
 Kirstie M. McClure, PhD  
 Claire E. McEachern, PhD  
 Kathleen A. McHugh, PhD  
 Haryette R. Mullen, PhD  
 Anahid J. Nersessian, PhD  
 Michael A. North, PhD  
 Rafael Pérez-Torres, PhD  
 Michael P. Rothberg, PhD (*1939 Society Samuel Goetz Professor of Holocaust Studies*)  
 Mark I. Seltzer, PhD (*Evan Frankel Endowed Professor of English*)  
 Jennifer A. Sharpe, PhD  
 Debora K. Shuger, PhD  
 Mona E. Simpson, MFA  
 Brian K. Stefans, MFA  
 Alexandra Minna Stern, PhD  
 Robert N. Watson, PhD  
 Richard A. Yarborough, PhD

### Professors Emeriti

Charles L. Batten, Jr., PhD  
 Calvin B. Bedient, PhD  
 Albert R. Braunmuller, PhD  
 King-Kok Cheung, PhD  
 Patrick K. Ford, PhD  
 Lowell Gallagher, PhD  
 Robert A. Georges, PhD  
 James E. Goodwin, PhD  
 Christopher W. Grose, PhD  
 George R. Guffey, PhD  
 N. Katherine Hayles, PhD (*John Charles Hillis Professor Emerita of Literature*)  
 Henry Ansgar Kelly, PhD  
 Jascha Kessler, PhD  
 Gordon L. Kipling, PhD  
 Richard A. Lanham, PhD  
 Richard D. Lehan, PhD  
 Kenneth R. Lincoln, PhD  
 Robert M. Maniquis, PhD  
 Anne K. Mellor, PhD  
 Joseph F. Nagy, PhD  
 Maximillian E. Novak, DPhil, PhD  
 Felicity A. Nussbaum, PhD

Raymund A. Paredes, PhD  
 Jonathan F.S. Post, PhD  
 Kenneth Reinhard, PhD  
 George S. Rousseau, PhD  
 Karen E. Rowe, PhD  
 Paul D. Sheats, PhD  
 Donka Minkova Stockwell, PhD  
 Eric J. Sundquist, PhD (*UCLA Foundation Professor Emeritus*)  
 Stephen I. Yenser, PhD

### Associate Professors

Michael C. Cohen, PhD  
 Matthew N. Fisher, PhD  
 Louise E. Hornby, PhD  
 Mitchum A. Huehls, PhD  
 Carrie L. Hyde, PhD  
 Sarah T. Kareem, PhD  
 Arthur L. Little, Jr., PhD  
 Uri G. McMillan, PhD  
 David J. Russell, PhD  
 Cristobal S. Silva, PhD  
 Caroline A. Streeter, PhD  
 Arvind Thomas, PhD

### Assistant Professors

Rebecca Foote, PhD  
 Summer Kim Lee, PhD  
 Alexander M. Mazzaferro, PhD  
 Ho'esta Mo'e'hahne, PhD  
 Daniel S. Snelson, PhD  
 Justin J. Torres, MFA  
 Erica M. Weaver, PhD

### Senior Lecturers SOE

Stephen J. Dickey, PhD  
 David Stuart Rodes, PhD, *Emeritus*

### Senior Lecturers

Karen J. Cunningham, PhD, *Emerita*  
 Christopher M. Mott, PhD

### Lecturers

Joseph A. Dimuro, PhD  
 Michelle R. Huneven, MFA  
 Colleen M. Jaurrette, PhD  
 Reed D. Wilson, PhD

### Adjunct Associate Professor

Jeffrey L. Decker, PhD

## Overview

The Department of English is dedicated to the study of the literatures and cultures of those parts of the world in which English is a primary language. Although committed to no single method or approach, the department requires a knowledge of British, American, and Anglophone literary history and an engagement with a range of methodological approaches that foster intellectual curiosity and critical thinking and encourage its students to be not only expert readers and writers but engaged and ethical citizens.

An understanding and appreciation of literature can furnish lifelong rewards. In addition to offering students such personal benefits, the department seeks to foster critical analysis and lucid writing and to teach them to think about how language and representation function in the world. Such skills are essential to success in a variety of professions for which the major in

English can provide excellent preparation, including law, administration, business, teaching, media, and entertainment.

## Undergraduate Study

The department offers Bachelor of Arts (BA) degrees in English and in American Literature and Culture. When selecting courses to fulfill requirements for the majors, students are expected to choose those courses that best reflect their own interests and simultaneously contribute toward a coherent program in literary studies.

## Undergraduate Policies

Students must have completed the Entry-Level Writing requirement before taking any courses in English (other than English Composition 1 or 2). For more information, see [Entry-Level Writing](#) in Undergraduate Study.

## Graduate Study

A graduate program leading to the Master of Arts (MA) degree is available for students who wish to continue the study of literature at an advanced level. A parallel program continues to the PhD degree. Because the PhD program may require five years or more, it is intended only for qualified students who are seriously committed to advanced literary scholarship and, in some cases, to a career in college or university teaching.

## Undergraduate Majors

### English BA

Students pursuing the Bachelor of Arts degree in English are expected to meet with the undergraduate counselors and undergraduate faculty adviser to plan and follow a course of study that incorporates their interests and goals with the fulfillment of requirements for the degree.

### Capstone Program

The English major is a designated capstone program. Students have the option of completing a capstone seminar or other culminating work that enables them to use knowledge and skills acquired through previous coursework to engage, under the guidance of a faculty member, in literary research or other creative projects that result in a final paper or other product.

### Learning Outcomes

The English major has the following learning outcomes:

- Proficiency in a broad knowledge/skill set including research methods, critical thinking, and analytical writing
- Familiarity with basic project material including data from multiple sources
- Familiarity with relevant scholarly and current debates in the field
- Conception and execution of an independent project
- Demonstrated seminar or workshop skills

- Demonstrated oral and written communication skills
- Demonstrated defense-of-scholarship skills

## Entry to the Major

### Transfer Students

Transfer applicants to the English major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one English composition course, one English critical reading and writing course, one year of English literature survey courses, and either (1) level five or equivalent in any one foreign language or (2) level three or equivalent in one foreign language and two additional courses in foreign language or literature in translation.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* English Composition 3, English 4W or 4HW or 4WX, 10A, 10B, 10C taken in the stated sequence (each course is a requisite for the next course), and either (1) level five or equivalent in any one foreign language or (2) level three or equivalent in one foreign language and two additional courses in foreign language or literature in translation.

### The Major

*Required:* Ten 4- or 5-unit upper-division English courses, including (1) four historical period courses, one from each of the following four periods: (a) *literatures in English to 1500*—course 140A through 148 or indicated sections of 149, (b) *literatures in English, 1500 to 1700*—course 150A through 157, 166A, indicated sections of 159 or 159R, (c) *literatures in English, 1700 to 1850*—course 160A through 165C, 166B through 168, or indicated sections of 169 or 169R or 176, and (d) *literatures in English, 1850 to present*—course M101B, M101C, M102A, M102B, M104A through M104D, M105B through M105E, 116B, 130, 131, 164B, 164C, 164D, 167A, 167B, 168, 170A through 174C, 179, or 179R, or indicated sections of 176; (2) three breadth courses, one from each of three of the following four areas: (a) *gender, race, ethnicity, disability, and sexuality studies*—English 100 through 109, M126, 135, 155, 163C, 165B, 166C, or indicated sections of 119, 139, 149, 159, 159R, 169, 169R, 179, or 179R, (b) *imperial, transnational, and postcolonial studies*—course M105A through M105D, 106, 112D, 128, 130 through 135, 154, 157, 163B, 164D, 165A, 166A, 166B, 176, or indicated sections of 149, 159, 159R, 169, 169R, 179, or 179R, (c) *genre studies, interdisciplinary studies, critical theory*—course 111A through 129, 144, 146, 147, 153, 156, 161A, 161B, 161C, 163A, 163C, 164A through 164D, 167A, 167B, 171A through 177, or indicated sections of 149, 159, 159R, 169, 169R, 179, or 179R, and (d) *creative writing*—courses 136, 137, M138; (3) two elective courses (English 195CE is not applicable); (4) one seminar from course 180 through 184, or M191A through M191E.

Admission to creative writing workshops (courses 136, 137, M138) is by application only.

### Honors Program

Students must take one theory course from English 120 through 128 no later than winter quarter of the junior year. In spring quarter of the junior year, students must take course 191H. During fall and winter quarters of the senior year, students must take courses 198A and 198B, in which they write a thesis under the direction of a faculty member.

## Policies

### Preparation for the Major

A grade of C or better is required in each of English Composition 3, English 4W or 4HW or 4WX, 10A, 10B, 10C. A foreign literature in translation course list is available under [Foreign Literature in Translation](#). Transfer students who have satisfied the College of Letters and Science foreign language requirement at the high-school level through the Intersegmental General Education Transfer Curriculum (IG-ETC) program may satisfy the departmental requirement with five foreign literature in translation courses. The courses may be taken on a Passed/Not Passed (P/NP) grading basis.

### The Major

Each course applied toward requirements for the major must be 4 or 5 units and be taken for a letter grade.

## Honors Program

### Admission

The honors program is open to majors with a 3.5 departmental and a 3.25 overall grade-point average (GPA). Students with lower GPAs may petition for admission to the program, but these grade-point averages must be achieved before graduation in order to qualify for honors. Students should apply by winter quarter of the junior year. For application forms and more information, contact the departmental counselor.

### Requirements

The one theory course from English 120 through 128 may fulfill one of three required breadth courses. Course 191H may fulfill one of the two electives for the major. Course 198B may fulfill the second of the two electives for the major.

Students in the creative writing concentration are required to have completed or been accepted into their third workshop in a single genre prior to or concurrent with enrollment in course 191H.

The thesis determines whether highest honors, honors, or no honors are received.

## American Literature and Culture BA

Students are expected to meet with the undergraduate counselors and undergraduate faculty adviser to plan and follow a course of study that incorporates their interests and goals with the fulfillment of requirements for the degree.

## Capstone Program

The American Literature and Culture major is a designated capstone program. Students have the option of completing a capstone seminar or other culminating work that enables them to use knowledge and skills acquired through previous coursework to engage, under the guidance of a faculty member, in literary research or other creative projects that result in a final paper or other product.

## Learning Outcomes

The American Literature and Culture major has the following learning outcomes:

- Proficiency in a broad knowledge/skill set including research methods, critical thinking, and analytical writing
- Familiarity with basic project material including data from multiple sources
- Familiarity with relevant scholarly and current debates in the field
- Conception and execution of an independent project
- Demonstrated seminar or workshop skills
- Demonstrated oral and written communication skills
- Demonstrated defense-of-scholarship skills

## Entry to the Major

### Transfer Students

Transfer applicants to the American Literature and Culture major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one English composition course, one English critical reading and writing course, and either (1) level five or equivalent in any one foreign language or (2) level three or equivalent in one foreign language and two additional courses in foreign language or literature in translation.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* English Composition 3, English 4W or 4HW or 4WX taken in the stated sequence (English Composition 3 is requisite to any English 4 course), 11, 87, and either (1) level five or equivalent in any one foreign language or (2) level three or equivalent in one foreign language and two additional courses in foreign language or literature in translation.

### The Major

*Required:* Ten 4- or 5-unit upper-division English courses, at least two in the time period before 1848 and two in the time period after 1848, selected from the following three areas with a minimum of two selected from each area: (a) *origins—beginnings, events, and trajectories: studying the making of America in its myriad beginnings and manifestations*—courses 100, M102A, M104A, 166A, 166B, 166C, 167A, 167B, 170A, or, when treating American topics, M101B, 106, 123, 131, 139,



169, (b) *identities: places, communities, and environments: studying people, collectives and movements across the diverse geographies of the Americas*—courses 100, M102A, M102B, M104A through M104E, M105A through M105E, 106, 115A, 117, 135, 168, 170B, 170C, 172C, 173A, 173B, 173C, 174A, 174B, 174C, 175, 176, 177, and, when treating American topics, courses M101B, M101C, M101D, M103, M107A, M107B, 108, 109, 118E, M118F, 119, 119XP, M126, 132, 133, 134, 139, (c) *media: aesthetics, genres, and technologies*—courses 115A, 167A, 167B, 168, 170A, 170B, 170C, 172C, 173A, 173B, 173C, 174A, 174B, 174C, 175, 177, or, when treating American topics, courses 114, 115C, 115D, 115E, M115XP, 116A, 116B, 121 through 127, 129, 139, 169, 169R, 179, 179R; (2) one seminar from M105XP, 183A, 183B, 183C, M191A, M191B, M191C, or, when treating American topics, 180, 181A, 181B, 182E, 182F, 184, M191D, M191E; and (3) two courses pertaining to American culture offered by other departments from a list of approved courses for the major. Courses 195 and 195CE are not applicable.

## Honors Program

### Requirements

Students must take one theory course from English 120 through 128 no later than winter quarter of the junior year. In spring quarter of the junior year, students must take course 191H. During fall and winter quarters of the senior year, they take courses 198A and 198B, in which they write a thesis under the direction of a faculty member.

## Policies

### Preparation for the Major

A grade of C or better is required in each of English Composition 3, English 4W or 4HW or 4WX, 11, 87. A foreign literature in translation course list is available under [Foreign Literature in Translation](#). Transfer students who have satisfied the College of Letters and Science foreign language requirement at the high-school level through the Intersegmental General Education Transfer Curriculum (IGETC) program may satisfy the departmental requirement with five foreign literature in translation courses. The courses may be taken on a Passed/Not Passed (P/NP) grading basis.

### The Major

Each course applied toward requirements for the major must be at least 4 units and be taken for a letter grade.

## Honors Program

### Admission

The honors program is open to majors with a 3.5 departmental and a 3.25 overall grade-point average (GPA). Students with lower GPAs may petition for admission to the program, but these grade-point averages must be achieved before graduation in order to qualify for honors. Students should apply by winter quarter of the junior year. For application forms and more information, contact the departmental counselor.

## Requirements

The one theory course from English 120 through 128 may fulfill one of three required breadth courses. Course 191H may fulfill one of the two electives for the major. Course 198B may fulfill the second of the two electives for the major.

Students in the creative writing concentration are required to have completed or been accepted into their third workshop in a single genre prior to or concurrent with enrollment in course 191H.

The thesis determines whether they receive highest honors, honors, or no honors.

# Undergraduate Minors

## Creative Writing Minor

The creative writing minor allows students to develop the craft of poetry writing or short fiction writing, as well as to explore other and emerging areas of writing practice such as creative nonfiction, screenwriting, playwriting, hybrid genres, and electronic forms. The minor is excellent preparation for those who seek to pursue advanced degrees in writing, as well as for those who seek to pursue careers in writing and the creative industries.

## Admission

To enter the minor, students must (1) have an overall grade-point average of 2.0 or better, (2) have completed the required lower-division courses, (3) have completed one upper-division course in poetry writing (English 136A or 136B) or short fiction writing (English 137A or 137B), and (4) submit a brief letter of application, a writing sample (at least 10 pages of prose or 7 to 10 poems), and a PDF copy of their degree audit report.

## The Minor

*Required Lower-Division Courses (9–10 units):* One course selected from English 4HW, 4W, or 4WX; and one additional course selected from English 10C, 11, 20, or 20W.

*Required Upper-Division Courses (24–25 units):* One course in a core genre selected from English 136A, 136B, 137A, or 137B; one advanced course in the same core genre selected from English 136B or 137B; one additional advanced course in the same genre, or one intermediate or advanced course in the other genre, or one creative writing topics course selected from English 136A, 136B, 137A, 137B, or M138; one or two elective courses selected from Asian American Studies 112C, Chicana/o and Central American Studies CM135, English M101B, M101C, M102B, M104B, M104C, M104D, M105C, 136A, 136B, 137A, 137B, M138, 170C, 171B, 171C, 172B, 173B, 173C, 174B, 174C, M192 (must be taken twice), or English Composition M138; and one capstone course culminating in a project with a creative writing focus selected from English 184, 195CE, 198B, or 199.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor. At least 15 upper-division units applied toward the minor must be taken in residence during the regular academic year (excluding summer sessions) at UCLA. Transfer credit is subject to department approval; consult with the undergraduate counselors before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade (except elective courses offered only on a Passed/Not Passed (P/NP) basis; no more than 4 units of P/NP coursework may be applied), and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## English Minor

The English minor is designed for students who wish to enhance their major program with the benefits of intensive study of English language and literatures, including a better understanding and appreciation of literatures in English and improvement in critical thinking, reading, and writing skills.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better, have completed English 10A with a grade of C or better, and have satisfied the English Composition 3 requirement and completed English 4W. Students must file a petition to declare the minor by meeting with a student affairs officer in the [Undergraduate Counseling Office](#), 158/160 Kaplan Hall, 310-825-1389. This allows them priority enrollment in many upper-division courses.

## The Minor

*Required Lower-Division Courses (10 units):* English 10B and 10C, with grades of C or better.

*Required Upper-Division Courses (25 units):* Five courses selected from English 100 through M191E, including one course in literatures in English written before 1700 (see course lists 1a and 1b under English BA, [the major](#)) and one other course in literatures in English written before 1850 (see course lists 1a, 1b, and 1c under English BA, [the major](#)).

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor. At least 15 upper-division units applied toward the minor must be taken in residence during the regular academic year (excluding summer sessions) at UCLA. Transfer credit is subject to department approval; consult with the undergraduate counselors before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the mi-

nor. Successful completion of the minor is indicated on the transcript and diploma.

## Literature and the Environment Minor

The Literature and the Environment minor provides students with both a solid foundation for literary interpretation and a superstructure that integrates those skills and perspectives with the questions about the past, present, and future of the biosphere. It is designed for undergraduate students who wish to enhance their major program with intensive study of literature in its relationship to the natural environment, while improving their skills in reading, writing, creative and critical thinking, and analysis of complex situations in an ethical frame. The minor examines how different cultural forms (for example, fiction, journalism, poetry, film, design, and other arts) represent environmental issues, including biodiversity, animal studies, wilderness, food, urban ecologies, postcolonial ecologies, environmental justice, and climate change.

### Admission

To enter the minor, students must be in good academic standing with an overall grade-point average of 2.0 or better and have completed English 4HW, 4W, 4WX, or any Writing II course with a grade of C or better. Students must file a petition to declare the minor by meeting with a student affairs officer in the Undergraduate Counseling Office, 158/160 Kaplan Hall, 310-825-1389. For more information, see the [minor website](#).

### The Minor

*Required Lower-Division Courses (10 units):* English 4W, 4HW, 4WX, or any Writing II course, and English M30 (or M30SL), with grades of C or better.

*Required Upper-Division Courses (20 to 24 units):* (1) English 118E and M118F or one additional 118E course on a different topic or one other English course that has a primary focus on environmental issues to be selected from a list available in the [Undergraduate Counseling Office](#) prior to the opening of enrollment each term (students may petition to substitute other courses), (2) one course selected from American Indian Studies C178, Anthropology 133, 166P, Art History 133D, 133E, C145A, Chicana/o and Central American Studies M144, M183, Food Studies M170XP, Geography 130, 136, Honors Collegium 141, 174, Italian 124, Public Policy C115, Russian 122, Urban Planning M120, 121, or CM166 (3) one course selected from Atmospheric and Oceanic Sciences M105, 107, 141, Earth, Planetary, and Space Sciences 101, Ecology and Evolutionary Biology 116, M131, 154, 176, Environment M111, M125, M126, M131, M133, 134, 150, M153, 157, C159, M161, 163, M164, 166, M167, or Environmental Health Sciences 100, (4) one course selected from English 184, 195CE, 197, 198A, 198B, or 199 that culminates in a project focused primarily on literature from an ecocritical or other environmentally focused perspective.

## Policies

Students may petition to substitute an internship course/independent study/directed research course (195CE, 197, 198, or 199) for an elective course as long as it is clearly and predominantly relevant to the topics covered in the minor and falls within the discipline of the requirement for which it serves as a substitute. No more than one upper-division independent study/directed research course (4 or 5 units) may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Professional Writing Minor

The [Professional Writing](#) minor includes the study and practice of originating, designing, and communicating information and ideas. As a discipline, it is the core for creating, debating, and disseminating knowledge in the 21st-century multicultural economy. The minor enables students to expand their knowledge of the practices of writing in a diverse modern society.

Through courses that understand writing broadly—as encompassing written, oral, visual, and electronic multimodal communication—students in the Professional Writing minor acquire deep intellectual and practical skills needed to perform well as good writers within the professions they choose, or to become professional writers with specific areas of academic expertise. All Writing Programs courses in the minor include a segment on digital media.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better, have satisfied the Writing II requirement, and submit a 500-word essay explaining why they want to declare the minor, and how they expect it to relate to their professional lives. [Minor applications](#) are submitted on the English Department website. For more information, contact the Writing Programs adviser, 146 Kaplan Hall, 310-206-1145.

### The Minor

*Required Lower-Division Courses (4-5 units):* Any Writing II course or equivalent.

*Required Upper-Division Courses (26-30 units):* One core course from English Composition 130A through 130E; two courses selected from English 110A, 110C, 110E, 110P, 110V, M191P (or Comparative Literature M191P), M192 (or English Composition M192 or Environment M192), English Composition 131A, 131C, 131D, 132, 133, 134, 136, 137, or English M138 (or English Composition M138) when offered on a nonfiction topic; one course selected from African American Studies M194A (or Education M131A), Asian American Studies C142A, C142B, C142C, Community Engagement and

Social Change 163SL, Communication 109, 110, Dance C184, Digital Humanities 150, Ecology and Evolutionary Biology C179, Education 133, Film, Television, and Digital Media C144, Life Sciences 110, M192A, Music Industry 102, 104A, 110, 122, Research Practice 192B; one additional upper-division course selected from the lists above; and one capstone, cumulative portfolio, independent study, or community and corporate internship course from English 195CE, 197, 199, English Composition 195, or 199.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

No more than one lower-division course may be applied to the minor. Students may petition to substitute courses other than those listed to satisfy elective requirements.

Each minor course must be taken for a letter grade (unless the course is graded only on a P/NP basis; no more than 4 units of P/NP may be applied to the minor), and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### English MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## English

### Lower-Division Courses

**4HW. Critical Reading and Writing (Honors). (5)** Lecture, four hours. Enforced prerequisite: English Composition 3 or 3H or English as a Second Language 36. Introduction to literary analysis, with close reading and carefully written exposition of selections from principal modes of literature: poetry, prose fiction, and drama. Minimum of four papers (three to five pages each) and two in-class essays. Satisfies Writing II requirement. Letter grading.

**4W. Critical Reading and Writing. (5)** Lecture, four hours. Enforced prerequisite: English Composition 3 or 3H or English as a Second Language 36. Introduction to literary analysis, with close reading and carefully written exposition of selections from principal modes of literature: poetry, prose fiction, and drama. Minimum of 15 to 20 pages of revised writing. Satisfies Writing II requirement. Letter grading.

**4WX. Critical Reading and Writing (Community-Engaged Learning). (5)** (Formerly numbered 4WS.) Lecture, four hours; fieldwork, two hours. Enforced prerequisite: English Composition 3. Introduction to literary analysis, with close reading and carefully written exposition of selections from principal modes of literature: poetry, prose fiction, and drama. Minimum of 15 to 20 pages of revised writing. Service learning com-



ponent includes meaningful work with off-campus agency selected by instructor. Satisfies Writing II requirement. Letter grading.

**10A. Literatures in English to 1700. (5)** Lecture, three hours; discussion, one hour. Enforced requisites: English Composition 3 or 3H, English 4W or 4HW. Survey of major writers and genres, with emphasis on tools for literary analysis such as close reading, argumentation, historical and social context, and critical writing. Minimum of three papers (three to five pages each) or equivalent required. P/NP or letter grading.

**10B. Literatures in English, 1700 to 1850. (5)** Lecture, three hours; discussion, one hour. Enforced requisites: English Composition 3 or 3H, English 4W or 4HW, 10A. Survey of major writers and genres, with emphasis on tools for literary analysis such as close reading, argumentation, historical and social context, and critical writing. Minimum of three papers (three to five pages each) or equivalent required. P/NP or letter grading.

**10C. Literatures in English, 1850 to Present. (5)** Lecture, three hours; discussion, one hour. Enforced requisites: English Composition 3 or 3H, English 4W or 4HW, 10A, 10B. Survey of major writers and genres, with emphasis on tools for literary analysis such as close reading, argumentation, historical and social context, and critical writing. Minimum of three papers (three to five pages each) or equivalent required. P/NP or letter grading.

**11. Introduction to American Cultures. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: English Composition 3, English 4W or 4HW or 4WS. Exploration of question of what is meant by America, and hence what is meant by American culture and American studies. Addresses concepts of origins (real or imagined beginnings of cultural formations), identities (narratives of people and places), and media (creative process as manifest in aesthetic forms, artistic movements, and information systems). P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to Creative Writing. (4)** Lecture, four hours; discussion, one hour (when scheduled). Preparation: submission of creative or expository writing samples to screening committee. Enforced requisites: satisfaction of Entry-Level Writing requirement, English Composition 3. Not open for credit to students with credit for course 20W. Designed to introduce fundamentals of creative writing. Emphasis either on poetry, fiction, or drama, depending on wishes of instructor(s) during any given term. Readings from assigned texts and weekly writing assignments required. P/NP or letter grading.

**20W. Introduction to Creative Writing. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: satisfaction of Entry-Level Writing requirement, English Composition 3. Not open for credit to students with credit for course 20. Designed to introduce fundamentals of creative writing and writing workshop experience. Emphasis on poetry, fiction, drama, or creative nonfiction depending on wishes of instructor(s) during any given term. Readings from assigned texts, weekly writing assignments (multiple drafts and revisions), and final portfolio required. Satisfies Writing II requirement. Letter grading.

**M30. Environmental Literature and Culture. (5)** (Same as Environment M30.) Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Introduction to core themes, questions, and methods within interdisciplinary field of environmental humanities. Examination of how different culture forms (e.g., fiction, journalism, poetry, visual art) represent environmental issues. Topics may include biodiversity, wilderness, food, urban ecologies, postcolonial ecologies, environmental justice, and climate change. P/NP or letter grading.

**M30SL. Environmental Literature and Culture (Service Learning). (5)** (Same as Environment M30SL.) Lecture, three hours; discussion, one hour; fieldwork, two hours. Enforced requisite: satisfaction of Entry-Level Writing requirement. Introduction to core themes, questions, and methods within interdisciplinary field of environmental humanities. Examination of how different culture forms (e.g., fiction, journalism, poetry, visual art) represent environmental issues. Topics may include biodiversity, wilderness, food, urban ecologies, postcolonial ecologies, environmental justice, and climate change. Service learning component includes meaningful work with off-campus agency/agencies selected by instructor. P/NP or letter grading.

**31. Apocalypse: Imagining End of World. (5)** Lecture, four hours; discussion, one hour. Imagining that world will come to end is common reaction to crises such as war, genocide, famine, epidemic, and natural disaster. It is also major component of some religious traditions and political movements that aim to change society from ground up. Exploration of narrative templates and visual images that have typically accompanied stories about end of world, historical moment and movement they emerge from, their creators, audiences, and impacts. Exploration of these questions through wide range of textual and visual works from scholarship and journalism to novels, graphic novels, films, and videos. Consideration of how typical story templates, characters, and motifs of apocalypse shape current perceptions of risks, crises, and disasters that range from violent social conflict and revolutionary movements to industrial accidents, epidemics, and climate change. P/NP or letter grading.

**M50. Introduction to Visual Culture. (5)** (Same as Film and Television M50.) Lecture, three hours; discussion, one hour; laboratory, two hours. Enforced requisite: satisfaction of Entry-Level Writing requirement. Study of how visual media, including advertising, still and moving images, and narrative films, influence contemporary aesthetics, politics, and knowledge. P/NP or letter grading.

**51A. Poems and Poets. (5)** Lecture, three hours; discussion, one hour. Offers sample of enormous body of poetry written in English since Middle Ages. Reading of series of celebrated poets and their poems as way of exploring what poetry is and what it is for. Specifically, how works of art respond to conditions of social life as well as intimate personal experience. Consideration of poetry's political power. In-depth discussion about gender, race, class, sexuality, colonial violence, and, broadly, relationship between art and justice. Students are familiarized with key poetic forms, conventions, and techniques; learn how to read poem critically; and get better at putting thoughts in writing. Letter grading.

**60. L.A. Women. (5)** Lecture, four hours. Focus on women writers and filmmakers who live in and write about Los Angeles. Ranging personal essay, memoir, science fiction, romantic comedy, sitcom, and documentary, writers and filmmakers encountered linger and loiter in L.A.'s neighborhoods and their communities that expand, complicate, and enrich what we think we know about City of Angels. Students become particularly attuned to how race, ethnicity, gender, sexuality, and class inform one's orientation to and mobility within L.A. Study of history of L.A., from its more visible areas like Hollywood or Beverly Hills to its edges and outlying spaces like San Fernando Valley, Inland Empire, and East L.A. Students think critically about how women's accounts of living in, or visiting, L.A. have contributed to and intervened within stories city tells about itself. P/NP or letter grading.

**70. Medievalisms: Medieval Literature and Contemporary Culture. (5)** Lecture, four hours; discussion, one hour. Requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to English majors or students with credit for any course in the 140 series. Introduction to medieval texts juxtaposed with modern texts and media to analyze how and why the medieval (in form of crusade, quest, romance, world-construction, etc.) is continually reproduced and transformed in large scale popular productions, novels, film, and television. Textual focus on medieval works in comparison to analysis of 20th- and 21st-

century works may include Beowulf, Sir Gawain and the Green Knight, Le Morte Darthur, Lord of the Rings, Game of Thrones, and Harry Potter. P/NP or letter grading.

**80. Major American Authors. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to English majors or students with credit for any courses in 170 series. Introduction to chief American authors, with emphasis on poetry, nonnarrative prose, and short fiction of such writers as Poe, Dickinson, Emerson, Whitman, Twain, Frost, and Hemingway. P/NP or letter grading.

**85. American Novel. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to English majors or students with credit for any courses in 170 series. Development, with emphasis on form, of American novel from its beginning to present day. Includes works of such novelists as Hawthorne, Fitzgerald, Faulkner, Ellison, and Morrison. P/NP or letter grading.

**87. Topics in American Cultures. (5)** Seminar, three hours. Requisites: English Composition 3, English 4W or 4HW or 4WS, 11. Content varies. Introductory study of diverse peoples, histories, and ideas of America. P/NP or letter grading.

**88A-88Z. Lower-Division Seminars: Special Topics in English. (5 each)** Seminar, three hours. Limited to 15 students. Content varies; see departmental counselor for information. P/NP or letter grading. **88A.** Medieval Literature; **88B.** Renaissance Literature; **88C.** 17th-Century Literature; **88D.** 18th-Century Literature; **88E.** Romantic Literature; **88F.** Victorian Literature; **88G.** 20th-Century British Literature; **88H.** Colonial American Literature; **88I.** 19th-Century American Literature; **88J.** 20th-Century American Literature; **88K.** History of English Language; **88L.** Folklore and Mythology; **88M.** Literature and Society; **88SL.** Service Learning. Seminar, three hours; fieldwork, three hours. Textual analysis, analytical discussion, and written assignments about works of literature that raise issues relevant to contemporary society. Service learning component includes minimum of 20 hours service with agency involved in issues of public advocacy and social justice.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Shakespeare. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Not open for credit to English majors or students with credit for course 150A or 150B. Survey of Shakespeare's plays, including comedies, tragedies, and histories, selected to represent Shakespeare's breadth, artistic progress, and total dramatic achievement. P/NP or letter grading.

**91A. Introduction to Poetry. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Recommended for instructional credential candidates. Study of critical issues (metrics, diction, figurative language, symbolism, irony and ambiguity, form and structure) and aesthetic issues, including evaluative criteria, followed by close critical analysis of selection of representative poems. P/NP or letter grading.

**91B. Introduction to Drama. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Examination of representative plays; readings may range from Greek

to modern drama. Emphasis on critical approaches to dramatic text; study of issues such as plot construction, characterization, special uses of language in drama, methods of evaluation. P/NP or letter grading.

**91C. Introduction to Fiction. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Introduction to prose narrative, its techniques and forms. Analysis of short and long narratives and of critical issues such as plot, characterization, setting, narrative voice, realistic and nonrealistic forms. P/NP or letter grading.

**91D. Introduction to Graphic Fiction. (5)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: satisfaction of Entry-Level Writing requirement. Introduction to popularity and important cultural work of comic books and graphic novels. Emphasis on how text and image combine to create meaning, including problem of appropriateness of comics for serious cultural topics. P/NP or letter grading.

**97H. Honors Research Seminar for Freshmen and Sophomores. (4)** Seminar, three hours. Enforced requisites: English Composition 3, English 4W (or 4HW). Recommended for lower-division students who desire familiarity with research methods in literary studies. Areas may include use of archives; locating, reading, and incorporating secondary criticism; critical and textual studies; history of books. Specific literatures vary with instructor. May not be repeated for credit. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Ways of Reading Race. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: English Composition 3. Introduction to interdisciplinary study of race and ethnicity, with primary focus on literature. Through examination of institutions that form understanding of race—citizenship, nationalism, class, gender, and labor—interrogation of how we come to think of ourselves and others as having race, and effects of such racialized thinking. Course is not about any particular racial or ethnic group, but highlights creation of ethnic categories and their effects on cultural production. P/NP or letter grading.

**M101A. Premodern Queer Literatures and Cultures. (5)** (Same as Gender Studies M105A and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of discrete period of queer literature from beginning to circa 1850. Works by such writers as Sappho, Plato, Marlowe, Shakespeare, and Thomas Gray may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M101B. Queer Literatures and Cultures, 1850 to 1970. (5)** (Same as Gender Studies M105B and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of discrete period of queer literature and culture from circa 1850 to 1970. Works by such authors as Walt Whitman, Radclyffe Hall, Gertrude Stein, Virginia Woolf, Langston Hughes, Tennessee Williams, Henry Blake Fuller, and James Baldwin may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M101C. Queer Literatures and Cultures after 1970. (5)** (Same as Gender Studies M105C and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101C.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Examination of cultural production, specifically literature, produced by queers after Stonewall rebellion in New York in 1969, widely regarded as origins or beginning of modern lesbian and gay rights movement in U.S. Writings and films by such authors as An-

drew Holleran, Leslie Feinberg, Achy Obejas, Essex Hemphill, Audre Lorde, Cheryl Dunye, and Alison Bechdel may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M101D. Studies in Queer Literatures and Cultures. (5)** (Same as Gender Studies M105D and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101D.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Variable specialized studies course in queer literatures and cultures. Topics focus on particular problem or issue in terms of its relationship to queer cultures and writings. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M102A. Historical Survey of Asian American Literature. (5)** (Same as Asian American Studies M112A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Survey of Asian American literature either produced from or thematically reflecting pre-1980 period. Issues include immigration, diaspora, generational conflict, appropriation of cultural traditions, ethnic/gender formation, interethnic dynamics, and social movement. Works by such authors as Edith Eaton, Younghill Kang, Carlos Bulosan, Hisaye Yamamoto, John Okada, Frank Chin, and Maxine Hong Kingston. P/NP or letter grading.

**M102B. Contemporary Asian American Literary Issues and Criticism. (5)** (Same as Asian American Studies M112B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Survey of post-1980 Asian American literature that explores key literary and critical issues, such as race and geography, aesthetics and activism, cultural work and immigrant labor, kinship and sexuality, model minority and Orientalism, and meat versus rice, in study of novels, poetry, performance, memoirs, and essays. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M103. Studies in Disability Literatures. (5)** (Same as Disability Studies M103.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Survey of modes of disability in literature, with specific emphasis on thematic concerns. Topics may include introduction to disability studies; race, gender, and disability; disability narratives; etc. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M104A. Early African American Literature. (5)** (Same as African American Studies M104A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of African American literature from 18th century through World War I, including oral and written forms (folktales, spirituals, sermons; fiction, poetry, essays), by authors such as Phillis Wheatley, Frances Harper, Frederick Douglass, Harriet Jacobs, Charles Chesnut, Booker T. Washington, and Pauline Hopkins. P/NP or letter grading.

**M104B. African American Literature from Harlem Renaissance to 1960s. (5)** (Same as African American Studies M104B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of 20th-century African American literature from New Negro Movement of post-World War I period to 1960s, including oral materials (ballads, blues, speeches) and fiction, poetry, and essays by authors such as Jean Toomer, Claude McKay, Langston Hughes, Nella Larsen, Zora Neale Hurston, Richard Wright, Ann Petry, James Baldwin, Gwendolyn Brooks, and Ralph Ellison. P/NP or letter grading.

**M104C. African American Literature of 1960s and 1970s. (5)** (Same as African American Studies M104C.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of African American literary expression from late 1950s through 1970s. Topics include rise of Black Arts Movement of 1960s and emergence of black women's writing in early 1970s, with focus on authors such as Lorraine Hansberry, Amiri Baraka, Nikki Giovanni, Alice Walker, Toni Morrison, Ishmael Reed, Audre Lorde, Paule Marshall, and Ernest Gaines. P/NP or letter grading.

**M104D. Contemporary African American Literature. (5)** (Same as African American Studies M104D.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introductory survey of African American literature from 1980s to present covering range of genres, with emphasis on diversity of perspectives and styles that have emerged over past 30 years or so. Authors may include Toni Morrison, August Wilson, Octavia Butler, Anna Deavere Smith, June Jordan, Charles Johnson, and Rita Dove. P/NP or letter grading.

**M104E. Topics in African American Literature and Culture. (5)** (Same as African American Studies M104E.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Variable topics lecture course that provides opportunity to cover African American literature from wide range of theoretical, historical, format, and thematic perspectives. Topics may include African American autobiography, 20th-century African American literature and film, black diaspora literature, post-modern African American fiction, Afro-Futurism, and African American satire. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M105A. Early Chicana/Chicano Literature, 1400 to 1920. (5)** (Same as Chicana/o and Central American Studies M105A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of Chicana/Chicano literature from poetry of Triple Alliance and Aztec Empire through end of Mexican Revolution (1920), including oral and written forms (poetry, corridos, testimonios, folklore, novels, short stories, and drama) by writers such as Nezahualcoyotl (Hungry Coyote), Cabaza de Vaca, Lorenzo de Zavala, María Amparo Ruiz de Burton, Eusebio Chacón, Daniel Venegas, and Lorena Villegas de Magón. P/NP or letter grading.

**M105B. Chicana/Chicano Literature from Mexican Revolution to el Movimiento, 1920 to 1970s. (5)** (Same as Chicana/o and Central American Studies M105B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Chicana/Chicano literature from 1920s through Great Depression and World War II, ending with Chicana/Chicano civil rights movement. Oral and written narratives by writers including Conrado Espinoza, Jovita González, Cleofas Jaramillo, Angelico Chávez, Mario Suárez, Oscar Acosta, and Evangelina Vigil. P/NP or letter grading.

**M105C. Chicana/Chicano Literature since el Movimiento, 1970s to Present. (5)** (Same as Chicana/o and Central American Studies M105C.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of Chicana/Chicano literature since 1970s, with particular emphasis on how queer and feminist activism as well as Central and South American migration have shaped 21st-century chicanidad. Oral, written, and graphic fiction, poetry, and drama by writers including John Rechy, Gloria Anzaldúa, Los Bros Hernández, Ana Castillo, and Dagoberto Gilb guide exploration of queer and feminist studies, Reagan generation, immigration debates, and emerging Latina/Latino majority. P/NP or letter grading.

**M105D. Introduction to Latina/Latino Literature. (5)** (Same as Chicana/o and Central American Studies M105D.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of U.S. Latina/Latino literature and introduction to its major critical trends, with emphasis on groups of Caribbean, Mexican, South American, and Central American origin. Representative works read in relation to such topics as relationship between Latina/Latino populations and U.S. cultural sphere, struggle for self-determination, experiences of exile and migration, border zones, enclaves and language, and *mestizaje* and its impact on cultural production. P/NP or letter grading.

**M105E. Studies in Chicana/Chicano and/or Latina/Latino Literature. (5)** (Same as Chicana/o and Central American Studies M105E.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Variable topics course to give students broad introduction to issues and themes in Chicana/Chicano and/or Latina/Latino literature.

Topics include border, immigration, revolution, language, gender, sexuality, and diaspora, among others. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M105XP. Seminar: Chicana/Chicano and/or Latina/Latino Literature—Community-Engaged Learning.** (5) (Formerly numbered M105SL.) (Same as Chicana/o and Central American Studies M105XP.) Seminar, three or four hours; field placement, three or four hours. Enforced requisite: English Composition 3. Specialized studies in Chicana/Chicano and/or Latina/Latino literature. In-depth study of various topics related to Chicano/Latino communities in Southern California, including Chicana/Chicano visions of Los Angeles; immigration, migration, and exile; autobiography and historical change; Chicana/Chicano journalism; and labor and literature. Service learning component includes minimum of 20 hours of meaningful work with agency involved with Chicana/Chicano and/or Latina/Latino community and selected by instructor. P/NP or letter grading.

**106. Studies in Native American and Indigenous Literatures.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of Native American and/or transnational indigenous literary and cultural expression. Topics may include oral traditions and histories, decolonization and sovereignty, identity and place in comparative perspectives, and multiple genres and forms such as novel, poetry, drama, visual arts, dance, song, and film. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M107A. Studies in Women's Writing.** (5) (Same as Gender Studies M107A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Focus on women writers that may include historical, regional, national, or thematic emphasis, with possible topics such as authorship, self-writing, sexuality, gender, and genre. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M107B. Studies in Gender and Sexuality.** (5) (Same as Gender Studies M107B and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M107B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Examination of literary and cultural production through lens of gender and sexuality. Depending on instructor, emphasis may be historical, regional, national, comparative, or thematic and include other intersectional vectors of identity and representation such as race and ethnicity. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**108. Interracial Encounters.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: English Composition 3 or 3H. Study of literary, cultural, and/or cinematic texts produced by people from different ethnic and religious backgrounds and providing comparative cultural perspectives on living in multiethnic societies. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**109. Topics in Race, Ethnicity, Gender, and Sexuality Studies.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. Depending on instructor, emphasis may be historical, regional, national, comparative, or thematic. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**110A. Writing in English Major: Analytical.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: course 4W (or 4HW or 4WS), English Composition 3. Not open for credit to students with credit for course 110T. Improvement and refinement of writing about literature. Focus on writing as process, rewriting, and argument; minimum 15 to 20 pages of writing required. May not be repeated for credit. P/NP or letter grading.

**110C. Public Readers, Public Writers: Writing about Books for 21st-Century Audience.** (5) Lecture, four hours. Requisites: course 4W (or 4HW or 4WS), English Composition 3 (or 3D or 3DS or 3SL). In-depth study and practice of literary and cultural criticism for general audience. Focus on writing as process, re-

writing, and argument; minimum 15 to 20 pages of writing. May not be repeated for credit. P/NP or letter grading.

**110E. Writing in English Major: Advanced Essay.** (5) Seminar, three or four hours. Requisites: course 4W (or 4HW or 4WS), English Composition 3. Enrollment by consent of instructor. Workshop in writing of advanced literary analyses; study of methods and techniques of developing complex critical arguments. Minimum 15 to 20 pages of revised writing required. May not be repeated for credit. P/NP or letter grading.

**110P. Writing in English Major: Pre-Professional Portfolio.** (5) Seminar, four hours. Requisites: course 4W, English Composition 3 or equivalent. Limited to American Literature and Culture and English majors. Writing for professions. Students review written materials completed in previous English courses and develop new documents, projects, and writing samples relevant to success in variety of professions including postgraduate study. Culminates in writing portfolio of each student's work. May not be repeated for credit. P/NP or letter grading.

**110T. Writing in English Major: Transfer Students.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 4W (or 4HW), 10A, 10B, 10C, English Composition 3. Open only to English major transfer students. Not open for credit to students with credit for course 110A. Improvement and refinement of writing about literature and culture. Focus on writing as process, rewriting, and nuanced argument; minimum 15 to 20 pages of writing required. May not be repeated for credit. P/NP or letter grading.

**110V. Variable Topics in Professional Writing.** (5) Lecture, four hours. Requisites: course 4W (or 4HW or 4WS), English Composition 3 (or 3D or 3DS or 3SL). Focus on writing as adaptable, multifaceted professional skill as well as process, rewriting, and argument; minimum 15 to 20 pages of writing. May not be repeated for credit. P/NP or letter grading.

**111A. Hebrew Bible in Translation.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Literary study of Hebrew Bible (Old Testament), with emphasis on literary devices and narrative structures in relation to Judaic historical, political, psychological, philosophical, and theological themes. P/NP or letter grading.

**111B. Christian Biblical Texts in Translation.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Literary study of canonical New Testament and other Christian texts (deuterocanonical, apocryphal, gnostic, etc.), with emphasis on literary devices and narrative structures in relation to Judeo-Christian historical, political, psychological, philosophical, and theological themes. P/NP or letter grading.

**111C. Topics in Biblical Literature.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Recommended: course 111A or 111B. Study of topics in Hebrew Bible and/or New Testament, with attention to particular literary themes, motifs, genres, and modes of interpretation. Discussion of influence of Bible on discrete periods or individual authors in literatures in English. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**112A. Oral Tradition.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of myth, dramatic origins, oral epic, folktale, and ballad. P/NP or letter grading.

**112B. Celtic Mythology.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Survey of early textual materials pertaining to Celtic peoples and their stories, with emphasis on techniques of mythological analysis. P/NP or letter grading.

**112C. Survey of Medieval Celtic Literature.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Knowledge of Irish or Welsh not required. General course dealing with Celtic literature from earliest times to 14th century. P/NP or letter grading.

**112D. Celtic Folklore.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Folkloric traditions of modern Ireland, Scotland, and other Celtic countries, with attention to colonial and postcolonial issues and folkloric methods. P/NP or letter grading.

**112E. Food and Fantasy in Irish Tradition and Literature.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Food, cooking, feeding, eating, and drinking as powerful cultural symbols in Irish oral and literary tradition from medieval to modern times. P/NP or letter grading.

**113A. History of English Language.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study directed toward English majors of main features in grammatical, lexical, and phonetic condition of English language from Indo-European time to present. P/NP or letter grading.

**113B. Introduction to Structure of Present-Day English.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Introduction to techniques of linguistic description as applied to pronunciation, grammar, and vocabulary of modern English. P/NP or letter grading.

**114. Lyric Histories.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Exploration of lyric poetry in English across centuries. Topics may include historical evolution of aesthetic forms, changing concepts of dramatic personae, matter of literary influence, and complex relationship of individual lyric speakers with their social and historical contexts. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**115A. American Popular Literature.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Examination of such popular styles and genres as sentimental literature, sensation fiction, dime novels, crime stories, pornography, science fiction, supernatural tales, Hollywood novels, and other kinds of mass literary expression. P/NP or letter grading.

**115B. British Popular Literature.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Readings in literature of British masses, from 16th-century broadsides to contemporary novels. Examination of social and cultural aspects of literature. P/NP or letter grading.

**115C. Literature for Children and Adolescents.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of historical backgrounds and development of types of children's literature, folklore and oral tradition, criticism, illustration, and bibliography and/or analysis and evaluation of literature intended mainly for students in junior and senior high schools. P/NP or letter grading.

**115D. Detective Fiction.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of British and American detective fiction and literature of detection. P/NP or letter grading.

**115E. Science Fiction.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of science fiction and speculative literatures. P/NP or letter grading.

**M115XP. Community-Based Studies of Popular Literature.** (5) (Formerly numbered M115SL.) (Same as Community Engagement and Social Change M110XP.) Lecture, four hours; discussion, one hour (when scheduled); fieldwork, two hours. Enforced requisite: English Composition 3. Service-learning course that examines history and development of one or more genres of popular literature, with attention to contemporary communities of readers and writers and formation of civil society. Topics vary and may include children's literature and childhood literacy, mass market fiction and book club culture, or science fiction and science policy. Service-learning component includes meaningful work with local nonprofit organizations selected in advance by instructor. May be repeated for credit with topic change. P/NP or letter grading.

**116A. Experimental Fiction. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of novels and short stories that employ playful or experimental practices in language, narrative, hybridity (genre, medium), typography, and other material aspects of text such as binding and book design. Focus generally on texts from 20th century and later, but can include readings dating to beginning of novel. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**116B. Introduction to Electronic Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Overview of literatures involving digital technology, such as hypertext fiction, interactive fiction, animated and interactive poetry, multimedia works, video game narrative, and works employing network protocols and print-based works influenced by digital culture. Basic introduction to new media theory. P/NP or letter grading.

**117. Literature of California and American West. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of literature in English dealing with exploration, settlement, and emergent cultural awareness of Western U.S. P/NP or letter grading.

**118A. Interdisciplinary Studies in Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of literatures in English in relation to other disciplines such as sciences, history, politics, philosophy, music, photography, visual studies, psychology. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**118B. Literature and Other Arts. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Investigation of relationship of literature to one or more other arts, including music (opera, musical theater, popular music, jazz), painting, photography, other visual arts, sculpture and other plastic arts, performance art, dance, architecture. Topics vary and may include not only English literature but foreign literature in translation. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**118C. Studies in Visual Culture. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Study of visual images (photography, film, video) and their relation to literary and/or popular culture. Topics include adaptation, visual analysis, word and image, image and culture, film and visual culture. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**118E. Literature and Environment. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Study of literature from environmental perspectives, including ecological and interdisciplinary consideration of issues such as environmental justice, animal studies, food studies, gender studies, urban and postcolonial ecologies, climate change, cultural biophilia and biophobia, and relationship of literature to sciences. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M118F. Food Cultures and Food Politics. (5)** (Same as Food Studies M132 and Society and Genetics M132.) Lecture, four hours; discussion, one hour (when scheduled). Requisite: English Composition 3. Introduction to interdisciplinary field of food studies, with focus on how literature, art, science writing, and visual culture address political dimensions of food and agriculture in specific contexts. P/NP or letter grading.

**119. Literary Cities. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Exploration of place of literary imagination in making of cities, with focus on questions of cultural exchange, development, migration, urban rebellion, and style. Topics may include meaning of urban space and time, city as urban village or cosmopolitan hub, segregated dystopia or postmodern future, and impact of exile, tourism, and migration in making of cities. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**119XP. Literary Cities—Service Learning. (5)** (Formerly numbered 119SL.) Lecture, four hours; discussion, one hour (when scheduled); fieldwork, two hours. Enforced requisite: English Composition 3. Exploration of place of literary imagination in making of cities, with focus on questions of cultural exchange, development, migration, urban rebellion, and style. Topics may include meaning of urban space and time, city as urban village or cosmopolitan hub, segregated dystopia or postmodern future, and impact of exile, tourism, and migration in making of cities. Service learning component includes meaningful work with local nonprofit organizations selected in advance by instructor. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**120. History of Aesthetics and Critical Theory. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Investigation of texts and ideas in history of aesthetics, critical theory, and interpretation from Greeks through 18th century. Readings may include Gorgias, Plato, Aristotle, Longinus, Biblical hermeneutics, Hume, Descartes, Kant, Schiller, and Hegel. May not be repeated for credit. P/NP or letter grading.

**121. Modern and Contemporary Aesthetics and Critical Theory. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A and 10B, or 11 and 87. Investigation of some dominant trends in 19th- and 20th-century aesthetics, critical theory, and interpretation. Topics may include Marxism, psychoanalysis, structuralism, poststructuralism, feminism, and postcolonialism. May not be repeated for credit. P/NP or letter grading.

**122. Keywords in Theory. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Recommended: courses 120, 121. Taking its model from Raymond Williams' classic vocabulary of culture and society, investigation of fundamental theoretical concepts, or keywords, that have emerged from variety of intellectual disciplines to shape literary and cultural studies. Consideration of lexical development of such keywords; how they alter and enrich assumptions about textuality, readers, and authorship; and how they engender interpretive paradigms and methodologies for study of literature and culture. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**123. Theories of History and Historicism. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Recommended: courses 120, 121. Exploration of theories of history and historicism that offer productive approaches to literary texts. Investigation of how theorists negotiate between abstract concepts of history and situated historical narratives, how histories are constructed, troped, and given authority, how histories constitute past and present in relationship to each other to stabilize tradition or induce change, and complex ways that literary texts operate within and on their historical contexts. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**124. Theories of Religion. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Recommended: courses 120, 121. Examination of relationship between literary and religious practices and traditions. Topics may include legacies of monotheisms, theories of sacrifice, sacrament, gift, and mystical traditions, as well as history of allegory and theological approaches to reading. Selected topics may address literary applications of religious categories as treated in cultural anthropology, philosophy, and critical theory. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**125. Violence in Cultural Theory and Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Recommended: courses 120, 121. Examination of literary, philosophical, religious, and/or psychological texts that theorize causes, effects, political justifications, cultural sublimations, and literary uses and critiques of violence. P/NP or letter grading.

**M126. Feminist and Queer Theory. (5)** (Same as Gender Studies M126 and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M126.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Recommended: one course from 120, 121, Gender Studies 102, 103, or 104. Investigation of key concepts and debates in study of gender, sexuality, and kinship, with focus on their interrelated significance for making of culture. Readings to be interdisciplinary, with possible emphasis on impact of changing ideas of gender and sexuality on specific historical cultures. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**127. Performance, Media, and Cultural Theory. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Recommended: courses 120, 121. Examination of concepts and modes of performance, culture, and/or media, broadly construed. Evaluation of different modes of inquiry around one or more of these concepts, as well as their intersection, in various intellectual traditions, including fields of cultural studies, performance studies, literary analysis, and film theory. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**128. Postcolonial and Transnational Theory. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Recommended: courses 130, 131. Exploration of methodological, aesthetic, and theoretical implications of postcolonial and transnational approaches to study of literature and culture. Topics may include theories of subaltern, orientalist, feminist, and/or indigenous representation and histories and may address representational issues of national sovereignty in wake of globalization and neocolonialism. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**129. Topics in Genre Studies, Interdisciplinary Studies, and Critical Theory. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Recommended: courses 120, 121. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. Depending on instructor, emphasis may be historical, regional, national, comparative, or thematic. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**130. Introduction to Postcolonial Literatures. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Introduction to major themes and issues in postcolonial literature, with focus on contemporary literature and writings produced after decolonization, often engaging history of British or other empires with emphasis on Anglophone writers from Africa, Caribbean, South Asia, and indigenous Pacific. May not be repeated for credit. P/NP or letter grading.

**131. Studies in Postcolonial Literatures. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Strongly recommended: course 130. Survey of how colonialism and decolonization have shaped literary and cultural expression, with specific emphasis on regional or thematic concerns. Topics may include literatures of Africa and African diaspora, environment and empire, Caribbean contact zones, or literatures of indigenous Pacific. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**132. Culture and Imperialism. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Exploration of relationship between culture and imperialism through lens of literary texts to raise questions about what study of empire tells about relationship between power and knowledge. Discussion of shifting patterns and paradigms of imperial rule, including way both metropolitan and peripheral or colonial spaces were transformed. Emphasis may be on particular historical period or may adopt thematic approach, such as Orientalism. Topics may include construction of gender, race, otherness, nature, religion, and nation. May be repeated for credit with topic or instructor change. P/NP or letter grading.



**133. Transatlantic Literatures and Cultures. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of literatures of Atlantic to examine cultural, political, and ideological issues that followed from transatlantic movement of people, ideas, commodities, and cultural artifacts. In addition to literatures of Britain and U.S., coverage may include texts from Africa, Caribbean, Mexico, South America, Spain, and other parts of Europe. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**134. Nationalism and Transnationalism. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Examination of how critical frameworks of nation and migration, transnationalism and globalization, and tradition and modernity frame analysis of literary texts, particularly relationship between literature and national identity. Other topics include nation building in relationship to regional identities as well as discourses of national expansion, diaspora, resettlement, and exile and foundational narratives of nation in relationship to representations of mobility. Genres may include epic, romance, travel narrative, novel, and autobiography. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**135. Literature of Americas. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A and 10B, or 11 and 87. Survey of literatures of Americas, with emphasis on complex ways in which letters of North America, Central America, South America, and Caribbean forge distinctly American perspective on global affairs. Spans literature from age of encounter to 19th-century U.S. American revolution and Latin American independence movements and beyond, considering such topics as empire, colonialism, slavery, transnational dynamics, and cross-cultural transformations among indigenous, European, and African civilizations. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**136A. Creative Writing: Intermediate Poetry. (5)** Seminar, three or four hours. Enforced requisites: courses 4HW or 4W or 20 or 20W, English Composition 3. Not open for credit to students with credit for course 136B. Reading in contemporary poetry and exercises in writing of poetry. Discussion based on assigned reading and on student work. Enrollment in more than one section per term not permitted. May be repeated for maximum of 10 units. P/NP or letter grading.

**136B. Creative Writing: Advanced Poetry. (5)** (Formerly numbered 136.) Seminar, three or four hours. Enforced requisites: courses 4HW or 4W or 20 or 20W, English Composition 3. Further reading in contemporary poetry and exercises in writing of poetry. Some classroom discussion based on assigned reading, but most on student work. Enrollment in more than one section per term not permitted. May be repeated for maximum of 15 units. P/NP or letter grading.

**137A. Creative Writing: Intermediate Short Story. (5)** Seminar, three or four hours. Enforced Requisites: courses 4HW or 4W or 20 or 20W, English Composition 3. Not open for credit to students with credit for course 137B. Reading in contemporary short stories and exercises in short fiction writing. Classroom discussion based on assigned reading and student work. Enrollment in more than one section per term not permitted. May be repeated for maximum of 15 units. P/NP or letter grading.

**137B. Creative Writing: Short Story. (5)** (Formerly numbered 137.) Seminar, three or four hours. Enforced Requisites: courses 4HW or 4W or 20 or 20W, English Composition 3. Further reading in contemporary short stories and exercises in fiction writing, with emphasis on longer stories. Some classroom discussion based on assigned reading, but most on student work. Enrollment in more than one section per term not permitted. May be repeated for maximum of 15 units. P/NP or letter grading.

**M138. Topics in Creative Writing. (5)** (Same as English Composition M138.) Seminar, three hours. Requisite: English Composition 3 or 3D or 3DS or 3SL. Introductory workshop in genre(s) of instructor choice,

that may include mixed genres, playwriting, screenwriting, literary nonfiction, or others. Enrollment in more than one section per term not permitted. May be repeated for maximum of 15 units. May not be used to satisfy workshop requirements for English creative writing concentration. P/NP or letter grading.

**139. Individual Authors. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Specialized study of work of one single Anglophone poet, dramatist, prose writer, or novelist. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**140A. Chaucer: *Canterbury Tales*. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Introductory study of Chaucer's language, versification, and historical and literary background, including analysis and discussion of his long major poem, *Canterbury Tales*. P/NP or letter grading.

**140B. Chaucer: *Troilus and Criseyde* and Selected Minor Works. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Intensive study of *Troilus and Criseyde* and selected minor works of Chaucer, such as *Book of the Duchess*, *House of Fame*, *Parliament of Fowls*, etc. P/NP or letter grading.

**141A. Early Medieval Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B. Major poetry and prose of early medieval Britain, including epic, romance, history, saints' lives, and travel literature. Texts and topics include *Beowulf*, Vikings, poems on women, Bede, and King Alfred. P/NP or letter grading.

**141B. Introduction to Old English Language and Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B. Introductory study of Old English language and literature, including grammar and vocabulary, reading and translation of poetry and prose, and discussion of literatures and cultures of Anglo-Saxon England. P/NP or letter grading.

**141C. Topics in Old English. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 141B. Intensive study of Old English literature in original language. Texts and topics may include *Beowulf*, *Vercelli Book*, books of monsters, medical writing, etc. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**141R. Early Medieval Literature: Research Component. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Major poetry and prose of early medieval Britain, including epic, romance, history, saints' lives, and travel literature. Substantial research component included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**142. Later Medieval Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Reading and historical explication of major writers of later medieval Britain (e.g., Gawain-poet, Langland, Gower, Margery Kempe, Malory, miracle and morality plays, prose, and lyrics). P/NP or letter grading.

**142R. Later Medieval Literature: Research Component. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Reading and historical explication of major writers of later medieval Britain (e.g., Gawain-poet, Langland, Gower, Margery Kempe, Malory, miracle and morality plays, prose, and lyrics). Substantial research component included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**143. Drama to 1576. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. English drama from its Latin and Anglo-Norman roots to opening of first public playhouse. P/NP or letter grading.

**144. Medieval Romance and Literatures of Court. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Investigation of medieval court culture, exploring concepts of nobility, governance, love, loyalty, and power in range of genres: romance, courtly epic, lyric, de-

bate, and satire. Texts may include *Beowulf*, *Lais of Marie de France*, *Sir Gawain and Green Knight*, *Pearl*, and Malory's *Morte Arthure*. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**145. Medieval Literatures of Devotion and Dissent. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Exploration of devotional genres and their complex relationships with traditions of dissent in medieval English culture, encompassing hagiography, vision, conversion narrative, interreligious debate, heresy trials, and Lollard manifestos and translations. Texts may include *Dream of Rood*, *South English Legendary*, *Ancrene Wisse*, *Piers Plowman*, Lollard writings, macroplays, Wakefield cycle, *Showings of Julian of Norwich*, and *Book of Margery Kempe*. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**146. Medieval Story Cycles and Collections. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Exploration of medieval story cycles and story collections as narrative forms. Medieval story cycles engage in complex literary conversations across medieval cultures, periods, genres, and languages, while story collections often stage art of storytelling within narrative frame to invite self-consciousness about powers of literary production itself. Texts may include cycles such as texts gathered as *Matter of Britain*, *Matter of Rome*, or *Matter of France*; also *Mabinogi*, manuscript collections such as Auchinleck manuscript or Exeter book, framed narratives such as *Decameron*, *Canterbury Tales*, *One Thousand and One Nights*, and Gower's *Confessio Amantis*, or collections of exempla, legends, and dicta. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**147. Medieval Histories, Chronicles, and Records. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Investigation of medieval history writing as literary tradition. Medieval histories survive in every language of medieval Britain, including Latin, Old English, Welsh, Irish, Anglo-Norman French, and Middle English. Multilingual ubiquity of history writing points to pressures of history on history writing—histories are always shaped by political, cultural, linguistic, and textual pressures of present tense. Texts may include histories, chronicles, material records, and historiographically engaged texts. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**148. Cultures of Middle Ages. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Interdisciplinary survey of particular medieval societies, with special emphasis on complex interactions between different ethnic and cultural traditions of medieval world. Examination of processes of intercultural encounter and transmission: classical or patristic traditions into medieval culture, crusade, travel literature, and literature of contact zones, including interactions between Celtic, Anglo, and Norman societies, and debates between Pagans, Jews, Christians, and Muslims. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**149. Medievalisms. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Exploration of postmedieval production of Middle Ages as period for scholarly study, tactical premodern other to modern and contemporary, and commodity continually reinvented by postmedieval writers, artists, and popular media. Topics may include 19th-century production of medieval studies and its links to nationalism, notable medievalists and their work, and uses of Middle Ages in popular culture from Umberto Eco to Tolkien, Robin Hood, Arthur, and Merlin. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**150A. Shakespeare: Poems and Early Plays. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Intensive study of selected poems and representative comedies, histories, and tragedies through *Hamlet*. P/NP or letter grading.

**150B. Shakespeare: Later Plays. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Intensive study of representative problem plays, major tragedies, Roman plays, and romances. P/NP or letter grading.

**150C. Topics in Shakespeare. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Introduction to or advancement of student knowledge of Shakespeare's works through broad or specific topics set by instructor. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**151. Milton. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of major works of Milton, with emphasis on *Paradise Lost*. P/NP or letter grading.

**152. Literatures of English Renaissance and Early Modern Period. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of major works in their cultural context. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**153. Theatrical Renaissance: Early Modern Texts and Performances. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Topics may include professional and amateur performances in court, cities, churches, and countryside of varied sorts of texts—masques, religious drama, secular drama, charivari—alongside examination of texts, performers, and performance spaces from 1509 to 1642. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**154. Renaissance Worlds. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Variable topics, including travel literature, exploration and expansion, transnational and transoceanic texts, science and cosmography, conceptual worlds of myth and philosophy, as expressed in literature and other arts. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**155. Renaissance Subjects. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Literary representations of personhood in early modern period, with attention to issues such as personal voice, relations of privacy/community, bodies/souls, selves/others, as impacted by quotients such as gender, sexuality, race, and ethnicity as they are understood in period from 1500 to 1700. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**156. Devotion and Dissent. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Examination of religious thought and practice associated with Reformation and Counter-Reformation enterprises in early modern period and consideration of how various types of writing—poems, prayer books, sermons, historical chronicles, essays, travel narratives, trial records—reflect and assess religious ferment of era. Coverage of either broad historical range such as from Henry VIII's break with Rome to execution of Charles I or one specific topic such as varieties of martyrdom, art of confession, or conversion narratives. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**157. Translation and Innovation in English Renaissance and Early Modern Period. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of major works of English Renaissance literature and culture in relation to literatures of antiquity and continental Renaissance. Topics may include epic tradition, forerunners of novel, Renaissance humanisms, literature of love, monsters and marvels, representing nature, Ovidian transformations. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**159. Topics in Literature, circa 1500 to 1700. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Examination of literatures from or about this time period. Consult Schedule of Classes for subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**159R. Topics in Literature, circa 1500 to 1700: Research Component. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of literatures from this time period and conventions of literary research. Substantial research component included. Consult Schedule of Classes for subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**160A. Literature of Restoration and Earlier 18th Century. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of major works as literary documents and as products of Restoration and earlier 18th-century thought. P/NP or letter grading.

**160B. Literature of Later 18th Century. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of major works as literary documents and as products of later 18th-century thought. P/NP or letter grading.

**161A. Poetry in English to 1850. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Consideration of poetry across genres and throughout period. Topics may include rise of satire, verse forms including Pindaric ode, mock-epic, and verse-epistle, questions of literary imitation and originality, poetry's relationship to empire, and gendering of authorship. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**161B. Drama in English to 1850. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Survey of drama in English until 1850. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**161C. Novel in English to 1850. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Survey of major novelists until 1850. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**162A. Earlier Romantic Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Intensive study of writings by Blake, Wollstonecraft, W. Wordsworth, Coleridge, and Austen, with collateral readings from such authors as Godwin, Burke, Paine, Radcliffe, Edgeworth, Baillie, C. Smith, Burns, Southey, D. Wordsworth, Lamb, DeQuincey, and Scott. P/NP or letter grading.

**162B. Later Romantic Literature. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Intensive study of writings by Byron, Keats, Percy Shelly, and Mary Shelley, with collateral readings from such authors as Hazlitt, Hunt, Landor, Clare, Moore, Peacock, Landon, Aikin, Hemans, and Prince. P/NP or letter grading.

**163A. Romanticism and Revolution. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Exploration of relationships among and between different revolutionary currents—political, economic, and aesthetic—in British Romantic period, developing readings of literary texts that situate them in revolutionary context out of which they emerged, and to which they contributed in turn. Recovery of sense of how literary and extra-literary texts emerged in common relationship; development of deeper understanding of nature of Romanticism itself. Readings from work of Blake, Wordsworth, Coleridge, Southey, Austen, Byron, Keats, Wollstonecraft, and others. May not be repeated for credit. P/NP or letter grading.

**163B. Transatlantic Romanticism. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Transatlantic studies have been central in generating new conceptual frameworks for thinking through complex issues related to interconnectedness of Atlantic rim cultures. With focus on ways in which cultures, ideologies, and political identities are reworked and reinscribed by transatlantic movement of peoples, ideas, and cultural artifacts, expansion of notions of Romanticism to include transoceanic perspectives that understand early

19th-century Romantic literature as transatlantic phenomenon. May not be repeated for credit. P/NP or letter grading.

**163C. Jane Austen and Her Peers. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Coverage of six novels of Jane Austen, as well as literary works that most influenced her: Mary Wollstonecraft's *Vindication of Rights of Woman*, Gothic novel, and Maria Edgeworth's *Belinda*. P/NP or letter grading.

**164A. Earlier 19th-Century Poetry. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Developments in English poetic genres from time of Napoleonic Wars to middle decades of 19th century. Readings enable students to understand legacies of 18th-century and Romantic writing and emergence of new forms such as dramatic monologue and novel-in-verse. P/NP or letter grading.

**164B. 19th-Century Critical Prose. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of traditions in critical thought from 1800 to 1900 in relation to development of cultural and literary criticism, social thought, and political writing. P/NP or letter grading.

**164C. 19th-Century Novel. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of development of novel from 1800 to 1900, with focus on evolution of genre in relation to cultural, social, and political contexts in which readings were composed, circulated, and received. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**164D. Global 19th Century. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Examination of 19th-century literature as global phenomenon. Ways imaginative works engaged with 19th-century global formations, that may include structures and discourses of empire, international law, communication and transport systems, political boundaries and state sovereignty, slave trade, transnational economics, travel and exploration, religious communities, military engagements, and/or cultural conflicts. May not be repeated for credit. P/NP or letter grading.

**165A. Imperial Culture, 1700 to 1850. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Exploration of relationship between culture and imperialism in 18th and 19th centuries. Discussion of relationship between literary and extra-literary texts and shifting patterns and paradigms of imperial rule, as metropolitan and peripheral spaces were transformed beyond recognition in this period. Particular attention to representations of otherness both in emergent metropolitan center and in sites of contact and conquest overseas, shifts in forms of Orientalism, developing concepts of race and nation, and ways imperial culture gradually infused almost every aspect of British culture and literature by middle of 19th century. May not be repeated for credit. P/NP or letter grading.

**165B. Gender, Sexuality, and Body, 1700 to 1850. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Examination of question of gender in literature of period known for its invention of sex/gender system. Topics may include varying representations of gender and sexuality across period, gender and authorship, and literature of embodiment. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**165C. Protestant Dissent and English Literature, 1640 to 1832. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3 or 3H. Religious doctrines, political ideologies, cultural practices, and aesthetics of Protestant dissent, with some attention to transatlantic radicalism, but main topic is British dissent. Adaptations of such theologies as Lutheranism, Calvinism, Anabaptism, Unitarianism, and Methodism in Scotland, England, and Wales from English Civil War and Glorious Revolution to Reform Act of 1832. Texts include representative theology and political theory (Luther, Calvin, Locke, Priestley, Paine, Wollstonecraft) and

representative poetry and fiction (Milton, Bunyan, Defoe, Blake, Coleridge, Shelley, Byron). P/NP or letter grading.

**166A. Colonial Beginnings of American Literature.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A and 10B, or 11 and 87. Historical survey of American literatures of discovery and exploration, contact, and settlement, with emphasis on genres that express distinctive colonial identities, myths, and religious visions. P/NP or letter grading.

**166B. American Literature, 1776 to 1832.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A and 10B, or 11 and 87. Historical survey of American literatures from Revolution through early republic, with emphasis on genres that reflect systematic attempts to create representative national literature and attention to American ethnic, gender, and postcolonial perspectives. P/NP or letter grading.

**166C. American Literature, 1832 to 1865.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A and 10B, or 11 and 87. Historical survey of American literatures from Jacksonian era to end of Civil War, including emergent tradition of American Romanticism, augmented and challenged by genres of popular protest urging application of democratic ideals to questions of race, gender, and social equality. P/NP or letter grading.

**167A. American Poetry to 1900.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A and 10B, or 11 and 87. Study of American poetry from Puritan period through end of 19th century. P/NP or letter grading.

**167B. American Fiction to 1900.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A and 10B, or 11 and 87. Study of American fiction (both novels and short stories) from its beginning to end of 19th century. P/NP or letter grading.

**168. Major American Writers.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A and 10B, or 11 and 87. Broad survey of representative American writers across several centuries, designed to give concise account of broad narrative of American literary development, from origins through 19th century. Includes mainly works that have traditionally been identified as American classics and asks both what makes American literature distinctive and what its relations are to other literatures in English. P/NP or letter grading.

**169. Topics in Literature, circa 1700 to 1850.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A and 10B, or 11 and 87. Examination of literatures from or about this time period. Consult Schedule of Classes for subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**169R. Topics in Literature, circa 1700 to 1850: Research Component.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B. Study of literatures from this time period and conventions of literary research. Substantial research component included. Consult Schedule of Classes and departmental descriptions for subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**170A. American Literature, 1865 to 1900.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Historical survey of American literature from end of Civil War to beginning of 20th century, including writers such as Howells, James, Twain, Norris, Dickinson, Crane, Chesnut, Gilman, and others working in modes of realist and naturalist novel, regional and vernacular prose, and poetry. P/NP or letter grading.

**170B. American Literature, 1900 to 1945.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Historical survey of American literature from turn of century to end of World War II. P/NP or letter grading.

**170C. American Literature since 1945.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Historical survey of American literature since end of World War II. P/NP or letter grading.

**171A. Later 19th-Century Poetry.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Developments in English poetic genres in relation to significant movements such as aestheticism, decadence, feminism, and imperialism from middle decades of 19th century to turn of 20th century. P/NP or letter grading.

**171B. 20th-Century British Poetry.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Survey of major British poets from 1900 to present. P/NP or letter grading.

**171C. 20th-Century British Fiction.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Survey of major British novelists and short story writers from 1900 to present. P/NP or letter grading.

**172A. Drama, 1850 to 1945.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C (for Theater and Film and Television majors 10A, 10B, 10C requisites are waived). Survey of drama in English, with its principal continental influences, from 1850 through World War II. P/NP or letter grading.

**172B. Drama, 1945 to Present.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, 10C. Study of drama in English, with its principal continental influences, since World War II. P/NP or letter grading.

**172C. American Drama.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American drama from its beginning to present day. Historical period may vary with instructor. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**173A. American Poetry, 1900 to 1945.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American poetry from beginning of 20th century to end of World War II. P/NP or letter grading.

**173B. American Poetry since 1945.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American poetry since end of World War II. P/NP or letter grading.

**173C. Contemporary American Poetry.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American poetry, mostly by living authors, with emphasis on emergent issues and poetic forms. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**174A. American Fiction, 1900 to 1945.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American novels and short stories from beginning of 20th century to end of World War II. P/NP or letter grading.

**174B. American Fiction since 1945.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American novels and short stories since end of World War II. P/NP or letter grading.

**174C. Contemporary American Fiction.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American novels and short stories, mostly by living authors, with emphasis on emergent issues and aesthetics. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**175. American Nonfictional Prose.** (5) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of American nonfictional prose (essays, autobiographies, travel narratives, and other). Partic-

ular genre and/or historical period vary with instructor. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**176. Hemispheric American Literature.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Examination of primarily North American literature from hemispheric rather than nation-based perspective. Historic breadth in study of American literature while posing such crucial theoretical issues as emergence of U.S. Empire or relationship between North America and global south, including Africa, Latin America, and Caribbean. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**177. Interdisciplinary Studies of American Culture.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Interdisciplinary study of American literature in its relationships to other disciplines, including art, architecture, film, history, music, politics, and various social sciences, with emphasis on application of literary methodology to historical survey of American culture. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**179. Topics in Literature, circa 1850 to Present.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Examination of literatures from or about this time period. Consult Schedule of Classes for subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**179R. Topics in Literature, circa 1850 to Present: Research Component.** (5) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 10A, 10B, and 10C, or 11 and 87. Study of literatures from this time period and conventions of literary research. Substantial research component included. Consult Schedule of Classes and departmental descriptions for subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**180. Topics in Literature and Language.** (5) Seminar, three or four hours. Requisites: courses 10A, 10B, and 10C, or 11 and 87. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**180R. Junior Research Seminar.** (5) Seminar, three hours. Enforced requisites: courses 10A, 10B, 10C. Strongly recommended for students who plan to enroll in capstone seminars. Study of range of approaches to literary and cultural research, including archival, literary critical, and theoretical to equip students with skills working with primary sources, secondary criticism, and online databases. Specific literatures vary with instructors. May not be repeated for credit. P/NP or letter grading.

**181A. Topics in Genre Studies.** (5) Seminar, three or four hours. Requisites: courses 10A, 10B, and 10C, or 11 and 87. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**181B. Topics in Interdisciplinary Studies.** (5) Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**181C. Topics in Critical Theory.** (5) Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**181D. Topics in Imperial, Transnational, and Postcolonial Studies.** (5) Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**182A. Topics in Medieval Literature. (5)** Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**182B. Topics in Renaissance and Early Modern Literature. (5)** Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**182C. Topics in 18th-Century Literature. (5)** Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**182D. Topics in Romantic Literature. (5)** Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**182E Topics in 19th-Century Literature. (5)** Seminar, three or four hours. Enforced requisites: courses 10A, 10B, 10C. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**182F. Topics in 20th- and 21st-Century Literature. (5)** Seminar, three or four hours. Requisites: courses 10A, 10B, and 10C, or 11 and 87. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**183A. Topics in Colonial American Literature. (5)** Seminar, three or four hours. Requisites: courses 10A, 10B, and 10C, or 11 and 87. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**183B. Topics in 19th-Century American Literature. (5)** Seminar, three or four hours. Requisites: courses 10A, 10B, and 10C, or 11 and 87. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**183C. Topics in 20th- and 21st-Century American Literature. (5)** Seminar, three or four hours. Requisites: courses 10A, 10B, and 10C, or 11 and 87. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**184. Capstone Seminar: English. (5)** Seminar, three hours. Requisites: courses 10A, 10B, and 10C, or 11 and 87, and completion of at least four upper-division courses required for major. Limited to senior English or American Literature and Culture majors. Students use knowledge from prior coursework to address current topics in discipline and work with faculty members on focused topic of research. Culminating paper or project and class presentation required. May be repeated once for credit with topic or instructor change. Letter grading.

**M185. Professional Writing Capstone. (4)** (Same as English Composition M185.) Seminar, four hours. Limited to junior/senior Professional Writing minors. Topical writing workshop on rhetorical strategies useful in written and multimodal genres. Intended to provide students with opportunity for serious engagement with writing project in their minor specialization under close faculty supervision and in constructive writing group. Reading, discussion, oral presentations, rhetorical analysis, and development of professional portfolio. Students develop their capstone projects, including identifying appropriate models, generic expectations, and rhetorical choices. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings

with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190H. Honors Research Colloquia in English. (1)** Seminar, one hour. Enforced corequisite: course 198A or 198B. Designed to bring together students undertaking supervised tutorial research for departmental honors in seminar setting with one or more faculty members to discuss their own work in progress and critical readings related to honors projects. Led by one supervising faculty member. May be repeated for credit. P/NP grading.

**M191A. Topics in African American Literature. (5)** (Same as African American Studies M179A.) Seminar, three or four hours. Enforced requisite: English Composition 3 or 3H. Variable specialized studies course in African American literature. Topics may include Harlem Renaissance, African American literature in Nadir, black women's writing, contemporary African American fiction, African American poetry. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M191B. Topics in Chicana/Chicano and/or Latina/Latino Literature. (5)** (Same as Chicana/o and Central American Studies M139.) Seminar, three or four hours. Enforced requisite: English Composition 3. Variable specialized studies course in Chicana/Chicano and/or Latina/Latino literature. Topics include labor and literature; Chicana/Chicano visions of Los Angeles; immigration, migration, and exile; autobiography and historical change; Chicana/Chicano journalism; literary New Mexico; specific literary genres. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M191C. Topics in Asian American Literature. (5)** (Same as Asian American Studies M191F) Seminar, three or four hours. Enforced requisite: English Composition 3 or 3H. Variable specialized studies course in Asian American literature. Topics may include genres (autobiography, novel, poetry, short fiction, or drama); specific nationalities within Asian American community; themes of transnational migration; cross-cultural, interdisciplinary, or interracial negotiation; and gender and queer politics. Reading, discussion, and development of culminating project. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M191D. Topics in Queer Literatures and Cultures. (5)** (Same as Gender Studies M191D and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M191D.) Seminar, three or four hours. Enforced requi-

site: English Composition 3. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M191E. Topics in Gender and Sexuality. (5)** (Same as Gender Studies M191E and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M191E.) Seminar, three or four hours. Enforced requisite: English Composition 3. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**191H. Honors Research Seminars: English. (5)** Seminar, three hours. Enforced requisite: one course from 120 through 128. Open only to students who are eligible and apply for honors program in English. Introduction to research techniques and study of various approaches and applications of critical methodology as it relates to interpretation and evaluation of texts. Development and presentation of proposals for honors projects. Consult undergraduate adviser. May be repeated for credit. Letter grading.

**M191P. Careers in Humanities. (4)** (Same as Comparative Literature M191P.) Seminar, three hours. Challenges misassumptions regarding humanities majors and their practical applications to life after graduation. Exploration of wide range of careers, with hands-on practice in crafting professional narrative. Guest lectures from UCLA professionals and alumni—all experts in career planning and local industry. Students engage with workplace leaders, and simultaneously build professional dossier—on paper or online—in preparation for life after UCLA with a humanities degree. P/NP or letter grading.

**M192. Undergraduate Practicum in English: Journals. (2)** (Same as English Composition M192.) Seminar, two hours. Training and supervised practicum for undergraduate student editors of campus journals supervised by faculty members in English and/or Writing Programs. May be repeated for credit. P/NP or letter grading.

**193. Colloquia and Speakers' Series Undergraduate Seminars: English. (1)** Seminar, one hour. Limited to undergraduate students. Discussion of current critical literature and/or creative readings by writers, artists, and scholars. Exploration in greater depth of literary topics and creative work presented through sponsored forums, speakers' series, and colloquia. May be repeated for credit. P/NP grading.

**195CE. Community and Corporate Internships in English. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Students complete weekly written assignments, attend bi-weekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. May not be applied toward major requirements. May be repeated for credit with consent of Center for Community Learning. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in English. (2 to 5)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A-198B. Honors Research in English. (5-5)** Tutorial, to be arranged. Requisite: course 191H. Limited to juniors/seniors. Development and completion of honors thesis under direct supervision of faculty member. May be repeated for credit. Individual contract required. In Progress (198A) and letter (198B) grading.

**199. Directed Research or Senior Project in English. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual literary research and creative projects under guidance of faculty mentor. Cul-



minating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Graduate Proseminar. (4)** Seminar, three hours. Introduction to profession of literary studies. Covers wide array of topics including state of discipline; scholarly organizations and conference presentations; critical and methodological approaches to literary studies; writing and publishing for scholarly and general audiences; building curriculum vitae and résumé; developing professional skills; understanding academic job market and humanities careers. S/U or letter grading.

**201. History of Literary Criticism and Aesthetic Interpretation. (4)** (Formerly numbered 201A.) Seminar, three hours. Examination of major texts in literary criticism and aesthetic interpretation from classical to contemporary period with focus and topics to be set by individual instructor. S/U or letter grading.

**202. Narrative Theory. (4)** Seminar, three hours. Introduction to concepts and theories of narrative. These may include linguistic, sociological, cognitive, and computational approaches to explain elements of narrative such as plot, narrator, character, and style across different media. S/U or letter grading.

**203. Digital Theories and Methods. (4)** Seminar, three hours. Theories and practices of using computational tools and methods, including digital archives, for analysis of literary texts across media. S/U or letter grading.

**M205A. Study of Oral Tradition: History and Methods. (4)** (Same as Scandinavian M271.) Seminar, three hours. Exploration of scholarly and literary attempts to study, define, analyze, promote, and/or appropriate oral traditions, from Homer and ancient Greece to origins of vernacular literatures, European romantic (re)discovery of oral tradition, 20th-century heuristic models of oral composition, and modern-day electronic media and popular verbal genres, such as joking and rapping. S/U or letter grading.

**M205C. Studies in Oral Traditional Genres. (4)** (Same as Scandinavian M273.) Seminar, three hours. Exploration in depth of variety and history of, and scholarship on, particular oral traditional genre (e.g., ballad, song, epic, proverb, riddle, folktale, legend) or set of closely related oral traditional genres. S/U or letter grading.

**210. History of English Language. (4)** Lecture, four hours. Detailed study of history, characteristics, and changing forms of English language from its origin until about 1900. S/U or letter grading.

**211. Old English. (4)** Lecture, four hours. Study of Old English grammar, lexicon, phonology, and pronunciation to enable students to read literature silently and aloud. Reading of as much of more interesting Old English prose and poetry as can be read in one term. S/U or letter grading.

**212. Middle English. (4)** Lecture, four hours. Requirement: course 211. Detailed study of linguistic aspects of Middle English and of representative examples of better prose and poetry. S/U or letter grading.

**M215. Paleography of Latin and Vernacular Manuscripts, 900 to 1500. (4)** (Same as Classics M218, French M210, and History M218.) Lecture, three hours; discussion, two hours. Introduction to history of Latin and vernacular manuscript book from 900 to 1500 to (1) train students to make informed judgments with regard to place and date of origin, (2) provide training in accurate reading and transcription of later medieval scripts, and (3) examine manuscript book as witness to changing society that produced it. Focus on relationship between Latin manuscripts and vernacular manuscripts with regard to their respective presentation of written texts. S/U or letter grading.

**217A-217B. Medieval Welsh. (4)** Lecture, four hours. Studies in grammar. Readings in Mabinogi and other texts. Comparative considerations. S/U or letter grading.

**230. Workshop: Creative Writing. (2 to 4)** Lecture, two to four hours. Preparation: submission of writing samples in specified genre (poetry, fiction, or drama).

May be repeated but may not satisfy more than one of nine courses required for first qualifying examination nor any of five courses required for second qualifying examination. S/U or letter grading.

**242. Language and Literature. (4)** Seminar, three hours. Application of linguistics to literary analysis. Individual seminars dealing with one historical period (medieval and Renaissance, neoclassical, or 19th century and modern), specific authors, or contributions of specific groups of linguists to literary analysis. S/U or letter grading.

**244. Old and Medieval English Literature. (4)** Seminar, four hours. Studies in poetry and prose of Old and medieval English literature; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**245. Chaucer. (4)** Lecture, four hours. May be repeated for credit. S/U or letter grading.

**246. Renaissance Literature. (4)** Seminar, four hours. Studies in poetry and prose of Renaissance English literature, exclusive of Shakespeare; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**247. Shakespeare. (4)** Lecture, three hours. May be repeated for credit. S/U or letter grading.

**248. Earlier 17th-Century Literature. (4)** Lecture, three hours. Studies in poetry and prose of 17th-century English literature up to Restoration; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**249. Milton. (4)** Lecture, three hours. Studies in poetry and prose of John Milton; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**250. Restoration and 18th-Century Literature. (4)** Seminar, three hours. Studies in English poetry and prose, 1660 to 1800; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**251. Romantic Writers. (4)** Seminar, three hours. May be repeated for credit. S/U or letter grading.

**252. Victorian Literature. (4)** Lecture, three hours. Studies in English poetry and prose of Victorian period; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**253. 20th- and 21st-Century Literatures in English. (4)** Seminar, three hours. Studies in 20th- and 21st-century literatures in English. Focus and topics to be set by individual instructor. May be repeated for credit. S/U or letter grading.

**254. American Literature to 1900. (4)** Lecture, three hours. Studies in Colonial and 19th-century American literature; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**255. Topics in Novel. (4)** Seminar, three hours. Thematic approval to study of novel. May be repeated for credit. S/U or letter grading.

**256. Studies in Genre. (4)** Seminar, three hours. Formal approach to study of one genre and its changes across time. May be repeated for credit. S/U or letter grading.

**257. Methods and Tools for Study of Literature and Culture. (4)** Seminar, three hours. Survey of methods or training in particular set of methods for literary and cultural analysis. Methods may include archival, paleographical, linguistic, historical, sociological, and cognitive approaches. S/U or letter grading.

**259. Studies in Criticism. (4)** Lecture, three hours. May be repeated for credit. S/U or letter grading.

**260. Studies in Literature and Its Relationship to Arts and Sciences. (4)** Seminar, three hours. Studies in interrelationships of literature, arts, and sciences; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**M260A. Topics in Asian American Literature. (4)** (Same as Asian American Studies M260.) Seminar, three hours. Graduate seminar that examines and critically evaluates writings of Asian Americans. May be repeated for credit. S/U or letter grading.

**M261. Studies in Chicana/Chicano Literature. (4)** (Same as Chicana/o and Central American Studies M289.) Seminar, three hours. Intensive research and study of major themes, authors, and issues in Chicana/Chicano literature and culture. Examination of political, aesthetic, economic, and cultural context that emerges in Chicana/Chicano discourse; limits of investigation set by individual instructor. May be repeated for credit. S/U or letter grading.

**M262. Studies in Afro-American Literature. (4)** (Same as African American Studies M200E.) Lecture, four hours. Intensive research and study of major themes, issues, and writers in Afro-American literature. Discussions and research on aesthetic, cultural, and social backgrounds of Afro-American writing. May be repeated for credit. S/U or letter grading.

**265. Postcolonial Literatures. (4)** Seminar, three hours. Study of aesthetic, historical, and social backgrounds to literatures of former British colonies that became independent after 1947. General issues related to way imperialism, colonialism, and postcolonialism have helped to shape and have been shaped by literature in English. May be repeated for credit. S/U or letter grading.

**M266. Cultural World Views of Native America. (4)** (Same as American Indian Studies M200B.) Seminar, three hours. Exploration of written literary texts from oral cultures and other expressive cultural forms—dance, art, song, religious and medicinal ritual—in selected Native American societies, as these traditional and tribal contexts have been translated into contemporary literary texts (fiction, poetry, essay, and drama). Survey, from secondary sources, of interdisciplinary methodological approaches taken from literary analysis, structural anthropology, folklore, linguistics, and ethnomusicology. May be repeated for credit with instructor and/or topic change. Letter grading.

**270. Issues and Developments in Critical Theory. (4)** (Formerly numbered M270.) Seminar, three hours. Investigation of selected trends in critical theory. Topics may include continental philosophy, memory studies, feminist and queer studies, urban studies, environmental humanities, critical race studies, and postcolonialism. S/U or letter grading.

**M290. Science Communications and Environmental Media. (4)** (Same as Environment M242.) Seminar, three hours. Designed for graduate students in food, energy, and water systems (FEWS) training grant program to survey fields of science communications and environmental narrative from nonfiction to new media (multimedia journalism, documentary, social media, virtual reality, etc.), and to develop collaborative projects communicating student research to diverse public audiences. Course is part of National Science Foundation (NSF) graduate traineeship in integrated urban solutions for food, energy, and water systems (INFEWS). Enrollment for non-INFEWS students in STEM graduate education and related sustainability majors/topics by consent of instructor. S/U or letter grading.

**M299. Interdisciplinary American Studies. (6)** (Same as History M299.) Discussion, four hours. Readings, discussion, and papers on common theme, team-taught by faculty members from different departments. Topics vary according to participating faculty. May be repeated for credit with consent of instructors. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May not be substituted for any departmental enrollment requirements. May be repeated for credit. S/U or letter grading.

**490. Publishing Academic Literary Article. (4)** Seminar, four hours. Structured as writing workshop. Determination of what publishable article looks like. Independent revision of student work. Circulation of student papers. Class-wide discussion of writing. S/U or letter grading.

**495A. Supervised Teaching Preparation. (4)** Seminar, three hours. Required of all applicants for teaching assistantships in English. Introduction to teaching of lit-

erature intended to prepare teaching assistants for their first assignments in leading discussion sections. Practical concerns of creating assignments, grading papers, and holding conferences. S/U grading.

**495B. Supervised Teaching Preparation. (3)** Seminar, two hours. Required of all teaching assistants in their initial quarter of teaching. Mentoring and group teaching assistant/mentor conferences. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study. (2 to 4)** Tutorial, to be arranged. Limited to students preparing for first qualifying examination or engaging in intensive directed research project. May not be applied toward any course requirement for degree. Consult graduate counselor to enroll or obtain information. S/U or letter grading.

**597. Preparation for PhD Examinations. (4 to 12)** Tutorial, to be arranged. Limited to second-stage PhD students preparing for second qualifying examination. S/U grading.

**598. MA Research and Thesis Preparation. (4 or 8)** Tutorial, to be arranged. Limited to graduate students. May not be applied toward any course requirement for degree. S/U grading.

**599. PhD Dissertation Research. (4 or 8)** Tutorial, to be arranged. Limited to PhD students unable to enroll in seminars in their fields or to students concurrently enrolled in such seminars. (Exception to this rule must be requested by petition.) S/U grading.

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## ENTREPRENEURSHIP

*Interdisciplinary Minor*  
John E. Anderson Graduate School of Management

149 Kaplan Hall  
Box 951530  
Los Angeles, CA 90095-1530

**Entrepreneurship**  
310-825-1389

**E-mail contact**

Olav J. Sorenson, PhD, *Chair*

## Faculty Committee

Olav J. Sorenson, PhD (*Management, Sociology*)  
Nathan M. Wilson, PhD (*Management*)  
Shi Zhang, PhD (*Management*)

## Overview

The Entrepreneurship minor introduces undergraduate students to the field of entrepreneurship. Entrepreneurship encompasses a wide range of business activities, from the generation of new ideas for products and services, to the systematic evaluation and development of those ideas, to the process of building a company to pursue them. Faculty members teaching in the minor are drawn from academic departments across campus, applied fields in the professional schools, and industry.

Through a carefully developed core curriculum and an integrative capstone experience, students in the minor obtain both breadth and depth in their understanding of the concepts, frameworks, and practical implications of

entrepreneurship in an interdisciplinary and collaborative educational environment.

## Undergraduate Minor Entrepreneurship Minor

### Admission

To enter the Entrepreneurship minor, students must (1) have an overall grade-point average of 3.0 or better and (2) submit an application supporting their interest in pursuing the minor. Applications are accepted in fall, winter, and spring quarters. To help plan the course schedule and internship/field experience, students are expected to work closely with the academic adviser. Applications are available on the [minor website](#).

### The Minor

*Required Lower-Division Course (4 or 5 units):* Communication 1 or any Writing II course.

*Required Upper-Division Courses (32 or 33 units):* Management 159, 160, 161, 169, 199 (4 units minimum), and three elective courses selected from Ancient Near East M105, Communication 109, M117, 133, 156, Dance C184, Digital Humanities 101, 150, Economics 106E, 173AX, 173BX, Environment 163, Ethnomusicology 105, Management 162, 163, 164, 165, 167, 168, Sociology 172. At least two of the three elective courses must be selected from the management courses listed above.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 3.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

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## ENVIRONMENT AND SUSTAINABILITY, INSTITUTE OF THE

*Center for Interdisciplinary Instruction*  
*College of Letters and Science*

300 La Kretz Hall  
Box 951496  
Los Angeles, CA 90095-1496

**Environment and Sustainability**  
310-825-5008

Marilyn N. Raphael, PhD, *Director*

## Faculty Roster

### Professors

Paul H. Barber, PhD  
Daniel T. Blumstein, PhD

William C. Boyd, JD, MA, PhD (*Michael J.*

*Klein Professor of Law*)

Ann E. Carlson, JD (*Shirley Shapiro Professor of Environmental Law*)

Yoram Cohen, PhD

Charles J. Corbett, PhD

Magali A. Delmas, PhD

Elizabeth M. DeLoughrey, PhD

Rajit Gadh, PhD

Thomas W. Gillespie, PhD

Alexander D. Hall, PhD

Susanna B. Hecht, PhD

Ursula K. Heise, PhD (*Marcia H. Howard Term Professor of Literary Studies*)

David K. Jacobs, PhD

Jennifer A. Jay, PhD

Dennis P. Lettenmaier, PhD

Glen M. MacDonald, PhD (*Professor of California and the American West*)

Shaily Mahendra, PhD

Timothy Malloy, JD (*Frank G. Wells Endowed Professor of Environmental Law*)

James C. McWilliams, PhD (*Louis B. Slichter Professor of Geophysics and Planetary Physics*)

Gregory S. Okin, PhD

Edward A. Parson, MSc, PhD (*Dan and Rae Emmett Endowed Professor of Environmental Law*)

Suzanne E. Paulson, PhD

Laurent G. Pilon, PhD

Stephanie S. Pincetl, PhD

Marilyn N. Raphael, PhD

Michael L. Ross, PhD

Lawren Sack, PhD

H. Bradley Shaffer, PhD

Monica L. Smith, PhD (*Navin and Pratima Doshi Professor of Indian Studies*)

Victoria L. Sork, PhD

Michael K. Stenstrom, PhD

Irwin H. Suffet, PhD

Aradhna K. Tripathi, PhD

Alex Wang, JD

Yifang Zhu, PhD

### Professors Emeriti

Richard F. Ambrose, PhD

Judith A. Carney, PhD

Randall D. Crane, PhD

J. Nicholas Entrikin, PhD

Malcolm S. Gordon, PhD

Patricia A. Gowaty, PhD

William M. Hamner, PhD

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Richard J. Jackson, MD, MPH

Paul M. Ong, PhD

Philip W. Rundel, PhD

Thomas B. Smith, PhD

Keith D. Stolzenbach, PhD

Richard P. Turco, PhD

Blaire Van Valkenburgh, PhD

Richard R. Vance, PhD

Arthur M. Winer, PhD

### Associate Professors

Alan I. Barreca, PhD

Deepak Rajagopal, PhD

Morgan W. Tingley, PhD

### Assistant Professors

Robert A. Eagle, PhD

Alvar Escrivá-Bou, PhD

Elizabeth C. Koslov, PhD  
Karen A. McKinnon, PhD  
Alesia Montgomery, PhD  
Elsa M. Ordway, PhD  
Pablo E. Saide, PhD

### Adjunct Professors

Mark A. Gold, DEnv  
Peter M. Kareiva, PhD  
Travis R. Longcore, PhD  
Sasan S. Saatchi, PhD

### Adjunct Associate Professors

Trevon L. Fuller, PhD  
Kevin Y. Njabo, PhD  
Rebecca F. Shipe, PhD

### Adjunct Assistant Professors

Jon A. Christensen, PhD  
Ryan J. Harrigan, PhD  
Shanna Shaked, PhD, MAT  
Virginia M. Zaunbrecher, JD

## Overview

The environment is defined broadly to include the interrelated issues of global climate change, loss of biological diversity, and threats to human health and well-being from the use and misuse of natural resources, applying all the tools of scientific and policy analysis as well as moral and aesthetic values to the work. The environment is a crucial component of sustainability, which is defined as the simultaneous consideration of environmental, economic, and social justice concerns. Los Angeles itself is a vital asset to this mission. As an international mega-city located in one of the world's most biologically diverse regions, Los Angeles is a magnet for scholars from around the world who are facing similar issues of pollution, access to potable water, demand for energy, fragmentation of habitat, and the need to restore ecological function to sprawling urban settlements in a manner that supports economic growth and that is socially just and equitable.

## Mission

The mission of the UCLA Institute of the Environment and Sustainability (IoES) is to advance cross-disciplinary research, teaching, and public service on matters of critical importance to the planet and the campus community.

## Undergraduate Study

The Bachelor of Science (BS) degree in Environmental Science is an innovative dual-component degree program for students seeking a challenging and invigorating science curriculum. The first component, the Environmental Science major, provides students with disciplinary breadth in several areas important to environmental science. The second component, a minor or concentration in one of seven environmental science areas, provides students with focused disciplinary depth in an area of their choosing. The minor in Environmental Systems and Society is designed for students who wish to gain a deeper understanding of the relationships between environ-

mental science and associated social and political issues.

The IoES also sponsors Environment M1A, M1B, M1CW and Clusters M1A, M1B, M1CW titled Food: Lens for Environment and Sustainability. The cluster format is a series of three integrated freshman team-taught courses over the fall, winter, and spring quarters. The fall and winter quarter courses consist of lectures and discussions. The spring quarter consists of seminars and activities in which students explore specialized food-related environmental and sustainability topics such as sustainable agriculture, food culture and justice, and strategies for feeding the growing human population.

## Graduate Study

At the graduate level, the IoES offers two degree programs and a graduate certificate.

### Graduate Certificate

The national award-winning Leaders in Sustainability graduate certificate program is free to UCLA graduate students pursuing degrees in any discipline. Companies, consumers, and governments across the world increasingly focus on making products, services, operations, and lives more sustainable. The certificate program gives students the tools to make that happen in a collaborative, action-oriented setting. By bringing together students and faculty from diverse academic fields, the program fosters cross-pollination for innovative ideas and solutions. Each graduate student takes a core sustainability class along with electives of their choosing. Working with other students, faculty and professionals, students initiate a leadership project that measurably advances sustainability. For many, this project serves as a jumping-off point into their post-graduate careers and studies.

## Undergraduate Major

### Environmental Science BS

The Environmental Science BS program represents strong collaboration between the Institute of the Environment and Sustainability and the departments of Atmospheric and Oceanic Sciences; Civil and Environmental Engineering; Earth, Planetary, and Space Sciences; Ecology and Evolutionary Biology; Environmental Health Sciences; and Geography. The program is designed for students who are deeply interested in the study of environmental science. There are two components to the program, and both must be completed to receive the degree. The first component, the Environmental Science major, requires completion of lower-division requirements grounded in basic natural sciences, a five-course upper-division environmental science requirement reflecting the disciplinary breadth of environmental science, three social sciences/humanities courses, participation in a sustainability-focused speaker series, and completion of an environmental science practicum. The second component is a minor or concentration in one of seven environmental science areas, each associated with a particu-

lar department. With assistance from IoES staff, students must formally apply to and be accepted by the associated department to receive the minor.

## Capstone Major

The Environmental Science major is a designated capstone major. In collaboration with a local agency or nonprofit institution, students work individually and in groups to complete projects that require them to integrate many of the skills, principles, theories, and concepts they have learned throughout the curriculum and apply them to real systems. Students are expected to contribute meaningfully to the analysis and solution of particular environmental science issues involving multiple disciplines and stakeholders with different perspectives. Those completing the major should possess critical thinking skills, problem-solving abilities, and familiarity with essential computational, data collection, and analysis skills, as well as demonstrate effective oral and written communication skills. Graduates should also be able to identify key ethical issues and analyze the consequences of various professional dilemmas, as well as work productively as part of a team.

## Learning Outcomes

The Environmental Science major has the following learning outcomes:

- Ability to apply theories or concepts from coursework to analysis of issues in the field
- Ability to make meaningful contribution to analysis and solution of particular issues involving multiple disciplines and stakeholders with different perspectives
- Critical thinking skills, problem-solving abilities, and familiarity with computational and data collection and analysis procedures essential to the field
- Ability to identify ethical issues raised by a particular issue
- Ability to analyze the consequences of various professional dilemmas
- Ability to work productively with others as part of a team
- Effective oral and written communication skills

## Entry to the Major

### Transfer Students

Transfer applicants to the Environmental Science major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two general chemistry courses with laboratory for majors, two general biology courses with laboratory for majors, two calculus courses, and two calculus-based physics courses.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Chemistry 14A, 14B, and 14BL (or 20A, 20B, and 20L), Environment 10, Geography 7, Life Sciences 7A, 7B, Mathematics 3A

and 3B (or 31A or 31AL, and 31B, or Life Sciences 30A and 30B), Physics 5A and 5C (or 1A and 1B), Statistics 12 or 13 (or Life Sciences 40).

For the **atmospheric and oceanic sciences minor**, Chemistry and Biochemistry 14C (or 30A) or Mathematics 3C (or 32A) or Physics 1C (or 5B) is also required.

For the **conservation biology minor**, Chemistry and Biochemistry 14C (or 30A) or Life Sciences 7C and 23L is also required.

For the **Earth and environmental science minor**, Chemistry and Biochemistry 14C (or 30A) or Mathematics 3C (or 32A) or Physics 1C (or 5B), Earth, Planetary, and Space Sciences 1, and one course from 5, 13, 15, or 61 are also required.

For the **environmental engineering minor**, Mathematics 3C (or 32A) is also required.

For the **environmental health concentration**, Chemistry and Biochemistry 14C (or 30A) is also required.

For the **environmental systems and society minor**, one course from Chemistry and Biochemistry 14C (or 30A), Earth, Planetary, and Space Sciences 1, Life Sciences 7C (and 23L), Mathematics 3C (or 32A), and Physics 5B (or 1C) is also required.

For the **geography/environmental studies minor**, one course from Chemistry and Biochemistry 14C (or 30A), Earth, Planetary, and Space Sciences 1, Life Sciences 7C (and 23L), Mathematics 3C (or 32A), and Physics 5B (or 1C), plus Geography 5 and one course from 1, 2, 3, 4, or 6 are also required. Students should take these courses before enrolling in upper-division courses.

## The Major

The major consists of four requirements: physical and life science, social science and humanities, practicum/sustainability talks, and minor or concentration, as follows:

### Physical and Life Sciences Requirements

*Required:* Environment 175 and four additional courses from the following physical and life sciences areas. No more than two courses may be from any one department. Atmospheric and Oceanic Sciences 101, 102, 103, 104, M105, 107, 112, 121, 123, 130, 141, Civil Engineering 153, 154, M166, Earth, Planetary, and Space Sciences 101, C113, 119, 139, 150, 153, Ecology and Evolutionary Biology 100, 109, 116, 136, 151A, 154, Environment 157, Environmental Health Sciences 100, C125, C152D, Geography 101, M102, M103, 107, M110, 116, 117, M118, 120, M126, 133.

### Social Sciences and Humanities Requirements

*Required:* Environment 140 and two courses from Anthropology 132, 133, Atmospheric and Oceanic Sciences 121, 123, English 118E, Environment M125, M133, M147, 150, M153, 155, 157, C159, M161, 162, 163, M164, 166, M167, Geography M127, 130, 138, M142, 160, 171C, Philosophy 125, Public Affairs M160, Society and Genetics 141, Urban Planning 121.

### Practicum/Sustainability Talks Requirements

*Required:* Environment 180A, 180B, 180C, 185A.

### Minor and Concentration Requirements

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor. Successful completion of a minor is indicated on the transcript and diploma.

For the **atmospheric and oceanic sciences minor**, seven 4-unit courses, including (1) three from Atmospheric and Oceanic Sciences M100, 101, 102, 103, 104, M105, M106, 107, C110, C111, 112, CM114A, C115, M120, 121, 123, 130, 135, 141, C144, 145, 150, 155, C160, C170, 180 and (2) four additional courses, two of which must be upper-division, from any of the above atmospheric and oceanic sciences courses beyond the minimum four required or from Atmospheric and Oceanic Sciences 1, 2, 3, 186 (must be taken twice), Chemistry 103, 110A, 110B, 113A, C113B, 114, Earth, Planetary, and Space Sciences 15, Ecology and Evolutionary Biology 109, C119A, 122, 123A or 123B, 147, 148, Mathematics 115A, 115B, 132, 135, 136, 146, 170A, 170B, Physics 110A, 110B, 112, M122, 131, 132. Other relevant courses from related disciplines may be substituted with prior approval of the department. At least five courses approved for the minor must be upper-division. One course may be taken on a Passed/Not Passed basis.

For the **conservation biology minor**, Ecology and Evolutionary Biology 100, 116, and four to six courses from 100L, 101, 103, 105, 109, 109L, 111, 112, 113A, 113AL, 114A, 114B, C119A, C119B, 122, M127, 129, M131, 140, 142, 143, 144, 144L, C146, 149, 151A, 152, 153, 154, 155, 161, 162, 162L, 168, C174, 176, 180A, 180B, 183, 184, any courses associated with the Field Biology Quarter or the Marine Biology Quarter or approved equivalent, Geography M103, 106, 107, 116, 117, M118, M126, M131, 133 (a maximum of two Geography courses may be applied to the minor) are required.

For the **Earth and environmental science minor**, five courses from Earth, Planetary, and Space Sciences 101, 112, C113, 139, 150, 153 are required.

For the **environmental engineering minor**, Civil Engineering 153 and five courses from Civil Engineering 110, 150, 151, 152, 154, 155, 156A, 156B, 157A, 157B, 157C, 157L, C159, C164, M165, M166, Mechanical and Aerospace Engineering 103, 105A are required. Credit for both Chemical Engineering 102A and Mechanical and Aerospace Engineering 105A is not allowed.

For the **environmental health concentration**, Epidemiology 100, two courses from Environmental Health Sciences 100, C135, C185A, C185B, and three courses from Chemistry and Biochemistry 153A, Environmental Health Sciences C125, C140, C152D, C157, C164, 203 are required.

For the **environmental systems and society minor**, seven courses from Environment M111, M125, M126, M131, M133, 134, 140, M147,

150, M153, 155, 157, C159, M161, 162, 163, M164, 166, M167, 175 are required.

For the **geography/environmental studies minor**, three courses from Geography M102, M103, 109, M118, M125, M126, M127, 130, M131, 133, 136, 138, 139B, 139C, and any two additional upper-division geography courses (except those from the preceding list and courses 194 through 199) are required.

## Honors Program

The honors program provides exceptional students an opportunity for advanced research and study, under the guidance of a faculty member, that leads to the completion of an honors thesis or research project. To qualify for graduation with honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division coursework in the major and an overall GPA of 3.0 or better, (3) complete at least 8 units of Environment 198 taken over at least two terms, and (4) produce a completed satisfactory honors thesis. The honors thesis or research project is in addition to the requirement of the completed practicum in environmental science project. Contact the student affairs officer for more information.

## Policies

### Preparation for the Major

Each course applied toward requirements for preparation for the major must be passed with a grade of C- or better. Students receiving a grade below C- in two courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

### The Major

Each course applied toward requirements for the major, except Environment 185A, must be taken for a letter grade. Students must maintain an overall grade-point average of 2.0 (C) or better in all courses applied toward the major.

## Undergraduate Minor

### Environmental Systems and Society Minor

The Environmental Systems and Society minor is designed for students who wish to augment their major program of study with courses addressing the relationships between environmental science and associated social and political issues. The minor seeks to impart a deeper understanding of environmental systems related to air, land, and water resources, providing a basis for sound professional decision making.

## Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average) and file a petition at the Institute of the Environment and Sustainability, 300 La Kretz Hall, 310-206-9193.



## The Minor

*Required Lower-Division Courses (8 units):* At least two courses from Astronomy 3, Atmospheric and Oceanic Sciences 1, 2, 3, Earth, Planetary, and Space Sciences 1, 15, 16, 20, Ecology and Evolutionary Biology 10, 25, Environment M1A, M1B, 10, 12, 25, M30, M30SL, Geography 1, 2, 5.

*Required Upper-Division Courses (20 units):* At least five courses from Environment M111, M125, M126, M131, M133, 134, 140, M147, 150, M153, 155, 157, C159, M161, 162, 163, M164, 166, M167, 175.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units applied toward the minor must be taken in residence at UCLA. Transfer or substitution of credit for any of the above is subject to institute approval; consult with an academic adviser at the institute before enrolling in any courses for the minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Doctor of Environmental Science and Engineering

The Environmental Science and Engineering (DEnv) professional doctorate program was founded in 1973 by Nobel laureate Dr. Willard Libby, who perceived a need to train environmental scientists, engineers, and policymakers in a more interdisciplinary manner than is afforded by traditional PhD programs. The program is designed with an appropriate balance of breadth and specific skills, based on a strong master's-level foundation in a science or engineering discipline. The curriculum consists of formal coursework across a full spectrum of relevant physical, biological, social, and engineering disciplines, as well as interdisciplinary research training and an off-campus residency where students complete their dissertation embedded in an agency, business, or non-profit organization. UCLA remains unique in the country in awarding the Doctor of Environmental Science and Engineering degree.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Environment and Sustainability MS, PhD

The Environment and Sustainability PhD program was launched in 2018. The program equips students with diverse perspectives to develop profound new ideas, knowledge and answers to the most important concerns facing people and the planet. The program provides a deep understanding of how fundamental principles of environmental science and sustainability can be applied to research and address key environmental challenges that require skills in multiple disciplines—preparing students for a range of careers in academia, as well as public and private sectors. To promote interdisciplinarity as the core of the program's identity, each student's program of study and dissertation research are guided by two advisers from distinct areas of research and scholarship.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Environment

### Lower-Division Courses

**M1A-M1B-M1CW. Food: Lens for Environment and Sustainability. (6–6–6)** (Same as Clusters M1A-M1B-M1CW.) Course M1A is enforced requisite to M1B, which is enforced requisite to M1CW. Limited to first-year freshmen. **M1A-M1B.** Lecture, three hours; discussion, two hours. Food as lens for local and global environmental and sustainability issues. Integration of environmental, social, economic, and technological solutions for fair, sustainable, and healthy food production, food security, and access. Focus on human impacts on Earth's biological and physical systems, including how food production and consumption contributes to, and is impacted by, global problems, including climate change, pollution, and overpopulation. Laboratory exercises included in discussions. P/NP or letter grading. **M1CW.** Special Topics. Seminar, three hours. Enforced requisite: course M1B. Examination of specialized environmental and sustainability topics as they relate to food, including air, water, biodiversity, climate change, food access, food security, and health. Satisfies Writing II requirement. Letter grading.

**10. Introduction to Environmental Science. (4)** Lecture, three hours; laboratory, one hour. Limited to undergraduate students. Introduction to environmental science as discipline and as way of thinking. Discussion of critical environmental issues at local and global scales. Fundamentals of physical, chemical, and biological processes important to environmental science. Laboratory exercises to augment lectures. Letter grading.

**12. Sustainability and Environment. (4)** Lecture, three hours; discussion, one hour. Introduction to sustainability with emphasis on environmental component, including Earth's physical, chemical, and biological processes as related to resource demands and management. Examination of application of scientific method in helping to understand and solve sustainability problems. Case studies illustrating how natural and social scientists work on environmental sustainability issues. Focus on global climate change, biodiversity, pollution, and water and energy resources presented in context of creating sustainable human society that is environmentally sound, economically viable, and socially just and equitable. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**25. Good Food for Everyone: Health, Sustainability, and Culture. (5)** Lecture, three hours; discussion, one hour. Good food is healthy, sustainably produced, and culturally meaningful. Introduction to basic concepts and history of food systems, food science and nutrition, fair and sustainable food production, natural resources and environmental issues including climate change and biodiversity, agriculture and food policy and law, food distribution and access, cultural identity and artistic engagements with food. P/NP or letter grading.

**M30. Environmental Literature and Culture. (5)** (Same as English M30.) Lecture, three hours; discussion, one hour. Enforced requisite: satisfaction of Entry-Level Writing requirement. Introduction to core themes, questions, and methods within interdisciplinary field of environmental humanities. Examination of how different culture forms (e.g., fiction, journalism, poetry, visual art) represent environmental issues. Topics may include biodiversity, wilderness, food, urban ecologies, postcolonial ecologies, environmental justice, and climate change. P/NP or letter grading.

**M30SL. Environmental Literature and Culture (Service Learning). (5)** (Same as English M30SL.) Lecture, three hours; discussion, one hour; fieldwork, two hours. Enforced requisite: satisfaction of Entry-Level Writing requirement. Introduction to core themes, questions, and methods within interdisciplinary field of environmental humanities. Examination of how different culture forms (e.g., fiction, journalism, poetry, visual art) represent environmental issues. Topics may include biodiversity, wilderness, food, urban ecologies, postcolonial ecologies, environmental justice, and climate change. Service learning component includes meaningful work with off-campus agency/agencies selected by instructor. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M102. Soils and Environment. (4)** (Formerly numbered M127.) (Same as Ecology and Evolutionary Biology M127 and Geography M102.) Lecture, three hours; discussion, one hour; field trips. General treatment of soils and environmental implications: soil development, morphology, and worldwide distribution of soil orders; physical, chemical, hydrologic, and biological properties; water use, erosion, and pollution; management of soils as related to plant growth and distribution. P/NP or letter grading.

**M102L. Soils and Environment: Field. (1)** (Formerly numbered M127L.) (Same as Ecology and Evolutionary Biology M127L and Geography M102L.) Laboratory, one hour; field excursions. Corequisite: course

**M102. Investigations and demonstrations supporting material in course M102, including excavating, describing, and naming soils in field, soil forming processes, geomorphology, and soils.** P/NP or letter grading.

**M103. Soil and Water Conservation. (4)** (Formerly numbered M114.) (Same as Geography M103.) Lecture, three hours; discussion, one hour. Enforced requisite: one course from course 10, Geography 1, 2, Life Sciences 7B. Designed for juniors/seniors. Systematic study of processes of and hazards posed by erosion, sedimentation, development, and pollution and techniques needed to conserve soil and maintain environmental quality. Scope includes agriculture, forestry, mining, and other rural uses of land. P/NP or letter grading.

**M111. Earth and Its Environment. (4)** (Same as Atmospheric and Oceanic Sciences M100.) Lecture, three hours. Overview of Earth as system of distinct, yet intimately related, physical and biological elements. Origins and characteristics of atmosphere, oceans, and land masses. Survey of history of Earth and of life on Earth, particularly in relation to evolution of physical world. Consideration of possibility of technological solutions to global environmental problems using knowledge gained during course. Letter grading.

**121. Conservation of Biodiversity. (4)** Lecture, three hours; discussion, two hours. Not open for credit to students with credit for Ecology and Evolutionary Biology 116. Examination of interrelation of natural biotic and human systems. Description of distribution of biodiversity and natural processes that maintain it. Critical analysis of various levels of threats and multidimensional challenges required for mitigating threats. Letter grading.

**M125. Environmentalism: Past, Present, and Future. (4)** (Formerly numbered M132.) (Same as Geography M125 and Urban Planning M165.) Lecture, three hours; discussion, one hour. Exploration of history and origin of major environmental ideas, movements or countermovements they spawned, and new and changing nature of modern environmentalism. Introduction to early ideas of environment, how rise of modern sciences reshaped environmental thought, and how this was later transformed by 19th-century ideas and rise of American conservation movements. Review of politics of American environmental thought and contemporary environmental questions as they relate to broader set of questions about nature of development, sustainability, and equity in environmental debate. Exploration of issues in broad context, including global climate change, rise of pandemics, deforestation, and environmental justice impacts of war. Letter grading.

**M126. Environmental Change. (4)** (Formerly numbered M130.) (Same as Geography M126.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Examination of natural forces producing environmental changes over past two million years. How present landscape reflects past conditions. Effects of environmental change on people. Increasing importance of human activity in environmental modification. Focus on impact of natural and anthropogenic changes on forests. P/NP or letter grading.

**M131. Human Impact on Biophysical Environment. (4)** (Formerly numbered M109.) (Same as Geography M131.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Examination of history, mechanisms, and consequences of interactions between humans and environment. Exploration in depth of three thematic topics (deforestation, desertification, and greenhouse gas increase and ozone depletion) and four major subjects (soil, biodiversity, water, and landforms). P/NP or letter grading.

**M133. Environmental Sociology. (4)** (Same as Society and Genetics M133 and Sociology M115.) Lecture, three hours; discussion, one hour. Relationship between society and environment. Analysis in detail of interrelations between social factors (such as class, race, gender, and religion) and environmental factors (such as pollution, waste disposal, sustainability, and global warming). P/NP or letter grading.

### **134. Environmental Economics with Data Analysis.**

**(4)** Lecture, three hours. Requisite: one course from Economics 41, Life Sciences 40, Political Science 6, Statistics 10, 12, 13, or other statistical analysis course approved by instructor. Examination of challenges of balancing environmental protection with wants and needs of people in economy. Focus on how to design efficient public policies that meet environmental goals. How to quantify cause-and-effect relationships, for example, between pollution and infant mortality, using non-experimental data. P/NP or letter grading.

### **140. Foundations of Environmental Policy and Regulation. (4)**

Lecture, three hours. Introduction to environmental policy and regulation in U.S. Provides basic knowledge and skills needed to work as professional environmental problem solver. Exploration of environmental harms that are subject to regulation, role of science in informing policy and regulation, evolution of environmental regulation, different types of regulatory instruments, regulatory process, and alternative approaches to environmental decision making. Includes California Environmental Quality Act (CEQA), Proposition 65, California's long-standing leadership role in air pollution control, and state's pioneering efforts in regulating greenhouse gas emissions. P/NP or letter grading.

### **M147. Critical Analysis of Strategies toward Environmental Justice. (4)**

(Same as Community Engagement and Social Change M147.) Lecture, three hours. Exploration of and engagement in critical analyses of strategies toward environmental justice including environmental education, civic ecology, environmental stewardship, policy advocacy campaigns, citizen science, community engagement, community planning, and urban tree canopy. Strategies are interwoven across four interconnected modules: community exposure to harm; access to ecosystem benefits and services; lack of diversity and engagement; and utilization of social-ecological systems approach. Students conduct case study analysis of strategies employed in efforts to move toward environmental justice, and develop collective course resource on environmental justice strategies. P/NP or letter grading.

### **150. Environmental Journalism, Science Communications, and New Media. (4)**

Lecture, three hours. Introduction to environmental journalism, science communications, and new media, including weekly guest lectures by prominent successful practitioners in wide variety of media. Focus on technologies, methods, genres, and theories of communicating environmental challenges, exploring solutions, and engaging public in newspapers, television, radio, movies, online, on mobile devices, and through social media. Discussion of possibilities and limitations of different media and importance of communications for environmental science, policy, public understanding, and individual decision making. Production by students of environmental communications in variety of media. P/NP or letter grading.

### **M153. Introduction to Sustainable Architecture and Community Planning. (4)**

(Same as Architecture and Urban Design CM153.) Lecture, three hours. Relationship of built environment to natural environment through whole systems approach, with focus on sustainable design of buildings and planning of communities. Emphasis on energy efficiency, renewable energy, and appropriate use of resources, including materials, water, and land. Letter grading.

### **155. Energy and Society in Time of Climate Change: Moving toward Just Transition. (4)**

Lecture, three hours. Introduction to energy systems and their regulatory infrastructure, with focus on U.S. and California. History of field of energy including rise of coal mining, development of petroleum both in U.S. and Middle East, and enrollment of public lands for extraction or collection of energy from fossil deposits and flows. Examination of concept of energy and differences between energy and power. Focus on understanding contemporary energy system, different sources of energy, how energy is transmitted and distributed, and regulatory infrastructure that has arisen around this vast and essential system that provides electricity and natural gas for most commercial and domestic activi-

ties. Discussion of challenges and opportunities in current transition away from fossil fuels and progress of just transition in California. P/NP or letter grading.

### **157. Energy, Environment, and Development. (4)**

Lecture, three hours. Requisites: Mathematics 3A and 3B (or 31A and 31B), Physics 1A and 1B (or 6A and 6B). Introduction to basic energy concepts and examination of role of various energy sources, energy conversion technologies, and energy policies in modern life. Analysis of implications of current patterns of energy production and consumption for future economic and environmental well-being. Integration of concepts and methods from physical and life sciences, engineering, environmental science, economics, and public policy. Basic quantitative skills provided to analyze and critique technical, economic, and policy choices to address challenge of balancing economic growth and environmental sustainability. P/NP or letter grading.

### **C159. Life-Cycle Assessment. (4)**

Lecture, three hours. Requisites: Life Sciences 30A and 30B, or Mathematics 3A and 3B (or 31A and 31B). Public discourse about current patterns of production and consumption of energy, and goods and services more broadly, suggest such patterns are environmentally and economically unsustainable. Introduction to basic concept of life-cycle assessment (LCA), including analytical frameworks and quantitative techniques for systematically and holistically evaluating environmental trade-offs presented by different alternatives. Focus on methodology of LCA to compute various material inputs and environmental releases from all activities associated with life cycle (i.e., raw material extraction, processing, end use, and disposal) of products or services. Discussion of strengths and limitations of LCA as tool for decision making. Students perform life-cycle analysis of one technology, product, or service of their choice. Concurrently scheduled with course C259. P/NP or letter grading.

### **160. Topics in Environmental Economics and Policy. (4)**

Seminar, three hours. Requisite: Statistics 12 or 13. Examination of intersection of environmental economics and policy, with focus on testing policy-relevant environmental hypotheses using economics research approach. Invited scholars present research aimed at yielding policy-relevant results on various topics such as climate change, pollution, and transportation. P/NP or letter grading.

### **M161. Global Environment and World Politics. (4)**

(Same as Political Science M122B.) Lecture, three or four hours; discussion, one hour (when scheduled). Recommended requisite: Political Science 20. Politics and policy of major global environmental issues such as climate change, integrating law, policy, and political science perspectives. P/NP or letter grading.

### **162. Entrepreneurship and Finance for Environmental Scientists. (4)**

Lecture, three hours; discussion, one hour. Focus on key entrepreneurial and financial concepts, with emphasis on applications that are vital for implementing environmental solutions in private, public, and nonprofit settings. Topics include basic elements of finance, project evaluation, financial planning, and marketing. Development of entrepreneurial skills to recognize opportunity and transfer ideas into viable projects that are better for environment and that benefit people and communities. Case studies used to equip students with tools necessary to successfully execute environmental goals and objectives. P/NP or letter grading.

### **163. Business and Natural Environment. (4)**

Lecture, three hours. Examination of role of business in mitigating environmental degradation and incentives to be more environmentally responsive. Emphasis on corporate strategies that deliver value to shareholders while responding to environmental concerns. P/NP or letter grading.

### **M164. Environmental Politics and Governance. (4)**

(Same as Urban Planning M160.) Lecture, three hours. Environmental planning is more than simply finding problems and fixing them. Each policy must be negotiated and implemented within multiple, complex systems of governance. Institutions and politics matter deeply. Overview of how environmental governance works in practice and how it might be improved. Letter grading.

**166. Leadership in Water Management. (4)** Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Examination of water quality and water supply issues, including interactions between scientific, technological, management, and policy issues. Invited experts, scholars, and practitioners discuss relevant issues such as pollution, climate change, and water infrastructure. Emphasis on solutions involving integrated water supply and wastewater systems. Leadership development through writing instruction and negotiations and media training. P/NP or letter grading.

**M167. Environmental Justice through Multiple Lenses. (4)** (Same as Public Affairs M161 and Urban Planning M167.) Lecture, three hours. Examination of intersection between race, economic class, and environment in U.S., with focus on issues related to social justice. Because environmental inequality is highly complex phenomenon, multidisciplinary and multi-population approach taken, using alternative ways of understanding, interpreting, and taking action. P/NP or letter grading.

**170. Environmental Science Colloquium. (1)** Seminar, 90 minutes; one field trip. Limited to undergraduate students. Study of current topics in environmental science, including participation in weekly colloquium series and field trips. May be repeated for credit. P/NP grading.

**175. Programming with Big Environmental Data-sets. (4)** Lecture, three hours. Prerequisite: Life Sciences 40 or Statistics 12 or 13. Students gain practical experience conducting empirical research by learning how to program using R. Modern empirical research often requires use of powerful statistical software like R. This programming language shares many similarities with other statistical programs, providing students with valuable labor-market skill. P/NP or letter grading.

**180A. Practicum in Environmental Science. (4)** Lecture, three hours; discussion, two hours. Enforced prerequisite: Statistics 12 or 13. Limited to Environmental Science majors who have completed 40 or more units of preparation for major courses, including statistics, and 12 or more units of upper-division courses toward major or minor requirements. Examination of case studies and presentation of tools and methodologies in environmental science, building on what students have been exposed to in other courses. Letter grading.

**180B. Practicum in Environmental Science. (5)** Lecture, one hour; laboratory, five hours. Prerequisite: course 180A. Course 180B is requisite to 180C. Limited to junior/senior Environmental Science majors. Investigation of various aspects of one environmental case study representing actual multidisciplinary issue. Particular emphasis on developing skills required for working as professionals in this field. Work may involve site investigations, original data collection and analysis, mapping and geographic information systems, and environmental policy and law issues. Case study to be defined and conducted with collaboration of local agency or nonprofit institution. Letter grading.

**180C. Practicum in Environmental Science. (5)** Lecture, one hour; laboratory, five hours. Prerequisite: course 180B. Limited to junior/senior Environmental Science majors. Investigation of various aspects of one environmental case study representing actual multidisciplinary issue. Particular emphasis on developing skills required for working as professionals in this field. Work may involve site investigations, original data collection and analysis, mapping and geographic information systems, and environmental policy and law issues. Case study to be defined and conducted with collaboration of local agency or nonprofit institution. Letter grading.

**185A. Sustainability Talks. (1)** Lecture, two hours. Analysis of principles of sustainability through series of lectures and films by world-renowned faculty members, authors, environmentalists, entrepreneurs, policymakers, and progressive thinkers. May be repeated for credit. P/NP grading.

**185B. Sustainability Action Research. (2)** Lecture, two hours; fieldwork, four hours. Investigation of issues of campus sustainability, including energy efficiency, transportation, waste stream management, sustainable food practices, and more by student re-

search to generate coalition of student researchers that, together with faculty members and UCLA staff, strive to make UCLA more sustainable community. May be repeated for credit. Letter grading.

**185C. Sustainability Action Leaders. (3)** Seminar, two hours; fieldwork, six hours. Students lead research teams to investigate issues of campus sustainability, including energy efficiency, transportation, waste stream management, sustainable food practices, and more to generate coalition of student researchers that, together with faculty members and UCLA staff, strive to make UCLA more sustainable community. May be repeated for credit. Letter grading.

**186. Comparative Sustainability Practices in Local/Global Settings. (4)** Fieldwork, four hours. Guided fieldwork and comparative analysis used to assess local sustainability practices and policies in diverse regional or international settings. Emphasis on comparing role of local and regional culture, geography, economic climate, and governmental policies on sustainability awareness and practices. Use of observations, interviews, and unobtrusive measures to document and analyze role and influence of local/global context on sustainability behavior of individuals, small businesses, and other institutions in everyday life. Letter grading.

**M187. Careers in Earth System, Environment, and Space Sciences. (1)** (Same as Atmospheric and Oceanic Sciences M187 and Earth, Planetary, and Space Sciences M187.) Seminar, one hour. Examination of central role of science in understanding and addressing grand challenges in climate, earth and environment, and space exploration through seminars given by scientists, engineers, managers, and entrepreneurs from national laboratories and industry. Includes tour of National Aeronautics and Space Administration (NASA) Jet Propulsion Laboratory (JPL). Students engage speakers on science, career preparation, opportunities for undergraduate internships, and building fulfilling careers. P/NP grading.

**188A-188B. Special Courses in Environment. (4-2)** Lecture, three hours; discussion, one hour (when scheduled—course 188A) and two hours (course 188B). Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for

maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**193. Journal Club Seminars: Environment. (1)** Seminar, one hour. Limited to undergraduate students. Discussion of readings selected from current literature of field. May be repeated for credit. P/NP grading.

**195. Community or Corporate Internships in Environmental Science. (2 or 4)** Tutorial, to be arranged. Preparation: 3.0 grade-point average in major. Limited to junior/senior majors. Internship in supervised setting in community agency or business related to environmental science and/or sustainability. Students meet on regular basis with faculty supervisor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required; consult undergraduate adviser. P/NP grading.

**198. Honors Research in Environmental Science. (2 to 4)** Tutorial, four hours. Limited to junior/senior Environmental Science majors. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. Must be taken for at least two terms and for total of at least 8 units. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research in Environment. (2 to 4)** Tutorial, two hours. Preparation: submission of written proposal outlining study or research to be undertaken. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Progress report must be submitted to faculty mentor at end of term. Culminating paper or project required. May be repeated for credit, but only 4 units may be taken each term. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A-200B. Issues and Methods in Environment and Sustainability. (4-4)** Seminar, four hours. Course 200A is requisite to 200B. Examination of interdisciplinary case studies that approach problems in environment and sustainability as issues with scientific, social, economic, political, philosophical, ethical, historical, cultural, and policy dimensions. Case studies illustrate use of qualitative and quantitative methods of analysis drawn from natural sciences, social sciences, and humanities. Emphasis on conceptual frameworks for defining environmental problems and implementation of research results in solving real-world problems. S/U or letter grading.

**205A-205B-205C. Major Problems in Environment and Sustainability. (2-2-2)** Seminar, three hours. Yearlong investigation of questions through series of case studies of five of most significant problems in environment and sustainability over last century: Dust Bowl, lead contamination, dichlorodiphenyltrichloroethane (DDT), stratospheric ozone depletion, and tropical deforestation. Questions include how environmental problems become matters of public concern; what tools, techniques, and practices that make problems visible and legible to different publics and that inform possibilities for response are; how efforts aimed at understanding specific problems from different perspectives changed way other environmental problems and larger processes of environmental change are seen and approached; who gets left out in these different ways of seeing, and how do different ways of seeing and governing specific problems facilitate, justify, and compound imposition of harms on particular groups of people. Concurrently scheduled with Law 505A-505B. In Progress (205A, 205B) and S/U or letter grading (205C).

**M235. Modern Environmental Statistics. (4)** (Same as Statistics M235.) Seminar, three hours. Limited to graduate students. Prerequisites: undergraduate level calculus, linear algebra, and introductory statistics; scientific computing. Introduction to statistical approaches in environmental science, with focus on climate science. Topics include Bayesian modeling, hypothesis testing, regression, causality, multidimensional data analysis, time series modeling, and extreme value analysis. Draws upon relevant examples in scientific literature. S/U or letter grading.

**240. Food, Energy, and Water Systems Management Seminar. (1)** Seminar, one hour. Designed for students in science, technology, engineering, and mathematics (STEM) field interested in nexus of food, energy, and water systems (FEWS) management and sustainability. Discussion of issues of science, technology, policy, economics, and law with experts in industry, academia, and government. Career development activities including presentation skills, conflict resolution, business and entrepreneurship. Course is part of National Science Foundation (NSF) graduate traineeship in integrated urban solutions for food, energy, and water systems (INFEWS). Enrollment for non-INFEWS students in STEM graduate education and related sustainability majors/topics by consent of instructor. S/U grading.

**241. Food, Energy, and Water Systems Management in Urban Systems Field Laboratory. (4)** Fieldwork, four hours. Designed for students in science, technology, engineering, and mathematics (STEM) field interested in nexus of food, energy, and water systems (FEWS) management and sustainability. Weekly visits to facility related to FEWS, and discussion of issues of science, technology, policy, economics, and law in written report. Course is part of National Science Foundation (NSF) graduate traineeship in integrated urban solutions for food, energy, and water systems (INFEWS). Enrollment for non-INFEWS students in STEM graduate education and related sustainability majors/topics by consent of instructor. S/U or letter grading.

**M242. Science Communications and Environmental Media. (4)** (Formerly numbered 242.) (Same as English M290.) Seminar, three hours. Designed for graduate students in food, energy, and water systems (FEWS) training grant program to survey fields of science communications and environmental narrative from nonfiction to new media (multimedia journalism, documentary, social media, virtual reality, etc.), and to develop collaborative projects communicating student research to diverse public audiences. Course is part of National Science Foundation (NSF) graduate traineeship in integrated urban solutions for food, energy, and water systems (INFEWS). Enrollment for non-INFEWS students in STEM graduate education and related sustainability majors/topics by consent of instructor. S/U or letter grading.

**250. Tools for Sustainability Assessment. (4)** Lecture, three hours. Recommended preparation: introductory course in industrial ecology, ecological economics, environmental economics, business and management, or public policy analysis. Public discourse about implications of current patterns of production and consumption of energy and various goods and services suggests such patterns are unsustainable. What is meant by sustainability and how is it quantified? Focus on concepts and tools to assess sustainability at micro-level of individuals, products, or firms using various techniques, including life-cycle assessment, input-output analysis, and cost-benefit analysis. Exploration of sustainability at macro-level for one entire economy or nation. Discussion of usefulness and limitations of various metrics as guide for public and private decision making. S/U or letter grading.

**C259. Life-Cycle Assessment. (4)** Lecture, three hours. Requisites: Life Sciences 30A and 30B, or Mathematics 3A and 3B (or 31A and 31B). Public discourse about current patterns of production and consumption of energy, and goods and services more broadly, suggest such patterns are environmentally and economically unsustainable. Introduction to basic concept of life-cycle assessment (LCA), including analytical frameworks and quantitative techniques for systematically and holistically evaluating environmental trade-offs presented by different alternatives. Focus on methodology of LCA to compute various material inputs and environmental releases from all activities associated with life cycle (i.e., raw material extraction, processing, end use, and disposal) of products or services. Discussion of strengths and limitations of LCA as tool for decision making. Students perform life-cycle analysis of one technology, product, or service of their choice. Concurrently scheduled with course C159. S/U or letter grading.

**260. Information, Technology, Business, and Society. (4)** Seminar, three hours. Interdisciplinary research seminar to bring sound social sciences methods to latest technology developments to design effective information-based solutions to social problems. Topics include selection and framing of research questions, developing measurements, designing appropriate methods (e.g., surveys, experiments, using available data), ethical issues, and writing up research proposals. S/U or letter grading.

**277. Leaders in Sustainability. (4)** Lecture, three hours. Common course for all students participating in Leaders in Sustainability Program, including those from engineering, law, management, public affairs, public health, natural and social sciences, and others. Creation of environment for academically based discussions on various sustainability-related themes, capitalizing on wide mix of disciplines represented among participating students. Sessions feature UCLA faculty members, external speakers, and leadership skills to help students learn more about how to best put their interests in sustainability to use. Letter grading.

**290. Seminar in Environment and Sustainability. (2)** Seminar, 90 minutes. Seminars sponsored by Institute of the Environment and Sustainability and other units. Planning and execution of presentations on topics of choice. Emphasis on development of communication skills. May be repeated for credit. S/U grading.

**297A-297B. Advanced Topics in Environment and Sustainability. (4-2)** Seminar, four hours (course 297A) and two hours (course 297B). Advanced study and analysis of variable current topics in environment and sustainability. Consult Schedule of Classes for topics and instructors. May be repeated for credit with consent of instructor. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Environmental Science and Engineering Problems Course. (8)** Seminar, eight hours. Primarily designed for environmental science and engineering doctoral students. Multidisciplinary technical and socioeconomic analysis and prognosis of significant current environmental problems. May be repeated for credit. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual or Tutorial Studies. (2 to 8)** Tutorial, to be arranged. Supervised investigation of advanced environmental problems. S/U grading.

**599. Doctoral Dissertation Research. (2 to 12)** Tutorial, to be arranged. Limited to students who have advanced to doctoral candidacy. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## ENVIRONMENTAL HEALTH SCIENCES

*Jonathan and Karin Fielding School of Public Health*

16-035 Center for Health Sciences  
Box 177220  
Los Angeles, CA 90095-1772

Environmental Health Sciences  
310-825-6381

Rachael M. Jones, MPH, PhD, *Chair*

## Faculty Roster

### Professors

Jesus A. Araujo, MD, PhD  
Michael D. Collins, PhD  
Jared M. Diamond, PhD  
Michael L. Jerrett, PhD  
Rachael M. Jones, MPH, PhD  
Jian Li, PhD  
Timothy Malloy, JD (*Frank G. Wells Endowed Professor of Environmental Law*)  
André E. Nel, MBChB, PhD  
Shane S. Que Hee, PhD  
Beate R. Ritz, MD, PhD  
Wendie A. Robbins, RN, PhD, FAAN (*Audrienne H. Moseley Professor of Biological Nursing Science*)  
Linda Rosenstock, MD, MPH  
Irwin H. Suffet, PhD  
Yifang Zhu, PhD

### Professors Emeriti

Richard F. Ambrose, PhD  
Brian L. Cole, DrPH  
Climis A. Davos, PhD  
Curtis D. Eckhart, PhD  
Richard J. Jackson, MD, MPH  
Robert A. Mah, PhD  
Arthur M. Winer, PhD

### Associate Professors

Alan I. Barreca, PhD  
Kirsten Schwarz, PhD  
Candace Su-Jung Tsai, ScD  
Jane L. Valentine, PhD

### Assistant Professors

Lara J. Cushing, MPH, PhD (*Jonathan and Karin Fielding Presidential Professor of Health Equity*)  
Miriam E. Marlier, PhD

### Adjunct Professors

Pouran D. Faghri, MD  
Daniel Z. Uslan, MD

### Adjunct Associate Professor

Kevin Y. Njabo, PhD

### Adjunct Assistant Professors

Hamid Arabzadeh, CIH  
Angelo J. Bellomo, MS  
Tao Huai, PhD

## Overview

The Department of Environmental Health Sciences focuses its research and educational activities on the protection of human health from biological, chemical, mechanical, and physical hazards in the environment. Its graduates are scientists, professionals, and leaders capable of identifying and measuring stressors of environmental concern; evaluating the health, environmental, and all other impacts of such stressors; developing means for their effective management; and evaluating alternative policies directed at improving and protecting health and the environment. Such training is accomplished through several degree programs that offer specialized study in selected academic areas of environmental health sciences such as air pollution, environmental chemistry, environ-



mental policy, toxicology, built environment and health, climate and health, global environmental health, water quality, occupational health, and industrial hygiene. Graduates of the department pursue careers in the private or public sector as researchers, educators, managers, policymakers, and/or practitioners.

The department offers Master of Science (MS) and Doctor of Philosophy (PhD) degrees in Environmental Health Sciences and, through the Fielding School of Public Health, the Master of Public Health (MPH) degree with a specialization in environmental health sciences (see [Public Health Schoolwide Programs](#)). The department also offers an area of focus on industrial hygiene for its MS and MPH degrees. A concurrent degree program (Environmental Health Sciences MPH/Master of Urban Planning) is also offered. The interdepartmental [Molecular Toxicology](#) program offers a PhD degree.

## Graduate Major

### Environmental Health Sciences MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Environmental Health Sciences

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Introduction to Environmental Health. (4)** Lecture, three hours; discussion, one hour. Preparation: one course each in chemistry and biology. Limited to nonmajors. Not open for credit to students with credit for course 120. Introduction to environmental health, including coverage of sanitary principles and chronic and acute health effects of environmental contaminants. P/NP or letter grading.

**101. Fundamentals of Chemistry for Environmental Health. (3)** Lecture, three hours; discussion, one hour. Guided tutorial on fundamental chemical concepts that are important for public health students that either do not have strong background in chemistry or who have not recently taken chemistry class and want to refresh their knowledge. Discussion of examples relevant to environmental health more broadly in each topic area and used to illustrate why understanding fundamental chemical concepts are important. Interactive study with focus on core chemical concepts. Recommended to be taken before or concurrently with introductory courses. P/NP or letter grading.

**120. Environment and Health. (5)** Lecture, three hours; discussion, one hour. Limited to Public Health majors. Not open for credit to students with credit for course 100. Examination of scientific principles and methods of field, as well as translation of science to environmental health practice. Topics include environmental stressors and their health effects, regulations and policy, equity and justice, and systems thinking. Acquisition of skills important for public health professionals, such as application of scientific information to real-world problems and ability to communicate effectively with different stakeholders. Letter grading.

**C125. Atmospheric Transport and Transformations of Airborne Chemicals. (4)** Lecture, four hours. Preparation: one year of calculus, one course each in physics, organic chemistry, and physical chemistry. Designed for science, engineering, and public health students. Role of regional or long-range transport, and atmospheric lifetimes and fates of airborne chemicals in phenomena such as photochemical smog, acid deposition, stratospheric ozone depletion, accumulation of greenhouse gases, and regional and global distribution of volatile toxic compounds. Concurrently scheduled with course C225. P/NP or letter grading.

**C135. Environmental Policy for Science and Engineering. (4)** Lecture, four hours. Limited to senior undergraduate and graduate students. Examination of theoretical underpinnings of several major types of regulatory policy, as well as practical issues involved in implementing and enforcing each. Exploration of selection and impact of regulatory forms from variety of disciplines and viewpoints. Focus on traditional command and control regulation (including self-executing performance standards and permitting), market-based regulation (such as emissions trading), remediation, and emerging regulatory approaches such as management-based regulation and alternatives assessment. Issues of compliance and enforcement. Concurrently scheduled with course C235. P/NP or letter grading.

**C140. Fundamentals of Toxicology. (4)** Lecture, four hours. Preparation: one course each in biology, organic chemistry, and biochemistry. Essential aspects of toxicology, with emphasis on human species. Absorption, distribution, excretion, biotransformation, as well as basic toxicologic processes and organ systems. Concurrently scheduled with course C240. Letter grading.

**C152D. Properties and Measurement of Airborne Particles. (4)** Lecture, four hours. Preparation: one year each of chemistry, physics, and calculus. Basic theory and application of aerosol science to environmental health, including properties, behavior, sampling, and measurement of aerosols and quantitative problems. Concurrently scheduled with course C252D. P/NP or letter grading.

**C157. Risk Assessment and Standard Setting. (4)** Seminar, four hours. Prerequisite: course C140. Designed to provide students with opportunity to review scientific basis for association of selected occupational and environmental exposures with disease.

Special emphasis on critical evaluations of literature. Attention specifically to interface of science and regulatory standards. Concurrently scheduled with course C257. P/NP or letter grading.

**C164. Fate and Transport of Organic Chemicals in Aquatic Environment. (4)** Lecture, four hours. Recommended prerequisites: Chemistry 14A and 14B, or 20A and 20B. Evaluation of how and where and in what form and concentration organic pollutants are distributed in aquatic environments. Study of mass transport mechanisms moving organic chemicals between phases, biological degradation and accumulation, and chemical reactions. Effect of humic substances on these processes. Concurrently scheduled with course C264. P/NP or letter grading.

**M166. Environmental Microbiology. (4)** (Same as Civil Engineering M166.) Lecture, four hours; discussion, two hours; outside study, six hours. Recommended prerequisite: Civil Engineering 153. Microbial cell and its metabolic capabilities, microbial genetics and its potentials, growth of microbes and kinetics of growth, microbial ecology and diversity, microbiology of wastewater treatment, probing of microbes, public health microbiology, pathogen control. Letter grading.

**M166L. Environmental Microbiology Laboratory. (2)** (Same as Civil Engineering M166L.) Lecture, one hour; laboratory, two hours; outside study, two hours. Prerequisite: course M166 (may be taken concurrently). General laboratory practice within environmental microbiology, sampling of environmental samples, classical and modern molecular techniques for enumeration of microbes from environmental samples, techniques for determination of microbial activity in environmental samples, laboratory setups for studying environmental biotechnology. Letter grading.

**C185A. Foundations of Environmental Health Sciences. (4)** Lecture, four hours. Preparation: one year of undergraduate biology and chemistry. Introduction to field of environmental health sciences designed for students pursuing concentration in environmental health or Public Health minors. Examination of series of topics relevant to science of environmental and occupational health (e.g., climate change, ecology, microbiology, and toxicology) by introducing scientific basis from ecological perspective and describing how topics relate to health on a biochemical and molecular basis. Emphasis on scientific aspects of field, with focus on critique of primary literature and quantitative approaches for examination of topics to provide skills that are critical to perform research. Concurrently scheduled with course C200A. Letter grading.

**C185B. Foundations of Environmental Health Sciences for Public Health Professionals. (2)** Lecture/seminar, two hours. Preparation: 4 units each of undergraduate chemistry and biology. Future environmental health and public health leaders must understand vocabulary and systems issues related to local, regional, and global environmental factors affecting public health. Development of content knowledge and thought processes to effectively analyze environmental health problems and development, implementation, and leading of actions to address these problems. Supplements content presented in Public Health 200A and 200B and Environment 100. Concurrently scheduled with course C200B. Letter grading.

**C185C. Foundations of Environmental Health Sciences. (6)** Lecture, four hours; group project, two hours. Enforced prerequisite: course C185A or C185B. Multidisciplinary aspects of environmental health sciences in context of public health for environmental health majors. Concurrently scheduled with course C200C. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental read-

ings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Environmental Health Sciences. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Environmental Health Sciences. (2 to 8)** Tutorial, one hour. Entry-level research apprenticeship under guidance of faculty mentors affiliated with research interests. Collaboration with faculty mentors on their research in area related to environmental health sciences. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**C200A. Foundations of Environmental Health Sciences. (4)** Lecture, four hours. Preparation: one year of undergraduate biology and chemistry. Introduction to field of environmental health sciences designed for students pursuing MS, MPH, and PhD degrees. Examination of series of topics relevant to science of environmental and occupational health (e.g., climate change, ecology, microbiology, and toxicology) by introducing scientific basis from ecological perspective and describing how topics relate to health on a biochemical and molecular basis. Emphasis on scientific aspects of field, with focus on critique of primary literature and quantitative approaches for examination of topics to provide skills that are critical to perform research. Concurrently scheduled with course C185A. Letter grading.

**C200B. Foundations of Environmental Health Sciences for Public Health Professionals. (2)** Lecture/seminar, two hours. Preparation: 4 units each of undergraduate chemistry and biology. Future environmental health and public health leaders must understand vocabulary and systems issues related to local, regional, and global environmental factors affecting public health. Development of content knowledge and thought processes to effectively analyze environmental health problems and development, implementation, and leading of actions to address these problems. Supplements content presented in Public Health 200A and 200B and Environment 100. Concurrently scheduled with course C185B. Letter grading.

**C200C. Foundations of Environmental Health Sciences. (6)** Lecture, four hours; group project, two hours. Enforced requisite: course C200A or C200B. Multidisciplinary aspects of environmental health sciences in context of public health for environmental health majors. Concurrently scheduled with course C185C. Letter grading.

**200D. Policy Analysis for Environmental Health Science. (4)** Lecture, two hours; discussion, two hours. Designed for second-year Environmental Health Sciences MS and MPH students. Practice-focused synthesis and application of content from prior courses to analyze current environmental health policy issues. Students learn fundamentals of environmental health law, regulatory frameworks, communication strategies, approaches for working with community-based organizations, and policy analysis methods. Focus on environmental and occupational health and policy aspects of single case study. S/U or letter grading.

**201. Seminar: Health Effects of Environmental Contaminants. (2)** Seminar, two hours. Requisites: courses C200A or C200B and C200C. Emphasis on health effects of air, water, environmental pollutants on man and review of research literature. May be repeated for credit. S/U or letter grading.

**202. Seminar: Environmental Chemistry. (2)** Seminar, one hour. Requisites: courses C200A, C200B, 410A, 410B. Environmental chemistry aspects of environmental health sciences through multimedia analyses and biological and microbiological analyses. May be repeated for credit. Letter grading.

**203. Seminar: Ecotoxicology. (2)** Seminar, two hours. Discussion of various topics in ecotoxicology. Topics vary from term to term and include aspects of environmental chemistry, toxicology, and ecology. May be repeated for credit. S/U grading.

**204. Seminar: Exposure Assessment. (2)** Seminar, two hours. Discussion of various topics in exposure assessment. Topics vary by term and include aspects of population activity, microenvironments, types of monitoring (outdoor, indoor, personal, biomarkers), and multimedia sources of exposure. S/U grading.

**205. Environmental Health Sciences Doctoral Seminar. (2)** Seminar, two hours. Limited to environmental health sciences doctoral students. Presentation of current research of environmental health sciences doctoral students. May be repeated for credit. S/U grading.

**206. Seminar: Applied Coastal Ecology. (2)** Seminar, two hours. Discussion of various topics in applied coastal ecology. Topics vary by term and include wetland ecology, restoration ecology, and ecology and management of coastal watersheds. May be repeated for credit. S/U grading.

**207. Introduction to Geographic Information Systems. (4)** Lecture, two hours; laboratory, two hours. Introduction to geographic information systems (GIS), including use of GIS software, mapping, geocoding, and data analysis. S/U or letter grading.

**208. Built Environment and Health. (4)** Lecture, three hours; discussion, one hour. Limited to public health and urban planning graduate students. Interdisciplinary course on built environment and health and breaking down silos. U.S. and other developed, as well as developing, countries are facing increasingly lethal and costly epidemics of acute and chronic diseases related to land use and built environment decisions. While hazards presented by air and water pollution are well recognized for acute, infectious, and toxicological illnesses, there is increasing recognition of hazards presented by building and community designs that fail to recognize human health. Land use and built environment decisions impact every age group and social and racial minority. Impacts range from very acute (motor vehicle trauma) to long term (obesity, cancer, heart disease). Decisions have as their bases economic, financial, insurance, housing, and other factors. Analysis of each factor and related disease endpoints. S/U or letter grading.

**209. Practical Applications in Environmental Health Sciences. (2)** Lecture, two hours. Enforced requisites: courses C200A, C200B. Description of many leading environmental and occupational health problems that environmental health practitioners face today, conducted as series of lectures, assignments, hands-on field exercises, and group projects, to help students develop skills necessary to integrate concepts across disciplines in field of environmental health. May satisfy some requirements needed to qualify for Registered Environmental Health Specialist (REHS) certification. S/U or letter grading.

**212. Applied Ecology. (4)** Lecture, four hours. Preparation: one ecology course. Application of ecological theory and principles to solve environmental problems, including conservation biology, assessment of environmental impacts, and restoration ecology and mitigation of environmental impacts. Letter grading.

**213. Seminar: Practical Aspects of Biosafety and Biosecurity. (2)** Seminar/discussion, two hours. Preparation: one year of introductory biology. Recommended requisite: Microbiology 101 or 102. Designed for environmental health sciences graduate students and students in UCLA Biosafety Training Program. Interactive seminar with focus on critical concepts in and practical aspects of biosafety, biosecurity, risk assessment, and risk management that are needed for individuals wishing to serve as interns in UCLA biosafety program and/or become biosafety professionals. S/U or letter grading.

**214. Children's Environmental Health: Prenatal and Postnatal. (4)** Lecture, four hours. Preparation: one year each of chemistry and biology. Examination of how environmental exposures to chemical, physical, and biological agents during period of maturation

(from fertilization to adulthood) cause pathophysiological perturbations in homeostasis at any stage during life. Letter grading.

**215. Fundamentals of Health Impact Assessment. (4)** Seminar, four hours. Provides students with sound understanding of health impact assessment (HIA) practice, its rationale and underlying principles, and opportunities to develop and apply HIA skills in work with public agencies and community-based organizations. Focus on problem solving around case-study HIAs and student experiences working on HIA-related projects. S/U or letter grading.

**216. Planetary Health: Consequences of Environmental Change for Human Health. (4)** Seminar, three hours. Planetary health is emerging interdisciplinary field that explores connections between environmental change and public health. Human-caused impacts on natural systems that have subsequent effects on human health include changes in land use, food systems, biodiversity, air pollution, and water availability. Our ability to understand planetary health requires synthesizing information from diverse academic disciplines across spatial and temporal scales, including atmospheric and climate science, ecology, epidemiology, and policy. Students from environmental health sciences and related fields learn how to interpret studies from scientific literature that discuss various aspects of planetary health, from drivers of environmental change to human health outcomes, integrate information across multiple scientific fields, and communicate planetary health research through oral presentation and written report. S/U or letter grading.

**M217. Graduate Seminar in Environmental Economics and Policy. (4)** (Same as Public Policy M217.) Seminar, four hours. Preparation: undergraduate-level statistics, basic undergraduate microeconomics. Introduction to applied scholarship in environmental economics and policy. Enables students to become more proficient consumers and producers of social science research that explores questions of environmental policy and sustainability broadly construed. Topics include health and economic impacts of climate change, adaptation to climate change, efficient and equitable design of environmental policies (e.g., cap and trade, carbon taxes). Developmental of detailed empirical research proposal and short presentation. Letter grading.

**218. Science Communication: Art and Practice of Science Storytelling. (4)** Lecture, three hours. Students from environmental health sciences focus on communicating with diverse audiences through visual communication. Study of science of science communication and importance of narrative and storytelling to producing engaging science communication. Applying these skills to their own research topics and interests, students develop two pieces of science communication, video and photo/infographic project. Through learning fundamentals of good public communication, students also advance their peer communication. S/U or letter grading.

**219. Environmental Health Disparities. (4)** Seminar, three hours. Designed for advanced graduate students who have completed foundational coursework in environmental health sciences. Exploration of disproportionate health burden experienced by low income communities and communities of color in U.S. due to environmental hazards. Study of social, economic, and political forces that create inequitable burdens of environmental pollution. Covers theoretical frameworks and analytic tools for understanding cumulative impacts of environmental and social inequalities on health. Case studies, research, and policy debates used to explore challenges and opportunities for addressing environmental racism and advancing environmental justice. S/U or letter grading.

**220. Overview of Environmental Public Health Microbiology. (2)** Lecture, two hours. Preparation: one course in biology. Introduction to environmental public health microbiology. Focus on human-disease-causing organisms. Covers bacteria, viruses, fungi, protozoa or protists, prions, and algae. Consideration of infectious diseases and of toxins produced by these microbes. Addresses how infectious agents interact with human immune system. Overview of this wide variety of microbial topics. S/U or letter grading.

**221. Climate Change, Equity, and Health. (4)** Lecture, two hours; discussion, two hours. Basic foundation in physical mechanisms of, responses to, and health implications of human-induced climate change. Exploration of variety of epidemiologic, risk assessment, and statistical methods used to understand impacts of climate change on health across diverse demographic groups; including efforts to estimate current and future global burden of disease due to climate change, as well as avoidable and attributable risk. Elaboration of public health implications, positive and negative, of efforts to mitigate and adapt to climate change, including discussions of ethical, political, and economic aspects of these efforts. Emphasis on how adverse effects of climate change are borne disproportionately by vulnerable people and groups. Students are responsible for leading class discussions and presenting poster on their choice of topic related to climate change and health. S/U or letter grading.

**C225. Atmospheric Transport and Transformations of Airborne Chemicals. (4)** Lecture, four hours. Preparation: one year of calculus, one course each in physics, organic chemistry, and physical chemistry. Designed for science, engineering, and public health students. Role of regional or long-range transport, and atmospheric lifetimes and fates of airborne chemicals in phenomena such as photochemical smog, acid deposition, stratospheric ozone depletion, accumulation of greenhouse gases, and regional and global distribution of volatile toxic compounds. Concurrently scheduled with course C125. S/U or letter grading.

**230A-230B-230C. Interdisciplinary Occupational Health Practice. (2-2-2)** Seminar, one hour; fieldwork, one hour. Multidisciplinary nature of occupational health practice featured and explored in these varied-activity courses, including material related to recognition, prevention, surveillance, and management of work-related health problems that occupational health and safety researchers and professionals encounter in various work environments. Lectures, seminars, field exercises, workshops, clinical case conferences, and group assignments combined to help students develop skills necessary to integrate and communicate relevant approaches to occupational hazard detection and control, work-related injury and illness surveillance, and disease and disability prevention from different disciplines in field of occupational health and safety. S/U grading.

**C235. Environmental Policy for Science and Engineering. (4)** Lecture, four hours. Limited to senior undergraduate and graduate students. Examination of theoretical underpinnings of several major types of regulatory policy, as well as practical issues involved in implementing and enforcing each. Exploration of selection and impact of regulatory forms from variety of disciplines and viewpoints. Focus on traditional command and control regulation (including self-executing performance standards and permitting), market-based regulation (such as emissions trading), remediation, and emerging regulatory approaches such as management-based regulation and alternatives assessment. Issues of compliance and enforcement. Concurrently scheduled with course C135. Letter grading.

**C240. Fundamentals of Toxicology. (4)** Lecture, four hours. Preparation: one course each in biology, organic chemistry, and biochemistry. Essential aspects of toxicology, with emphasis on human species. Absorption, distribution, excretion, biotransformation, as well as basic toxicologic processes and organ systems. Concurrently scheduled with course C140. Letter grading.

**M241. Advanced Concepts in Gene-Environment Interactions. (4)** (Same as Molecular Toxicology M247.) Lecture, three hours; discussion, one hour. Comprehensive and practical examination of emerging science of gene-environment interaction. Discussion of primary components of field, including role of metabolic pathways in modifying environmental responses and importance of environmental influences in human disease. Exploration of selected hot topics in field, such as importance of epigenetics and of microbiome. S/U or letter grading.

**C252D. Properties and Measurement of Airborne Particles. (4)** Lecture, four hours. Preparation: one year each of chemistry, physics, and calculus. Basic theory and application of aerosol science to environmental health, including properties, behavior, sampling, and measurement of aerosols and quantitative problems. Concurrently scheduled with course C152D. S/U or letter grading.

**252E. Identification and Measurement of Gases and Vapors. (4)** Lecture, three hours; discussion, one hour; outside study, two hours. Preparation: one year each of chemistry, physics, and calculus. Theoretical and practical aspects of industrial hygiene sampling and measurement of gases and vapors. Letter grading.

**252F. Industrial Hygiene Measurements Laboratory. (3)** Laboratory, three hours. Corequisites: courses C252D, 252E. Limited to industrial hygiene majors. Laboratory methods for sampling, measurement, and analysis of gases, vapors, and aerosols found in occupational environment. S/U or letter grading.

**252G. Industrial and Environmental Hygiene Assessment. (4)** Lecture, one hour; discussion, two hours; laboratory, two hours; outside study, four hours. Requisites: courses C200A, C200B, C252D, 252E, 252F. Environmental and industrial hygiene sampling strategies and assessment via walk-through surveys, lectures, group discussion, actual field measurements, laboratory calibrations, and analyses and reports, with emphasis on chemical, physical, and ergonomic hazards. Letter grading.

**253. Physical Agents in Work Environment. (2 to 4)** Lecture, two hours; laboratory, two hours. Preparation: one year of physics. Physics, measurement methods, health effects, and control methods for radiation (ionizing and nonionizing), noise, and thermal stress in workplace environment. S/U or letter grading.

**255. Control of Airborne Contaminants in Industry. (4)** Lecture, two hours; laboratory, two hours. Preparation: one year of physics. Requisite: course C252D. Principles and applications of control technology to industrial environments, including general and local exhaust ventilation, air cleaning equipment, and respiratory protection. S/U or letter grading.

**256. Biological and Health Surveillance Monitoring in Occupational/Environmental Health. (4)** Lecture, three hours; discussion, one hour; assignments, three hours. Principles and applications of biological monitoring and health surveillance to assess occupational and environmental exposures to organic and inorganic chemicals and physical factors. Letter grading.

**C257. Risk Assessment and Standard Setting. (4)** Seminar, four hours. Requisite: course C240. Designed to provide students with opportunity to review scientific basis for association of selected occupational and environmental exposures with disease. Special emphasis on critical evaluations of literature. Attention specifically to interface of science and regulatory standards. Concurrently scheduled with course C157. S/U or letter grading.

**258. Identification and Analysis of Hazardous Wastes. (4)** Lecture, three hours; discussion, one hour; laboratory, one hour; one field trip. Requisite: course 252E. Designed to define, identify, label, and quantify hazardous wastes and how workers should be protected. Provides critical understanding of all analytical aspects of hazardous wastes, health aspects, and regulation and practice of handling hazardous wastes. Letter grading.

**259A. Occupational Safety and Ergonomics. (4)** Lecture, four hours. Overview of most frequent and severe occupational injuries and illnesses, their distribution, causes, analysis methods, and control approaches, including low back pain, falls, machine exposures, upper extremity musculoskeletal disorders, fleet safety, and selected ergonomics topics. Letter grading.

**259B. Workplace Safety. (2)** Lecture, two hours. Introduction to broad range of topics in workplace safety through lectures on safety hazards, their classification, metrics, control philosophy, and control methods. Specific topics include traditional safety rubrics, such as fall hazards, machine safety, and fire hazards. Introduction to concepts of safety culture

and philosophy. Review and presentation of peer-reviewed articles on topics relevant to course material. Letter grading.

**M260. Occupational Epidemiology. (4)** (Same as Epidemiology M261.) Lecture, three hours. Requisites: Epidemiology 100; for Epidemiology majors, Epidemiology 200A, 200B, 200C. Methodological considerations, approaches, and limitations in epidemiological studies of occupational groups and environments. S/U or letter grading.

**261. Chemical Behavior of Aquatic Systems. (4)** Lecture, three hours. Requisites: courses C200A, C200B, Chemistry 20A, 20B, Mathematics 3A. Chemistry of ocean waters, rivers, groundwaters, and water treatment systems. Topics include thermodynamics of natural waters, acids and bases, carbon dioxide cycle, solubility reactions, oxidation and reduction, plus applied problems. Letter grading.

**C264. Fate and Transport of Organic Chemicals in Aquatic Environment. (4)** Lecture, four hours. Preparation: bachelor's degree in science, engineering, geophysics, chemistry, biology, or public health. Evaluation of how and where and in what form and concentration organic pollutants are distributed in aquatic environments. Study of mass transport mechanisms moving organic chemicals between phases, biological degradation and accumulation, and chemical reactions. Effect of humic substances on these processes. Concurrently scheduled with course C164. S/U or letter grading.

**M270. Work and Health. (4)** (Same as Community Health Sciences M278.) Lecture, three hours; practicum, one hour. Recommended preparation: graduate-level methods/statistics course, basic epidemiology. Designed for graduate students. Exploration of impact of work on physical and psychological health in context of newly emerging discipline. Focus on psychosocial models, measurement (including hands-on experience), contextual factors (gender, ethnicity, social class), and how work stressors can be ameliorated. S/U or letter grading.

**280. Nanomaterial-Related Emerging Technologies: Exposure and Health Effects. (4)** Seminar, three hours; activity, one hour. Students gain understanding of exposure and health effects of nanomaterials and related technologies, and of approaches to control exposure risks to workers and public. Students develop foundation for advanced studies in topics regarding nanomaterial-related emerging technologies. Topics include nano- and advanced materials and their developments; electronic products containing toxic substances and nanomaterials; nanotechnology-enabled products, their liability and regulatory compliance; exposure issues related to these materials and products throughout life cycle, including occupational and environmental perspectives; and biological mechanisms in humans from exposure intakes to post-exposure effects. S/U or letter grading.

**296A-296N. Research Topics in Environmental Health Sciences. (2 each)** Seminar, two hours. Advanced study and analysis of current topics in environmental health sciences. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading. **296A.** Psychosocial Factors and Occupational Health. **296B.** Teratogenesis. **296C.** Social Inequality and Environment. **296G.** Advances in Aerosol Technology. **296H.** Occupational and Environmental Exposure Assessment. **296I.** Industrial and Environmental Hygiene. **296J.** Work, Fertility, and Family. **296K.** Aquatic Chemistry. **296L.** Water Science and Health. **296M.** Experimental and Modeling Studies of Atmospheric Pollution. **296N.** Genetic Toxicology. **296O.** Built Environment and Health. **296P.** Global Environmental Change and Health. **296Q.** Occupational and Environmental Exposure Assessment, Industrial Hygiene, and Advances in Emerging Technology.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Field Studies in Environmental Health Sciences. (4)** Fieldwork, to be arranged. Field observation and studies in selected community environmental health organizations. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward MS minimum course requirement; 4 units may be applied toward 62-unit minimum total required for MPH degree. Letter grading.

**401. Environmental Measurements. (4)** Lecture, two hours; laboratory, four hours. Requisites: courses C200A, C200B, Chemistry 20A, 30AL. Instrumental methods for laboratory and field applications to assess quantity of environmental pollutants in air, food, and water, and to assess degree of exposure to such factors as noise and radiation. Letter grading.

**410A. Instrumental Methods in Environmental Sciences. (4)** Lecture, four hours; discussion, two hours; other, two hours. Preparation: one year each of physics, chemistry, and biology. Theory and principles of instrumental methods through lectures and group discussions. Letter grading.

**410B. Instrumental Methods Laboratory in Environmental Health Sciences. (4)** Lecture, one hour; discussion, one hour; laboratory, four hours; other, two hours. Preparation: one year each of physics, chemistry, and mathematics. Requisites: courses C200A, C200B. Laboratory techniques and instrumentation used in preparation and analysis of biological, environmental, and occupational samples. Letter grading.

**411. Environmental Health Sciences Seminar. (2)** Seminar, two hours. Required of graduate environmental health sciences students for one term each year. Current topics in environmental health in science, policy, and leadership. Speakers who are leading thinkers at interface of health and environment address important subjects of environmental health. May be repeated for credit. S/U grading.

**414A. Research Methods and Effective Communication in Environmental Health Sciences. (2)** Lecture, two hours. Prepares doctoral students in environmental health sciences and related fields for skills needed to undertake dissertation. Skills including performing literature searches, designing research study, proposing specific aims, forming testable hypotheses, completing Institutional Review Board (IRB) application, choosing data collection methods, data management, analysis, and interpretation; and writing research proposal. Students complete pilot research proposal for submission for funding. S/U or letter grading.

**414B. Research Methods and Effective Communication in Environmental Health Sciences. (2)** Lecture, two hours. Prepares doctoral students in environmental health sciences and related fields for skills needed to undertake dissertation. Skills including performing literature searches, designing research study, proposing specific aims, forming testable hypotheses, completing Institutional Review Board (IRB) application, choosing data collection methods, data management, analysis, and interpretation; and writing scientific paper and presenting research results. Students complete manuscript for submission to peer-reviewed journal. S/U or letter grading.

**450. Case Studies in Regulatory Decision-Making: How Government Agencies Are Influenced to Delay Abatement of Local Health Threats. (2)** Seminar, two hours. Requisites: course C200A or Public Health 200A or equivalent. Examination of process in which regulatory decisions are made. Review of several case studies in which industrial operations resulted in discharge of toxic chemicals to air, soils, or surface waters, and subsequently threatened health of adjoining community; this is common scenario for which California's health-protective regulatory process was designed. Through review of response of state and local agencies in these cases, examination of how private interests can influence regulatory decisions, rendering process ineffective in abating health threats, especially in some of California's most vulnerable communities. As practitioners in public health, consideration of how framing of complex regulatory decision in public health terms can be vital to gaining support of policy-makers and public. S/U or letter grading.

**454. Health Hazards of Industrial Processes. (4)** Lecture, two hours; field trips, four hours. Requisite: course 255. Industrial processes and operations and occupational health hazards that arise from them. Letter grading.

**461. Water Quality and Health. (4)** Lecture, three hours; discussion, one hour. Requisites: courses C200A, C200B, 401. Introduction to water quality, with coverage of hydrology, water chemistry, and various chemical contaminants that may affect human health. Various treatment methods and health implications. S/U or letter grading.

**M471. Improving Worker Health: Social Movements, Policy Debates, and Public Health. (4)** (Same as Community Health Sciences CM470 and Urban Planning M470.) Lecture, three hours; fieldwork, two hours. Examination of intersection between work, health, and environment, analysis of social causes of health disparities, investigation of historical trends and social movements, interpretation of current policy debates, and development of innovative interventions. S/U or letter grading.

**495. Teacher Preparation in Environmental Health Sciences. (2)** Seminar, two hours. Preparation: 18 units of cognate courses in area of specialization. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Limited to graduate students. Individual guided studies under direct faculty supervision. Only 4 units may be applied toward MPH and MS minimum total course requirement. May be repeated for credit. S/U or letter grading.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. Limited to graduate students. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research. (2 to 10)** Tutorial, four hours. Only 4 units may be applied toward MPH and MS minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research. (2 to 10)** Tutorial, four hours. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

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## EPIDEMIOLOGY

*Jonathan and Karin Fielding School of Public Health*

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Los Angeles, CA 90095-1772

### Epidemiology

310-825-8579

Zuo-Feng Zhang, MD, PhD, *Chair*  
Matthew J. Mimiaga, PhD, *Vice Chair*  
Beate R. Ritz, MD, PhD, *Vice Chair*

## Faculty Roster

### Professors

Onyebuchi A. Arah, MD, PhD  
Timothy F. Brewer, MD  
Susan D. Cochran, MS, PhD  
Anne L. Coleman, MD, PhD (*Bradley R. Straatsma Endowed Professor of Ophthalmology*)  
Pamina M. Gorbach, MHS, DrPH  
Nina T. Harawa, MPH, PhD, *in Residence*  
S. Jody Heymann, MD, PhD

Robert J. Kim-Farley, MD, MPH, *in Residence*  
Niklas Krause, MD, MPH, PhD  
Sung-Jae Lee, PhD, *in Residence*  
Li Li, PhD, *in Residence*  
Otoniel M. Martinez-Maza, PhD  
Karin B. Michels, MPH, PhD, ScD  
Matthew J. Mimiaga, MPH, MA, ScD  
Jian Yu Rao, MD  
Anne W. Rimoin, PhD (*Gordon-Levin Endowed Professor of Infectious Diseases and Public Health*)  
Beate R. Ritz, MD, PhD  
Teresa E. Seeman, PhD  
Ondine S. von Ehrenstein, MSc, MPH, PhD  
Zuo-Feng Zhang, MD, PhD

### Professors Emeriti

Lawrence R. Ash, PhD  
Roger Detels, MD, MS  
Ralph R. Frerichs, DVM, DrPH  
Sander Greenland, DrPH, MA, MS  
Leeka I. Kheifets, MH, PhD  
Frank J. Sorvillo, MPH, PhD

### Associate Professors

Liwei Chen, MD, MPH, PhD  
Elizabeth Rose Mayeda, MPH, PhD  
Dallas T. Swendeman, PhD, *in Residence*

### Assistant Professors

Jonathan P. Jacobs, MD, PhD, *in Residence*  
Roch A. Nianogo, MD, MPH, PhD  
Akihiro Nishi, MD, DrPH  
Marissa J. Seamans, PhD

### Adjunct Professors

Najib Aziz, MD  
Julia N. Bailey, PhD  
Brian D. Bradbury, MA, DSc  
Catherine L. Carpenter, PhD  
John D. Clemens, MD  
Mia Hashibe, PhD  
Marjan Javanbakht, PhD  
Kamyar Kalantar-Zadeh, MD, PhD  
Peter Katona, MD  
Peter R. Kerndt, MD, MPH  
Tony Y. Kuo, MD  
Vontanak Saphon, PhD  
Paul A. Simon, MD, MPH  
Lisa V. Smith, MS, DrPH  
Noel S. Weiss, MD, DrPH  
Nathan D. Wong, MPH, PhD  
Zunyou Wu, PhD

### Adjunct Associate Professors

Julia E. Heck, PhD  
Rulin C. Hechter, PhD  
Christie Y. Jeon, PhD  
Dvora L. Joseph Davey, MPH, PhD  
Mark A. Malek, PhD  
Annette K. Regan, MPH, MSc, PhD  
Shira C. Shafir, MPH, PhD  
Amy R. Wohl, PhD

### Adjunct Assistant Professors

Emily S. Beeler, PhD  
Alexandra M.L. Binder, MS, ScD  
Maral E. DerSarkissian, PhD  
Paul J. Dlugniewski, MPH, PhD  
Naomi H. Greene, PhD  
Nicole A. Hoff, MPH, PhD  
Paul T. Hsu, MPH, PhD



Elani Streja, PhD  
 Madhuri Sudan, PhD  
 Sheena G. Sullivan, MD, PhD  
 Ximena P. Vergara, PhD  
 Anjie Zhen, PhD

## Overview

Epidemiology is the study of the distribution and determinants of disease in human populations. Epidemiologists study variations of disease incidence in relation to factors such as age, sex, race, environmental factors, lifestyle, demographic variables, occupational and social characteristics, place of residence, susceptibility, exposure to specific agents, or other pertinent characteristics. Also of concern are the temporal and special distribution of disease, examination of trends, and intervals between exposure to causative factors and onset of disease. The scope of the field extends from study of the patterns of disease to the causes of disease with the goal of the control or prevention of disease. What distinguishes epidemiology from other clinical sciences is the focus on health problems in populations rather than in individuals, with the focus on public health.

Epidemiology is a young field with constantly expanding boundaries. The range of activities includes identifying determinants of population health, investigation and control of disease outbreaks, study of environmental and industrial hazards, evaluation of preventive or curative programs or treatments, and evaluation of the effectiveness and efficiency of intervention or control strategies. Many tools of epidemiology are shared with other fields such as microbiology, immunology, medicine, statistics, demography, and medical geography.

There is a growing core of epidemiologic methodology that includes the principles of study design and conduct, and statistical methods. Epidemiologic tools have become relevant for many other fields that study groups of people, e.g., genetics and epigenetics, global health, pharmacology, medicine, and many others.

Epidemiologists work in many settings, including academia, international health agencies, state and local health departments, federal government agencies and health programs, health maintenance organizations, and numerous research projects privately and publicly sponsored.

## Mission

The objectives of the Department of Epidemiology fall into three broad categories—research, teaching, and community service.

## Graduate Major

### Epidemiology MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate

Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Epidemiology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Principles of Epidemiology. (4)** Lecture, four hours; discussion, two hours. Preparation: one full biological sciences course. Limited to nonmajors. Not open for credit to students with credit for course 120. Introductory course to provide qualified undergraduate students with broad and comprehensive overview of concepts of epidemiology including evaluating public health problems in terms of magnitude, person, time and place; critiquing epidemiologic studies; identifying and accessing key sources of data for epidemiologic assessment; using epidemiologic methods and calculating basic epidemiology measures for operational purposes; and communicating basic principles of epidemiology such as definitions of populations, sources of bias, causation for morbidity and mortality, risk and protective factors, and basics of study design. Letter grading.

**120. Epidemiology in Public Health. (5)** Lecture, four hours; discussion, two hours. Prerequisite: Public Health 50B. Limited to Public Health majors. Not open for credit to students with credit for course 100. Introduction to main principles of epidemiology, including foundational concepts and terminology, and exploration of key historical developments of field. Survey of major study designs and statistical techniques with emphasis on application of epidemiological concepts in public health. Letter grading.

**CM175. Terrorism, Counterterrorism, and Weapons of Mass Destruction: Practical Approach. (5)** (Same as Honors Collegium M175.) Seminar, three hours. Terrorism, its origins, and ways of addressing terrorism at local, national, and global levels. Guest speakers from variety of UCLA departments and from Los Angeles. Concurrently scheduled with course C275. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**197. Individual Studies in Epidemiology. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Methods I: Basic Concepts and Study Designs. (6)** Lecture, three hours; discussion, one hour. Introduction of basic concepts and methods in epidemiology with emphasis on measuring disease occurrence, study design, and assessing causal relationships. Letter grading.

**200B. Methods II: Prediction and Validity. (6)** Lecture, six hours; discussion, four hours. Enforced requisites: course 200A and Biostatistics 100A, or Public Health 200A and 200B. Corequisite: Biostatistics 100B. Introduction to basic concepts, principles, and methods of chronic and infectious disease epidemiology. Letter grading.

**200C. Methods III: Analysis. (6)** Lecture, four hours; laboratory, two hours. Enforced requisites: courses 200A, 200B. Introduction to basic concepts, principles, and methods of epidemiologic data analysis. Letter grading.

**M203. Topics in Theoretical Epidemiology. (4)** (Formerly numbered 203.) (Same as Health Policy M201.) Lecture, three hours. Emphasis on methods that help to understand how systems operate and how to intervene on them. Exploration of how to characterize human-centered problems that arise, and how to handle complexity as core design and development challenge. Examination of different traditions of studying and modeling (representing) systems, both conceptually and quantitatively, to address questions that arise in public health. Consideration of utility and limitations of these methods for providing insight to stakeholders who are addressing population health problem. S/U or letter grading.

**M204. Logic, Causation, and Probability. (4)** (Same as Statistics M243.) Lecture, four hours. Preparation: two terms of statistics or probability and statistics. Recommended prerequisite: course 200C. Principles of deductive logic and causal logic using counterfactuals. Principles of probability logic and probabilistic induction. Causal probability logic using directed acyclic graphs. S/U or letter grading.

**205. Methods for Analyzing Non-Randomized and Quasi-Experimental Studies. (4)** Lecture, three hours. Requisites: course 200C or 401, or Biostatistics 200A or 200B or 406, and course M403 or 407A or Biostatistics 203A. Provides students with necessary tools to evaluate effectiveness or impact of public health interventions. Study designs include non-randomized, quasi-experiments, and natural experiments. Covers both theoretical concepts as well as practical tools that encompass methods borrowed from related fields including social epidemiology, health policy, econometrics, and evaluation research. These methods include instrumental variable, difference-in-difference, synthetic control, regression discontinuity, and propensity score matching. S/U or letter grading.

**206. Systems Science Modeling and Simulation in Epidemiology. (4)** Lecture, three hours. Requisites: course 200C or 401, or Biostatistics 200A or 200B or 406, and course M403 or 407A or Biostatistics 203A. Theoretical and practical introduction to modeling and simulation methods for conducting comparative, cost-effectiveness, and forecasting research. These methods include population-level (e.g., Markov state-transition models and system dynamics) and individual-level (e.g., microsimulation and agent-based modeling) simulations. These methods are employed in field sometimes referred to as systems epidemiology or computational epidemiology. Multidisciplinary fields that use tools and techniques from computer sciences, econometrics, operations research, engineering, and epidemiology to better understand disease mechanisms or evaluate intervention effectiveness. S/U or letter grading.

**207. Reproducibility in Epidemiologic Research. (4)** Lecture, three hours. Requisites: courses 200A, 401 (or Biostatistics 100B or 200A and 200B), M403. Introduction to concept of reproducibility in epidemiologic research. Students are exposed to tools for adopting practices to enhance reproducibility in their own research. Letter grading.

**M211. Statistical Methods for Epidemiology. (4)** (Same as Statistics M250.) Lecture, four hours. Preparation: two terms of statistics (such as Biostatistics 100A, 100B). Requisites: courses 200B, 200C. Concepts and methods tailored for analysis of epidemiologic data, with emphasis on tabular and graphical techniques. Expansion of topics introduced in courses 200B and 200C and introduction of new topics, including principles of epidemiologic analysis, trend analysis, smoothing and sensitivity analysis. S/U or letter grading.

**212. Statistical Modeling in Epidemiology. (4)** Lecture, four hours. Preparation: two terms of statistics (three terms recommended). Recommended: course M204 or M211. Principles of modeling, including meanings of models, a priori model specification, translation of models into explicit population assumptions, model selection, model diagnostics, hierarchical (multilevel) modeling. S/U or letter grading.

**215. Systematic Review and Meta-Analysis. (2)** Lecture, two hours. Requisites: course 100 or 200A, and Biostatistics 100A, or Public Health 200A and 200B. Offers theoretical and practical understanding of systematic reviews and meta-analysis of clinical trials and observational studies. Students learn how to conduct systematic literature search, assess quality of selected studies, identify sources of heterogeneity, conduct meta-analysis, and understand standards of reporting on meta-analyses. Offers practical training in meta-analyses and meta-regression using STATA software. Letter grading.

**M216. Applied Sampling. (4)** (Same as Statistics CM248.) Lecture, three hours; discussion, one hour. Designed for upper-division and graduate students in social or life sciences and those who plan to major in Statistics. Topics include methods of sampling from finite populations, sources of sampling and estimation bias, and methods of generating efficient and precise estimates of population characteristics. Practical applications of sampling methods via lectures and hands-on laboratory exercises. S/U or letter grading.

**217. Social Networks and Public Health. (4)** Lecture, four hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Principles of social network research, social network analysis, and social network intervention, especially in relation to public health and health behavior. Coding examples are provided in R (mainly R igraph and ggplot2 packages). Discussion of landmark social network papers relevant to public health. S/U or letter grading.

**M218. Questionnaire Design and Administration. (4)** (Same as Community Health Sciences M218.) Lecture, four hours. Requisites: courses 200B and 200C, or Community Health Sciences 211A and 211B. Design, testing, field use, and administration of data collection instruments, with particular emphasis on questionnaires. Letter grading.

**219. Strategies for Increasing Sensitivity and Validity of Epidemiologic Studies. (2)** Lecture, two hours. Requisite: course 100 or Public Health 200A. Discussion of strategies for increasing sensitivity and validity of epidemiologic studies. Covers issues that led to methodologic articles authored by instructor; nature of articles themselves; subsequent studies that have used suggested approaches; and any modification of methods that have been proposed. Students are expected to have basic training on epidemiological study designs and methods. S/U or letter grading.

**220. Principles of Infectious Disease Epidemiology. (4)** Lecture, three hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Ascertainment of infection, transmission, and epidemiological parameters rather than clinical and pathological aspects. Specific diseases discussed in depth to illustrate epidemiologic principles. S/U or letter grading.

**221. Emerging Infectious Diseases. (4)** Lecture, three hours. Requisite: course 220 or consent of instructor. Emerging infectious diseases (EIDs) are infections that have recently appeared within population or those whose incidence or geographic range is rapidly increasing or threatens to increase in future. Overview of important emerging and re-emerging infectious diseases globally. Addresses factors associated with disease emergence/re-emergence, research methods, preparedness, disease surveillance, outbreak investigation, and response to EIDs with global perspective. Letter grading.

**M226. Global Health Measures for Biological Emergencies. (4)** (Same as Ecology and Evolutionary Biology M226.) Lecture, four hours. Requisite: course 220. Mitigation of bioterrorism falls outside traditional public health programs and public health graduate education. Because of seriousness of such threats, it is important that individuals trained in public health understand problems and responses. Letter grading.

**227. AIDS: Major Public Health Challenge. (4)** Lecture, four hours. Requisites: courses 100 or 200A, and Biostatistics 100A, or Public Health 200A and 200B. Presentation of epidemiologic, biologic, psychological, and clinical characteristics of AIDS and HIV-1 infection. Discussion of policy implications and intervention strategies. S/U or letter grading.

**228. Biology of HIV. (4)** Lecture, three hours. Preparation: two biology courses. Requisites: course 100 and Biostatistics 100A, or Public Health 200A and 200B. Overview of virologic and immunologic aspects of HIV disease for epidemiology or other health disciplines. Brief discussion of clinical manifestations and biosafety in laboratory. Letter grading.

**230. Epidemiology of Sexually Transmitted Diseases. (4)** Lecture, four hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Sexually transmitted diseases; medical/biological aspects, epidemiology and control in developed and developing countries. S/U or letter grading.

**231. Principles of Control of Infectious Diseases. (4)** Lecture, three hours. Comprehensive study of tools for control of infectious diseases and application of these tools in public health programs to achieve epidemiologic impact on disease reduction, elimination, or eradication. S/U or letter grading.

**232. Methods in Research of Marginalized and Hidden Populations. (2)** Lecture, two hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Introduction to range of different methodologies used to collect data and conduct analysis on reproductive epidemiology topics, including methods that produce quantitative data and methods that produce qualitative data, with emphasis on use of methods appropriate for challenging and sensitive research topics such as sexual behavior, abortion use, and sexual abuse. Letter grading.

**240. Cardiovascular Epidemiology. (2)** Lecture, two hours. Topics include definition, pathogenesis, descriptive epidemiology, magnitude of risk factors, strategies for prevention, lipoprotein metabolism, and epidemiology of diabetes, hypertension, and chronic lung disease. Letter grading.

**241. Epidemiology of Obesity and Diabetes. (4)** Lecture, three hours. Requisite: course 100 or 200A or Public Health 200A. Overview of epidemiology of obesity and diabetes. Students are exposed to most important research in this area. Focus includes global and regional epidemic of obesity and diabetes, risk factors and complications, classifications and assessments, prevention and management, as well as methodological issues related to study design and measurements for conducting obesity and diabetes research in large populations. Encourages students' creative thinking and improves their skills for scientific writing and oral communications through individual and team assignments. S/U or letter grading.

**242. Cancer Epidemiology. (4)** Lecture, four hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Introduction to basic concepts of cancer and molecular and genetic epidemiology. Review of current epidemiologic research in cancer in recent

medical and epidemiological literature. Research proposal on cancer-related topic required. S/U or letter grading.

**243. Molecular Epidemiology of Cancer. (4)** Lecture, four hours. Requisite: course 242 or 295. Introduction to basic concepts and methodology of molecular epidemiology of cancer and review of current molecular epidemiologic research of cancer in recent medical and epidemiological literature. S/U or letter grading.

**244. Research Methods in Cancer Epidemiology. (2)** Lecture, two hours. Requisites: course 100 or 200A, and Biostatistics 100A, or Public Health 200A and 200B. Biologic, quantitative, philosophical, and administrative considerations in epidemiologic cancer research. Hypothesis specification and choice of study design. Uses of descriptive epidemiology, cohort studies, case control studies. Clustering, screening, and cancer control. Means of identifying subjects and controls. Design of instruments. Sources of bias and confounding. S/U or letter grading.

**245. Lifestyle Intervention for Noncommunicable Chronic Diseases. (2)** Lecture, two hours. Requisites: course 100, Public Health 200A, 200B. Designed to teach students how to apply principles of trial design and data analysis to lifestyle interventions for purposes of preventing onset and progression of diseases. Focus on noncommunicable chronic diseases (i.e., obesity, diabetes, hypertension, coronary heart disease, or cancer), but concepts and methods can be applied to acute and infectious diseases as well. S/U or letter grading.

**246. Epidemiology of Aging. (2)** Lecture, two hours. Epidemiologic methods of estimating present and future burdens of aging: morbidity, disability, and dependency. Epidemiology of major disabling conditions affecting elderly. Evaluation of possible intervention strategies. Methodologic issues in geriatric epidemiology. S/U or letter grading.

**247. Lifecourse Epidemiology. (4)** Lecture, three hours. Requisites: course 100 or 200A, and Biostatistics 100A, or Public Health 200A and 200B; and Biostatistics 100B, or equivalent, or consent of instructor. Introduction to concepts and methods for studying life-course determinants of health and disease. Consideration of how exposures at one stage of human lifespan influence health outcomes at multiple life stages. Analytical approaches to research on life-course determinants of health. S/U or letter grading.

**249. Genetic Epidemiology I. (4)** Lecture, two hours. Preparation: at least one course in epidemiology, biostatistics, and genetics. Basic concepts in emerging field of genetic epidemiology, with principal focus on genetic study of complex diseases, determining genetic contributions to disease, identifying genes, and characterizing their main effects and interactions with environmental factors. S/U or letter grading.

**M254. Nutritional Epidemiology I. (4)** (Same as Community Health Sciences M251.) Lecture, two hours; discussion/laboratory exercise, one hour. Preparation: introductory biostatistics and epidemiology courses. Review of all aspects of contemporary nutrition sciences that require application of epidemiologic principles and methods, ranging from food-borne outbreak investigation to evidence-based regulatory assessment of health claims for foods. Experience in actual world of collecting, analyzing, and interpreting data related to nutrition and health or disease outcomes. S/U or letter grading.

**260. Environmental Epidemiology. (2 or 4)** Lecture, three hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Epidemiologic methods applied to evaluation of human health consequences of environmental hazards. Topics include air pollution, pesticides, drinking water contaminants, use of GIS. Review of recently completed environmental studies published in peer-reviewed literature. S/U or letter grading.

**M261. Occupational Epidemiology. (4)** (Same as Environmental Health Sciences M260.) Lecture, three hours. Requisites for majors: courses 200A, 200B, 200C; for nonmajors: course 100. Methodological considerations, approaches, and limitations in epidemiological studies of occupational groups and environments. S/U or letter grading.

**265. Epidemiologic Methods in Occupational and Environmental Health. (4)** Lecture, three hours. Introduction to epidemiologic methods applied to evaluation of human health consequences of occupational and environmental hazards, including study design, exposure assessment, and statistical techniques commonly encountered in research focused on assessing adverse health effects resulting from occupational and environmental exposures. Topics include clusters, meta-analysis, risk assessment, and policy development. Illustrated by case studies, with focus on techniques to critically evaluate and interpret current literature. Letter grading.

**266. Global Health and Tropical Medicine. (4)** Lecture, four hours. Introduction to tropical diseases and global health. How humanitarian health issues, maternal-child health, research in tropics, World Health Organizations, and political/medical constraints all are related with respect to health on worldwide scale. Letter grading.

**267. Methodologic Issues in Reproductive Epidemiology. (2)** Seminar, two hours. General discussion of methodologic issues important to epidemiologic studies of reproductive outcomes, including fertility, low birth weight, prematurity, birth defects, pregnancy loss, and perinatal mortality. Approaches to study design and exposure assessment and identification of potential sources of bias illustrated through review of recent studies published in literature and with particular focus on occupational and environmental exposures and birth cohorts. S/U or letter grading.

**268. Introduction to Pharmacoepidemiology. (2)** Lecture, two hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Pharmacoepidemiology is application of epidemiologic knowledge, reasoning, and methods to study of effects and uses of drugs. Survey of contemporary roles of pharmacoepidemiology in drug development and public health, with historical background of its evolution and projections of future prospects. S/U or letter grading.

**269. Substance Use Epidemiology. (4)** Lecture, three hours. Requisites: course 200A, and Biostatistics 100A or 100B or equivalent. Introduction to epidemiology of substance use and substance use disorders within public health paradigm. Review of drug policy in U.S., description of occurrence of substance use and related problems, examination of intersection of substance use and mental health disorders, and examination of role of epidemiology in informing and evaluating interventions targeting substance use disorders, including health services and pharmacologic and non-pharmacologic treatments. S/U or letter grading.

**270. Behavioral Epidemiology. (4)** Lecture, four hours. Requisite: course 100, or 200A, or Public Health 200A and 200B. Introduction to range of different methodologies used to collect data and conduct analyses on behaviors studied in epidemiology research. How to collect, analyze, and interpret data on behaviors that can be associated with disease outcomes, including methods to collect survey data (i.e., design of questionnaires, interviewing techniques, use of technology to collect data) and methods to collect and analyze qualitative data (e.g., ethnographic interviews, focus groups, systematic observations). Overview information on epidemiology of key behavioral factors affecting human health, including sexual risk behaviors, substance use, physical activity, and healthcare utilization. S/U or letter grading.

**271. Psychiatric Epidemiology. (4)** Lecture, three hours. Requisites: Biostatistics 100B, Public Health 200A, 200B. Psychiatry epidemiology examines occurrence and distribution of mental health disorders and probable causes and factors that influence their manifestation, trajectory, and outcome. Provides students with knowledge and skills necessary to conceptualize mental health related research questions, properly assess mental health symptoms and diagnostic classifications in their research (e.g., prevalence, incidence, and outcome), and analyze data to advance field of psychiatric epidemiology and better understand how to establish mental health and substance use treatment guidelines. With respect to measurement, emphasis is given to issues of reliability and validity in studying such disorders—while considering factors

such as gender, sexuality, race/ethnicity, age, poverty, education, culture, social support, social capital, etc. S/U or letter grading.

**M272. Social Epidemiology. (4)** (Same as Community Health Sciences M272.) Lecture, two hours; discussion, one hour. Requisite: course 100 or Public Health 200A and 200B. Relationship between sociological, cultural, and psychosocial factors in etiology, occurrence, and distribution of morbidity and mortality. Emphasis on lifestyles and other socioenvironmental factors associated with general susceptibility to disease and subsequent mortality. Letter grading.

**M273. Responsible Conduct of Research in Global Health. (2)** (Same as Public Health M273.) Lecture, two hours. Requisite: Community Health Sciences 200. Introduction to fundamental principles of public health ethics, current ethical procedures, guidelines, and requirements, and ethical issues facing public health professionals working in developing countries. History of public health issues, unique ethical issues of research in developing countries, analysis of ethical implications of informed consent, responsibility to study community, mechanisms of study approval, role of funders, and role and responsibilities of review boards. S/U or letter grading.

**274. Advanced Epidemiologic Methods for Global Health. (2)** Lecture, two hours. Requisites: courses 200A, 200B, and Biostatistics 100B, or Public Health 200A and 200B. Study provides global health researchers and epidemiologists with methods that enable access to and utilization of existing data; new methods for collection of new data; and advanced methods for statistical analyses focusing on existing sources of data, surveys, data sharing, and advanced statistical and epidemiologic methods in global health. S/U or letter grading.

**C275. Terrorism, Counterterrorism, and Weapons of Mass Destruction: Practical Approach. (5)** Seminar, three hours. Terrorism, its origins, and ways of addressing terrorism at local, national, and global levels. Guest speakers from variety of UCLA departments and from Los Angeles. Concurrently scheduled with course CM175. S/U or letter grading.

**291. Seminar: Special Topics in Epidemiology. (2)** Seminar, two hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Review of current epidemiologic research contained in recent medical literature. May be repeated for credit. S/U or letter grading.

**292. Advanced Seminar: Epidemiology. (2)** Seminar, two hours. Requisites: courses 200A, 200B, 200C. Current research in epidemiology. May be repeated for credit. S/U grading.

**293. International HIV/AIDS Seminar. (2)** Seminar, two hours. Ongoing discussion of worldwide pandemic of HIV/AIDS, with emphasis on problems of surveillance, reporting, and intervention. Discussion of recent literature. Presentations by fellows from other countries. S/U grading.

**294. Epidemiology and Policy of Occupational and Environmental Health Issues. (2)** Seminar, two hours. Requisites: courses 200A, 200B, and 200C (or 100) and/or 260. Introduction to demands that go beyond pure science, with focus on issues such as risk communication, potential influence (and ethics) of oversight panels and external review groups on presenting results and conclusions, and interest of government agencies. S/U or letter grading.

**295. Seminar: Epidemiology—Cancer. (2)** Seminar, two hours. Requisite: course 100 or 200A, or Public Health 200A and 200B. Introduction of basic concepts of cancer epidemiology and review of current epidemiological research in cancer in recent medical and epidemiological literature. May be repeated for credit. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Field Studies in Epidemiology. (4)** Fieldwork, to be arranged. Field observation and studies in selected community organizations for health promotion or medical care. Students must file field placement and program training documentation on form available from Student Affairs Office. May not be applied toward MS minimum course requirement; 4 units may be applied toward 44-unit minimum total required for MPH degree. Letter grading.

**401. Applied Epidemiologic Analysis. (4)** Lecture, three hours. Requisites: course M403, Biostatistics 100B, Public Health 200A, 200B. Combines lectures, discussions, and laboratory assignments to offer conceptual understanding of analytic methods in epidemiology. Students develop basic proficiency in methods by conducting statistical analysis using epidemiologic data, with expectation that students pursue courses 200A and 200B in second year and develop expertise in methods they will use for their own research. S/U or letter grading.

**M403. Computer Management and Analysis of Health Data Using SAS. (4)** (Same as Biostatistics M403B.) Lecture, two hours; laboratory, two hours. Introduction to practical issues in management and analysis of health data using SAS programming language. Cross-sectional and longitudinal population-based data sets to be used throughout to illustrate principles of data management and analysis for addressing biomedical and health-related hypotheses. Letter grading.

**404. Advanced SAS Techniques for Management and Analysis of Epidemiologic Data. (2)** Lecture, three hours. Requisite: course M403 or 410. Hands-on experience with SAS 9.2/9.3, with focus on using SAS data and PROC steps efficiently to manage, clean, analyze, and tabulate epidemiologic data from data collection systems. Common issues and solutions in data management, including lack of documentation, data definitions, unique subject identifiers, and nonstandard data formats. S/U or letter grading.

**407. Epidemiologic Research Using R. (4)** (Formerly numbered 407A.) Lecture, three hours. Requisite: course 100 or 200A, or Public Health 200A and 200B, or consent of instructor. Designed to broadly offer R coding experience, with emphasis on data management, visualization, and analysis. Topics include data manipulation, causal inference, generation of publication-suitable figures and tables, and construction of functions. S/U or letter grading.

**407B. Applied Epidemiologic Research Using R. (2)** Lecture, two hours. Requisite: course 407A. Designed to broadly offer R coding experience, with emphasis on data management, data description using tables and figures, and data analysis. Introduction of various concepts with data to facility interactive learning each week through guided R programming tutorials. Weekly R data analysis, in which students present their research and data analysis progress using real data. Each student performs secondary data analysis and prepares abstract, brief introduction, methods, and results part of submittable brief communication paper. S/U or letter grading.

**410. Introduction to Python for Epidemiologists. (2)** Lecture, two hours. Requisites: Biostatistics 100A, Public Health 200A. Introduction to use of Python programming language for epidemiologic analyses of big data. Topics covered include supervised and unsupervised learning methods, feature engineering, and model evaluation approaches using both quantitative and text-based health data. S/U or letter grading.

**412. Public Health Surveillance. (2)** Lecture, two hours. Requisites: course 100 or 200A, and Biostatistics 100A, or Public Health 200A and 200B. Overview of public health surveillance methodology, including (1) design, implementation, and evaluation of surveillance systems, (2) analysis and interpretation of surveillance data, and (3) application of surveillance methods to specific health-related outcomes. S/U or letter grading.

**413. Methods of Scientific Communication. (2)** Lecture, two hours. Requisite: course 100 or 200A. Principles of scientific writing and communication. Approaches to developing effective written, oral, and visual presentations of epidemiologic research findings.

Communication issues arising in conduct of research, including informed consent process. S/U or letter grading.

**420. Field Trials of Health Interventions in Low-Resource Settings. (4)** Lecture, four hours. Prerequisite: course 100 or 200A, or Public Health 200A and 200B. Introduction to practical concepts and issues in conducting epidemiologic field research in developing countries, including formulating research questions, study site selection, ethical considerations, and logistics of data and specimen collection. S/U or letter grading.

**495. Teacher Preparation in Epidemiology. (2)** Seminar, two hours. Preparation: 18 units of cognate courses in area of specialization. May not be applied toward master's degree minimum total course requirement. May be repeated for credit. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than 8 units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Limited to graduate students. Individual guided studies under direct faculty supervision. Only 4 units may be applied toward MPH and MS minimum total course requirement. May be repeated for credit. S/U or letter grading.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research. (2 to 8)** Tutorial, to be arranged. Only 4 units may be applied toward MPH and MS minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research. (2 to 12)** Tutorial, to be arranged. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## ETHNOMUSICOLOGY

*Herb Alpert School of Music*

2520 Schoenberg Music Building  
Box 951657  
Los Angeles, CA 90095-1657

**Ethnomusicology**

310-825-8381

Roger W.H. Savage, DPhil, *Chair*

## Faculty Roster

### Professors

Cheryl L. Keyes, PhD  
Mark L. Kligman, PhD (*Mickey Katz Endowed Professor of Jewish Music*)  
Steven J. Loza, PhD  
Anna F. Morcom, PhD (*Mohindar Brar Sambhi Endowed Professor of Indian Music*)  
Helen M. Rees, PhD  
Roger W.H. Savage, DPhil  
Timothy D. Taylor, PhD

### Professors Emeriti

Tara C. Browner, PhD  
Jacqueline Cogdell DjeDje, PhD  
Charlotte A. Heth, PhD

William R. Hutchinson, PhD  
Daniel M. Neuman, PhD (*Mohindar Brar Sambhi Endowed Professor Emeritus of Indian Music*)

James W. Newton, Jr.  
James W. Porter, MA  
Timothy Rice, PhD  
Hiromi Lorraine Sakata, PhD  
Anthony Seeger, PhD

### Associate Professors

Münir N. Beken, PhD  
Katherine In-Young Lee, PhD

### Lecturers

Francis Kofi Akotuah  
Marc T. Bolin, PhD  
David M. Bragger  
Jésus A. Guzmán  
Pejman Hadadi, BA  
Gamin Kang, DMA  
Behzad Nadimi  
Soheil Nadimi, BA  
Rahul D. Neuman  
Robert F. Reigle, PhD  
Diane L. White-Clayton, PhD

### Adjunct Professors

Amy R. Catlin-Jairazbhoy, PhD  
Abhiman Kaushal  
Chi Li, BA  
Maureen A. Russell, MLS, MA, CPhil

### Adjunct Associate Professor

I Nyoman Wenten, PhD

### Adjunct Assistant Professor

Supeena Insee Adler, PhD

## Overview

Ethnomusicology involves the study of all kinds of music from all over the world, using a variety of disciplinary perspectives. The Department of Ethnomusicology, the largest and first of its kind in a U.S. university, offers courses that cover the music of virtually every region of the world and of many ethnic groups in the U.S., as well as courses on popular music and film music. Most courses combine an interest in music as an art form with questions about how musical art and practice relate to other aspects of culture, society, politics, and economics. Courses are also given on the philosophy and aesthetics of music. In addition to lecture courses, the department offers performance ensemble courses in several world and American music traditions. At the undergraduate level, most of the performance courses are open to nonmajors, and many academic courses target nonmajors; prior knowledge of music is not expected or required. The Ethnomusicology Department is aligned with the departments of Music and Musicology and aspires to promote productive collaboration between performance and scholarship, a cross-cultural global understanding of the art of music, and preparatory training for a broad range of careers in music after students graduate.

## Undergraduate Major

### Ethnomusicology BA

The undergraduate major in Ethnomusicology emphasizes general world music, performance/composition, public ethnomusicology, and scholarly research. Admission requires an audition/interview. The major provides students with a wide-ranging liberal arts education in music. At its core, this includes (1) comprehensive knowledge of music cultures of the world; (2) understanding of the interrelationship of music, society, and culture; (3) grounding in the basics of Western music theory and musicianship; and (4) the experience of playing in one or several musical ensembles from various traditions around the world.

Beyond the core and emphasis requirements, students in the world music concentration may, through elective courses, prepare for a variety of career goals, including the study of ethnomusicology in graduate school, composing and performing music, working in the music industry, serving society in the nonprofit sector, or becoming a K through 12 music teacher.

### Capstone Major

The Ethnomusicology major is a designated capstone major. The capstone project is individualized to each student and requires a creative process either through music performance/composition, a research project, or an internship with a self-reflective journal detailing the process. Through that process, students are expected to demonstrate a broad knowledge base and competency in performance, writing, and/or composition and ability to apply knowledge and experience to the specific requirements of the capstone; conceive and successfully complete a project that is expressive of their specific interests and acquired expertise; and display, through written documentation or live presentation, the requisite communication and, in some cases, teamwork required by work in this field.

### Learning Outcomes

The Ethnomusicology major has the following learning outcomes:

- Demonstrated broad knowledge and competency in performance, writing, and/or composition
- Demonstrated ability to apply knowledge and experience to capstone requirements
- Conception and successful completion of a project that is individually expressive of the student's specific interests and acquired expertise
- Written document or live presentation that displays requisite communication and teamwork required by work in the field

### Entry to the Major

#### Admission

Applicants are reviewed individually, based on a questionnaire, grade-point average, two letters of recommendation, test scores, a personal statement of purpose, and an on-campus



interview/audition. Applicants who are unable to travel to UCLA have the option of a Skype interview/audition.

## Requirements

### Preparation for the Major

*Required:* Ethnomusicology M6A, M6B, M6C, with grades of C– or better; 20A, 20B, 20C, with grades of C or better; Music 20A, 20B, 20C, with grades of C or better; and 12 units of ethnomusicology world music performance organizations (courses 91A through 91Z), private instruction in music (course 92), and/or world music specializations (courses 68A through 68Z).

### The Major

*Required:* Ethnomusicology 175 or 181, 183; 12 units from courses 161A through 161Z, 162, and/or 168A through 168Z; a minimum of eight upper-division ethnomusicology courses (32 to 36 units); and a capstone project in either (1) performance/composition, (2) public ethnomusicology, (3) scholarly research, or (4) other potential emphasis concepts in consultation with a faculty adviser.

*Performance/Composition Capstone:* Students must fulfill the capstone final project requirement (4 units) through a public recital (performance). Students must enroll in Ethnomusicology 199 (2 units) and pass a recital permission jury. Instrumental and vocal performers must present a portion of their recital performance, and composers must present excerpts from their recital scores in front of two faculty members. Students also enroll in Ethnomusicology 186 (2 units) during the term in which they perform their recital or their composition(s) are performed.

*Public Ethnomusicology Capstone:* Students must fulfill the capstone internship requirement, which consists of 8 units of Ethnomusicology 195B, in an institution approved by the faculty sponsor. Students must write a final research paper (at least 10 pages) at the completion of each internship.

*Scholarly Research Capstone:* Students must write a capstone thesis (25 to 30 pages) and enroll in Ethnomusicology 199 (2 units minimum) for at least one term while writing the thesis.

*Independent Capstone:* In consultation with a faculty adviser, students can propose capstone projects in other potential emphasis concepts such as technologies, film scoring, interactive arts, dance, and more. Students must enroll in Ethnomusicology 199 (2 units minimum).

## Policies

### Preparation for the Major

All entering first years are required to take the Music Theory Assessment Examination either during New Student Sessions or during zero week of fall quarter. The examination score is used to determine eligibility and placement in first-year music core courses (Ethnomusicology M6A, M6B, M6C, and Music 20A, 20B, 20C). Examination results may require enrollment in Music 3 as a requisite to both Ethnomusicology M6A and Music 20A. Entering transfer students with fewer than 15 units of

prior music theory must take the Music Theory Assessment Examination.

## Undergraduate Minors

### Ethnomusicology Minor

The Ethnomusicology minor is designed for students who wish to augment their major program with a group of related courses that provide a systematic introduction to the study of world music and performance.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and be in good academic standing, have completed one lower-division course with a grade of C or better, and have successfully completed at least two (2) quarters of the same lower-division ensemble course (Ethnomusicology 91A through 91Z).

*Optional Focus in Iranian Music:* Students must select 91L as the lower-division ensemble course.

### The Minor

*Required Lower-Division Courses (9-10 units):* Ethnomusicology 5 or M25, and one course from 7, 15, 30, M35, 40, 45, M50A, M50B, 60, M73, M110A, or M110B.

*Required Upper-Division Courses (22 units):* Ethnomusicology 101; three courses (6 units) from the same performance ensemble course numbered from 161A to 161Z; and three upper-division elective courses from the department. No more than one course from 195A to 199 may be applied to the minor.

*Optional Focus in Iranian Music:* Ethnomusicology C141, 142, 143, and three courses (6 units) of 161L.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Iranian Music Minor

The Iranian Music minor is designed for students who wish to augment their major program with a group of related courses that provide a systematic introduction to the study of Iranian music, performance, and culture.

### Admission

To enter the minor, students must be in good academic standing (grade-point average of 2.0 or better), and have completed Ethnomusicology 5 or M25, 8, 91L, with grades of C or better.

## The Minor

*Required Lower-Division Courses (11 units):* Ethnomusicology 5 or M25, 8, 91L.

*Required Upper-Division Courses (20 units):* Ethnomusicology 101, 144 (must be taken twice), 145 or 163, 161L (must be taken twice).

## Policies

A minimum of 31 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Ethnomusicology MA, CPhil, PhD

The department offers MA and PhD degrees in Ethnomusicology, with a specialization in systematic musicology or music and anthropology. Both degree programs train students for future university teaching careers, as well as careers in library science and archiving, the music industry, public service, and music technology. The department provides fellowships, teaching assistantships, and research assistantships for qualified students.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Ethnomusicology

### Lower-Division Courses

**5. Music Around World. (5)** Lecture, four hours; discussion, one hour; outside study, 10 hours. Overview of world's musical traditions by selecting one or two case studies from each of nine musical world regions: Pacific, East Asia, Southeast Asia, South Asia, Middle East, Africa, Europe, Latin America, and U.S. and Canada. P/NP or letter grading.

**M6A-M6B-M6C. Introduction to Musicianship. (2-2-2)** (Same as Music M6A-M6B-M6C and Musicology M6A-M6B-M6C.) Laboratory, four hours. Preparation: placement examination. Course M6A is enforced requisite to M6B, which is enforced requisite to M6C. Students must receive grade of C– or better to proceed to next course in sequence. Introduction to musicianship through in-depth exploration of basic common musical elements and training in aural recognition, sight singing, dictation, and keyboard skills. Focus on topics such as tonal and modal harmony, rhythm, improvisation, composition, notation, and ear training to prepare students for later theory courses, participation in music ensembles, advanced study in music, and professional careers. Letter grading.

**7. Introduction to Music and Culture of Iran. (4)** Lecture, four hours. Examination of Persian music in historical, social, linguistic, and cultural contexts. Discus-

sion of musical forms, rules of improvisation, structure of modal system and rhythmic cycles, religious music, and traditional and modern pop music. Consideration of interrelationships between musical genres and other art forms (dance, theater, visual arts, and literature) and analysis of how these types of music have intersected with issues of race, class, gender, religion, ritual, politics, social movements, and cultural identity. Includes detailed introduction to musical terms and concepts throughout. Letter grading.

**8. Current Practices in Iranian Music-Making. (4)** Seminar, three hours. Introduction to contemporary practices of Iranian music-making, with particular focus on social, cultural, religious, and political issues since 1979 Iranian Revolution. Consideration of interrelationships between musical genres. Analysis of how these types of music have intersected with issues of language, race, class, gender, ritual, politics, social movements, and cultural identity. Survey of evolution of Iranian musical practices during four decades of Iranian Revolution. P/NP or letter grading.

**10A. Music Theory and Musicianship I. (5)** Lecture, four hours; discussion, one hour. Preparation: placement examination. Course 10A is enforced requisite to course 10B. Students must receive grade of C or better to proceed to next course in sequence. Basic technical terms of Western music and various non-Western musical cultures around the world; reading and writing Western music notation and some non-Western notational traditions; rhythm and intervals as they manifest themselves in distinct traditions; musical symbols, such as dynamics and articulation marks; vocabulary of ornamentations in Western and non-Western traditions; pitch organization systems of the world. Letter grading.

**10B. Music Theory and Musicianship II. (5)** Lecture, four hours; discussion, one hour. Enforced requisite: course 10A with grade of C or better. Introductory level harmony as practiced in Western classical music; Western music polyphony as a compositional technique and style; introduction to musical textures in Western and non-Western musical traditions; harmonic and formal analysis in Western and non-Western musical traditions; knowledge of various compositional techniques. Letter grading.

**15. American Life in Music. (4)** Lecture, three hours. Impact of ethnicity, race, gender, and other social processes on American music in late 20th century; use of and creativity in music to respond to and shape contemporary social processes. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A-20B-20C. Musical Cultures of World. (5-5-5)** Lecture, four hours; discussion, one hour; outside study, 10 hours. Enforced requisite: Music 20C with grade of C or better. Traditional and popular musics from many different countries, with introduction to basic ethnomusicological concepts and development of listening and analytical skills. Each course may be taken independently for credit. Letter grading. **20A.** Europe and Americas; **20B.** Africa and Near East; **20C.** Asia.

**21. Global Popular Musics I: Emergence of Recording Industries and Major Styles. (4)** Lecture, four hours. Exploration of what pop music is, how it became global, and what globalization and glocalization are. Pop music here is defined not just as music which has a wide audience base (which is popular), but music whose existence is result of technologies of recording, mass production, and mass distribution. Examination of rise of music industries and mass-produced music in countries across world in early 20th century, exploring issues of technology, capitalism, industry, trade, and migrations associated with colonialism. Study of how pop music from U.S. and numerous countries across world was global, transregional, and globalized before era of globalization in 1990s, as recording gave music new potential to travel. P/NP or letter grading.

**22. Global Popular Musics II: From Cassettes to Digital and Online Media. (4)** Lecture, four hours. Exploration of multiplicitous world of global pop beyond major pop genres and their industries established in early to mid-20th century. Examination of dramatic decentralization of media that took place with advent of cassette technology and explosion of new forms of popular music that are listened to on recordings as much as in live settings. Examination also of how major pop genres are appropriated and localized in contexts both intended and unintended by their producers at new intensities of speed and scale and further and further distance from urban, industrial, and political centers of power. Exploration of how this loosening of central control releases quagmires of exploitation, piracy, and creativity in world of popular and recorded music, and, later, with rise of Internet and social media. P/NP or letter grading.

**M25. Global Pop. (5)** (Same as Global Jazz Studies M25.) Lecture, four hours; discussion, one hour. Development of world music or world beat, including its meaning and importance to contemporary culture as well as its history and impact. P/NP or letter grading.

**30. Music and Media. (5)** Lecture, four hours; discussion, one hour. Exploration of ways music is mediated to people by industry, technologies, and corporations. Survey of leading theorists of media and exploration of case studies. P/NP or letter grading.

**M35. Blues, Society, and American Culture. (5)** (Same as Global Jazz Studies M35.) Lecture, four hours; discussion, one hour. Sociocultural history and survey of blues music tradition from its roots in West Africa to its emergence in African American oral culture, with emphasis on philosophical underpinnings and social and political impact of blues and its influence on development of country, jazz, gospel, rhythm and blues, rock, hip-hop music, and other mediums. P/NP or letter grading.

**40. Music and Religion. (5)** Lecture, four hours; discussion, one hour. Survey of nature, role, and power of music in religious rituals around world, covering music and ritual of Hinduism, Buddhism, Judaism, Christianity, and Islam, as well as religious traditions of Native Americans and syncretic religious practices in Americas such as African American gospel music, Brazilian Candomble, Cuban Santería, and Haitian vodoun. Letter grading.

**45. Music of Bollywood and Beyond. (5)** Lecture, four hours; discussion, one hour; outside study, 10 hours. History and development of South Asian film scores in their filmic context, especially omnipresent songs that most distinctively characterize this genre. P/NP or letter grading.

**46. India through Music. (5)** Lecture, five hours; discussion, one hour; outside study, nine hours. Exploration of major aspects of society, history, and culture in India through music. There is abundance of incredibly rich musical culture in this region. Introduction to as much diversity as possible, spanning villages to cities and global contexts; high- and low-brow musics; those spanning problematic categories of folk, classical, and popular; and those from powerful as well as oppressed and marginalized peoples. Music as lens to look more deeply into social and cultural world and to explore layers of history ranging from Persianate empires, British Empire, nationhood, and contemporary globalization. Highlights lines of power in particular, notably, those of caste, class, gender, colonialism, and nationalism. Minoritized and disenfranchised people and their music are as prominent as dominant styles and provide contextualization and critique. Letter grading.

**46W. India through Music. (5)** Lecture, five hours; discussion, one hour; outside study, nine hours. Requisite: English Composition 3. Not open for credit to students with credit for course 46. Exploration of major aspects of society, history, and culture in India through music. There is abundance of incredibly rich musical culture in this region. Introduction to as much diversity as possible, spanning villages to cities and global contexts; high- and low-brow musics; those spanning problematic categories of folk, classical, and popular; and those from powerful as well as oppressed and marginalized peoples. Music as lens to look more deeply into social and cultural world and to explore

layers of history ranging from Persianate empires, British Empire, nationhood, and contemporary globalization. Highlights lines of power in particular, notably, those of caste, class, gender, colonialism, and nationalism. Minoritized and disenfranchised people and their music are as prominent as dominant styles and provide contextualization and critique. Satisfies Writing II requirement. Letter grading.

**M50A-M50B. Jazz in American Culture. (5-5)** (Same as Global Jazz Studies M50A-M50B.) Lecture, four hours; discussion, one hour. Course M50A is not requisite to M50B. Survey of development of jazz in American culture. Discussion of different compositional/performance techniques and approaches that distinguish different sub-styles of jazz from one another, as well as key historical figures that shaped development of jazz from its early years through modern jazz. Important historical social issues (segregation, Depression, World War II, Civil Rights Movement) that intersect with history of U.S. and jazz music. P/NP or letter grading. **M50A.** Late 19th Century through 1940s; **M50B.** 1940s to Present.

**60. J.S. Bach in His World and Ours. (5)** Lecture, four hours; discussion, one hour. Examination of life and music of J.S. Bach in historical and cultural context of his era through its musical manifestations in present, including changes in performance styles, scholarly studies, reception, and contemporary fan culture. P/NP or letter grading.

**68A-68F. World Music Specializations. (2-2)** Activity, three hours; outside practice, three hours. Performance of specializations in traditional vocal music, instrumental music, and dance. May be repeated for credit without limitation. P/NP or letter grading. **68A.** Music of China: Ensemble. **68F.** Music of India: Ensemble.

**68B-68O. World Music Specializations. (1 each)** Activity, two hours; outside practice, one hour. Performance of specializations in traditional vocal music, instrumental music, and dance. May be repeated for credit without limitation. P/NP or letter grading. **68B.** Music of China: Chinese Opera; **68C.** Music of China: Chinese Folk Dance; **68G.** Music of India: Tabla; **68M.** Music of Balkans: Ensemble; **68N.** Music of Balkans: Choir; **68O.** Music of Balkans: Instrumental Music.

**M73. Music and Religion in Popular Culture. (5)** (Same as Musicology M73.) Lecture, four hours; discussion, one hour. Survey of popular music in religious traditions since the 1970s. Growth of music in Jewish denominations, including Orthodox, Reform, and Conservative, and Christian contemporary music, from evangelical to cross-over artists performing in mainstream. Credit for both courses M73 and M173 not allowed. P/NP or letter grading.

**M80. Jewish American Experience through Music. (5)** (Same as Jewish Studies M80 and Musicology M80.) Lecture, four hours; discussion, one hour. In synagogue and on stage, and from LP recordings to YouTube, Jews in America have varied musical experiences. Music of synagogue, celebrations at home, in community, and theater are all interesting developments of Jewish music. New Opportunities in entertainment industry brought new possibilities for Jews in popular music, rock, and film scores. Exploration of various examples of Jews responding and adapting to their American context and becoming American through music. Exploration of different music genres and contexts. Presentations by guest composers and performers. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**91A-91Z. World Music Performance Organizations. (2 each)** Activity, three hours. Group performance of traditional vocal and instrumental music of world cultures. May be repeated for credit without limitation. P/NP or letter grading. **91A.** Music and Dance of American Indians; **91B.** Music of Bali; **91E.** Music and Dance of Ghana; **91G.** Music of Japan; **91H.** Music of

Java; **91J.** Music of Korea; **91K.** Music of Mexico; **91L.** Music of Persia; **91N.** Music of Near East; **91Z.** Open Ensemble.

**91P. World Music Performance Organizations: African American Music Ensemble. (2)** Activity, three hours. Performance of diverse range of vocal repertoire including spirituals, gospel, freedom/Civil Rights songs, and other works by African-diasporic composers, including anthems, hymn arrangements, and various forms of contemporary choral music. Tracing development of this music from 1600s to present, African American choral music is medium performed a cappella or with instrumental accompaniment. May be repeated for credit without limitation. P/NP or letter grading.

**92. Private Instruction in Music. (2)** Studio, one hour. Limited to Ethnomusicology majors. Private or semi-private music instruction with distinguished community-based musician, that must be arranged by students and approved by course instructor. May be repeated for credit without limitation. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**C100. Audiovisual Archiving in 21st Century. (4)** Seminar, three hours. Designed for Ethnomusicology majors. Examination of history, present state, and future of audiovisual archives, with specific focus on ethics, copyright, contracts, fieldwork, preservation, and access and issues related to technology, space, budgets, and staffing. Concurrently scheduled with course C200. P/NP or letter grading.

**101. Introduction to Ethnomusicology. (4)** Lecture, four hours. Introduction to history of field of ethnomusicology, basic fieldwork and analysis methods, and current issues in research. Introduction also of career opportunities for ethnomusicology graduates. Letter grading.

**M103. Creating Musical Community. (4)** (Same as Global Jazz Studies M103, Music M103, and Musicology M103.) Seminar, four hours; discussion, one hour. Limited to school of music majors. Faculty and students make music together in different modes. Students learn certain repertoire, refine it, and bring it to concert performance. Students critically engage musical literacies and notion of social contract that forms basis of musical notation. Drawing from American music folk game traditions, highlights complex history of this country and way in which entire body is used as resource when instruments are unavailable. Letter grading.

**105. Music Business. (4)** Lecture, four hours; outside study, eight hours. Designed for junior/senior Ethnomusicology majors in public ethnomusicology emphasis. How music industry functions and how products are created, marketed, and consumed. Basic information on production of recordings and legal issues faced by musicians, students, and scholars who use music in their work. P/NP or letter grading.

**106A. Traditional North American Indian Music. (4)** Lecture, three hours; discussion, one hour. Native North American traditional music and its role in tribal societies. California, Southwest, Pacific Northwest, Northern and Southern Plains, Great Lakes/Eastern Woodlands, and Southeastern culture areas included. P/NP or letter grading.

**106B. Contemporary North American Indian Music. (4)** Lecture, three hours; discussion, one hour. Contemporary Native North American musical expression, including popular styles (folk, country, rock), intertribal Indian musical genres (powwow), syncretic religious music, and traditional/historic Pan-Indian music. P/NP or letter grading.

**M108A-108B. Music of Latin America. (5-5)** Lecture, four hours; discussion, one hour. Course M108A is not requisite to 108B. Survey of traditional and contempo-

rary musical culture. P/NP or letter grading. **M108A.** Mexico, Central America, and Caribbean Isles. (Same as Chicana/o and Central American Studies M108A.); **108B.** Latin South America.

**M109. Women in Jazz. (4)** (Same as African American Studies M109, Gender Studies M109, and Global Jazz Studies M109.) Lecture, four hours; discussion, one hour. Sociocultural history of women in jazz and allied musical traditions from 1880s to present. Survey of women vocalists, instrumentalists, composers/arrangers, and producers and their impact on development of jazz. P/NP or letter grading.

**M110A-M110B. African American Musical Heritage. (5-5)** (Formerly numbered M12A-M12B.) (Same as African American Studies M116A-M116B and Global Jazz Studies M110A-M110B.) Lecture, four hours; discussion, one hour. P/NP or letter grading. **M110A.** Sociocultural history and survey of African American music covering Africa and its impact on Americas; music of 17th through 19th centuries; minstrelsy and its impact on representation of blacks in film, television, and theater; religious music, including hymns, spirituals, and gospel; black music of Caribbean and Central and South America; and music of black Los Angeles. **M110B.** Sociocultural history and survey of African American music covering blues, pre-1947 jazz styles, rhythm 'n' blues, soul, funk, disco, hip-hop, and symbiotic relationship between recording industry and effects of cultural politics on black popular music productions.

**M111. Ellingtonia. (4)** (Same as African American Studies M111 and Global Jazz Studies M111.) Lecture, three hours. Music of Duke Ellington, his life, and far-reaching influence of his efforts. Ellington's music, known as Ellingtonia, is one of largest and perhaps most important bodies of music ever produced in U.S. Covers many contributions of other artists who worked with Ellington, such as composer Billy Strayhorn and musicians Johnny Hodges, Cootie Williams, and Mercer Ellington. P/NP or letter grading.

**113. Music of Brazil. (4)** Lecture, three hours. History of ethnic and art music in Brazil, with some reference to Portuguese antecedents. P/NP or letter grading.

**M115. Musical Aesthetics in Los Angeles. (4)** (Same as Chicana/o and Central American Studies M115.) Lecture, three hours. Confronting aesthetics from classical perspective of art as intuition, examination on cross-cultural basis of diverse musical contexts within vast multicultural metropolis of Los Angeles, with focus on various musical networks and specific experiences of Chicano/Latino, African American, American Indian, Asian, rock culture, Western art music tradition, and commercial music industry. P/NP or letter grading.

**M116. Chicano/Latino Music in U.S. (5)** (Same as Chicana/o and Central American Studies M116.) Lecture, four hours; discussion, one hour. Historical and analytical examination of musical expression of Latino peoples who have inhabited present geographical boundaries of U.S. P/NP or letter grading.

**117. American Popular Music. (4)** Lecture, four hours; discussion, one hour. Survey of history and characteristics of American popular music and its relationship to American culture, with emphasis on 20th-century popular music and its major composers, including comparison between traditional pre-1950 popular music and trends in post-1950 popular music. P/NP or letter grading.

**118. Development of Rock. (5)** Lecture, four hours. Examination of historical and stylistic development of rock from 1950s to present, with attention to its socio-cultural and political impact on American society and beyond. P/NP or letter grading.

**M119. Cultural History of Rap. (5)** (Same as African American Studies M107 and Global Jazz Studies M119.) Lecture, four hours; discussion, one hour. Introduction to development of rap music and hip-hop culture, with emphasis on musical and verbal qualities, philosophical and political ideologies, gender representation, and influences on cinema and popular culture. P/NP or letter grading.

**CM120. Bibliography and Research Methods in Rap Music/Hip-Hop Studies. (4)** (Formerly numbered C120.) (Same as African American Studies CM110.) Seminar, three hours. Requisite: course M119. Designed for juniors/seniors conducting research on hip-hop in preparation for capstone projects such as honors or senior thesis. In-depth examination of intellectual history of rap music/hip-hop studies scholarship. Examination of readings related to intellectual history of rap music scholarship and allied traditions (including breakdance and graffiti). Exploration of broad range of research methods and archival/library centers specific to hip-hop studies. Concurrently scheduled with course CM220. Letter grading.

**C121. Tibetan Pop Music: Tibet, Exile, China, and World. (4)** Lecture, four hours. Pop music is key part of contemporary Tibet, emerging in 1980s in Tibet and exile, and even earlier if mass-disseminated socialist songs of Tibet as compulsory, state-produced popular music is considered. Exploration of multifaceted world of pop music in and of Tibet and Tibet within China of Mao Zedong and socialism, and that of market socialists from Deng Xiaoping to Xi Jinping. Exploration of ways in which Tibetan pop music is voice for Tibetans in Tibet, numerically small minority in China, and in small exile population. Focus on Tibetan pop music exposes students to plethora of issues relevant to musics of small, minority, and stateless people, and of myriad political dimensions of pop music—turbulent, crude, subtle, social, and economic. Concurrently scheduled with course C221. P/NP or letter grading.

**122. Global Dynamics of K-Pop. (4)** Lecture, four hours. Focused study on K-pop—South Korea's most significant cultural export. Close attention is paid to global influences that have shaped Korean popular music in earlier decades and in turn, unprecedented global reach of K-pop in recent history. Study is divided into three units: contextualizing K-pop, transnational flows in K-pop, and critical takes on K-pop. Each unit features distinctive case studies, and lectures draw out some of broader linkages between units as they relate to modern Korean history, Cold War geopolitical formations and legacies, modern South Korean state and economy, and spread of Korean popular culture. Study draws on wide array of scholarly articles, journalistic pieces, music videos, webinars, and online resources while foregrounding larger issues that emerge through cultural analysis. P/NP or letter grading.

**M128. Exploration in Rhythms. (2)** (Same as Global Jazz Studies M128.) Lecture, two hours; outside study, four hours. Preparation: ability to read melodic or rhythmic notation. Investigation and exploration of musical time and rhythm in 20th- and 21st-century classical, jazz, world, and popular music. Concepts explored include meter, pulse, rhythmic cycles, hemiolas, and polyrhythms. P/NP or Letter grading.

**M130. Culture of Jazz Aesthetics. (4)** (Same as Anthropology M158 and Global Jazz Studies M130.) Lecture, three hours. Recommended requisite: course 20A or 20B or 20C or Anthropology 3 or 4. Aesthetics of jazz from point of view of musicians who shaped jazz as art form in 20th century. Listening to and interacting with professional jazz musicians who answer questions and give musical demonstrations. Analytical resources and historical knowledge of musicians and ethnomusicologists combined with those interested in jazz as cultural tradition. P/NP or letter grading.

**M131. Development of Latin Jazz. (4)** (Same as Global Jazz Studies M131 and Music M131.) Lecture, four hours; discussion, one hour. Survey of historical and stylistic development of musical style referred to today as Latin jazz. P/NP or letter grading.

**133. European Musics: Politics, Identities, Nationalisms. (5)** Lecture, four hours; outside study, 12 hours. Limited to Ethnomusicology, Music, Musicology, Music History, and European Studies majors. European folk, popular, and classical music as practice that shapes ideas about national, ethnic, class, and religious identity and as tool of political domination and resistance. Letter grading.

**M134. Introduction to Armenian Music. (4)** (Same as Armenian M134 and Music M134.) Lecture, three hours. Some amount of formal music study and experience as vocalist or instrumentalist desirable but not

essential. Introduction to history, tradition, and scope of music of Armenia. Focus on number of different genres and approaches, and interactions between music and culture, society, and history. P/NP or letter grading.

**135. Indo-Persian Musical Cultures: Mapping Musical Connections.** (4) Lecture, four hours. Study of connections between musical cultures of Indian subcontinent, Central Asia, and Iran. Exploration of musical ideas, forms, theories, instruments, styles, lyrics, etc. that make visible cultural continuities across broad Indo-Persianate world. Connected histories developed in these vast areas are not just through official language and religion of courts—Persian and Islam—but through trade, wandering Sufis, Persian poetry, scholars, and musicians, engendering deep and long-lasting connections. Focus is both historical and contemporary. Readings include articles and book chapters on musical cultures of Central and South Asia. By exploring diversity of commonalities in Indo-Persian musical cultures, understanding of often hidden similarities across different ethnic, cultural, geographical, and political boundaries is enhanced. Study elucidates values, ideas, and goals that relate individuals and groups across different places and cultures. Letter grading.

**136A. Music of Africa.** (5) Lecture, four hours; discussion, one hour; outside study, 10 hours. Introduction to music of Africa through general discussion of select topics such as continent and its peoples, function, musician, instruments, musical structure and related arts, and contemporary music. P/NP or letter grading.

**C136B. Music of Africa.** (4) Lecture, four hours; outside study, eight hours. Introduction to music of various African cultures and regions. Through readings, lectures, viewing of films, and analysis of music, students gain greater understanding of diverse musical traditions found on African continent and become more cognizant of contributions that people of Africa have made to world music. Concurrently scheduled with course C236B. Letter grading.

**C140. Music of Arab World.** (4) Seminar, three hours. Limited to junior/senior Ethnomusicology majors. Investigation of historical and cultural backgrounds, main musical styles, relationship between theory and practice and emphasis on mode and improvisation, and 20th- and 21st-century trends in music of Arabic-speaking Near East. Concurrent participation in Near East performance ensemble (course 91N or 161N) required. Concurrently scheduled with course C240. Letter grading.

**C141. Music of Turkey and Iran.** (4) Seminar, three hours. Limited to junior/senior Ethnomusicology majors. Comparative study of music of Iran and other related areas, including Turkey, with particular reference to their historical and cultural background, sources on music theory and aesthetics, instruments, style, technique of improvisation, and contemporary practice. Concurrent participation in Near East performance ensemble (course 91N or 161N) required. Concurrently scheduled with course C241. Letter grading.

**142. Music and Culture in Afghanistan and Central Asia.** (4) Lecture, four hours. Survey of music of Afghanistan, Turkmenistan, Tajikistan, Uzbekistan, and Xinjiang, including traditional and popular styles. Examination of modal systems and specific music genres of these regions, and exploration of cultural contexts, communicative functions, forms, styles, instruments, and musical philosophies. Consideration of interrelationships between musical genres and other art forms (dance, theater, visual arts, and literature) and analysis of how these types of music have intersected with issues of race, class, gender, religion, ritual, politics, social movements, and cultural identity. Includes detailed introduction to musical terms and concepts throughout. Letter grading.

**143. Musical Traditions around Iran: Baluchistan, Kurdistan, Azerbaijan, and Iraq.** (4) Lecture, four hours. Introduction to selected types of music around Iran with particular attention to Baluchistan, Kurdistan, Azerbaijan, and Iraq. Study of structures and genres of music in urban and rural communities. Examination of how music-making relates to aspects of current

Middle Eastern life such as religious observance, gender relations, ethnic and national identity, and process of globalization. Letter grading.

**144. Special Topics in Iranian Music.** (4) Seminar, three hours. Requisites: courses 5 or M25, and 8. Exploration of topics on musical cultures and styles in Iran focusing on specific sociopolitical contexts, sexuality and gender studies, politics and resistance, religion, mysticism and spirituality, and role of musical discourses and practices in Iran and in its multiple diasporas (particularly Los Angeles). Topics announced in advance. May be repeated for credit. P/NP or letter grading.

**145. Analyzing Rhythm in Persian Music.** (4) Seminar, three hours. Requisites: courses 5 or M25, and 8. Examination of rhythm principles of Iranian music. Through theoretical and applied methods, exploration of experience of musical rhythm in Iran. Students learn various rhythmic functionalities in order to gain deeper understanding and appreciation for Iran's traditional, folklore, religious, and mystical musical styles. Examination of core rhythmic elements in Iranian music both through ethnomusicological literature on and by practicing Persian percussion in class. P/NP or letter grading.

**146. Folk Music of South Asia.** (4) Lecture, three hours; laboratory, one hour. Illustrated survey of some regional genres, styles, and musical instruments found in India and Pakistan, with special reference to religious, social, economic, and cultural context of their occurrence. P/NP or letter grading.

**147. Survey of Classical Music in India.** (4) Lecture, four hours. Examination of melodic, metric, and formal structures of Indian classical music in context of religious, sociocultural, and historical background of country. P/NP or letter grading.

**148. Global and Local South Asian Popular Music.** (4) Lecture, four hours. India, South Asia, and South Asian diasporas are home to vast array of popular musics. Bollywood (or Hindi film music) dates from 1940s to present day and has spread to countries as diverse as Ghana, Greece, Israel, and western world from 1950s. Older history of popular music in India delves into cosmopolitan colonial cultures of jazz, minstrelsy and traveling theatre, and global circulation of gramophone discs. With advent of cassettes, then CDs, VCDs, MP3s, and now online platforms, popular musics have proliferated. These include rustic vernacular styles like Bhojpuri pop; music of downtrodden groups such as Chamar pop or Gaana; Sufi popular music highlighting religious harmony; pop-style Hindu devotional songs; and recently, militant Hindutva pop. Popular musics have also emerged from South Asian diasporas, such as Chutney and Soca from Trinidad, or Bhangra from United Kingdom Punjabis. P/NP or letter grading.

**C150. Music and Politics in East Asia.** (4) Lecture, four hours. Limited to Ethnomusicology, Music, Music History, World Arts and Cultures, Chinese, Japanese, Korean, and East Asian Studies majors. Political imperatives have long had direct and often explicit impact on music sound and context in East Asia. Examination of interaction of ideology and musical practice in medieval Korea and in contemporary Korea, Japan, Taiwan, and China. Concurrently scheduled with course C250. Letter grading.

**C155. Intangible Cultural Heritage Worldwide.** (4) Lecture, three hours. Designed for Ethnomusicology, Music History, and World Arts and Cultures majors. Through critical reading of publications by scholars, officials, and culture-bearers involved in intangible cultural heritage policy and practice, examination of history of heritage conservation; concepts of tangible and intangible heritage; pioneering roles of Japan, South Korea, and UNESCO in making intangible cultural heritage focal point of much cultural policy worldwide; tensions among international ideals, nation-state nationalisms, regionalism, ethnicity, and indigeneity in creating intangible cultural heritage policies in different settings; U.S. equivalents to intangible cultural heritage policies and practices in other countries; roles of private individuals, community initiative, and professional organizations in cultural preservation schemes; and related concept of sustainability. Concurrently scheduled with course C255. Letter grading.

**C156A-156B. Music in China.** (4-4) Letter grading. **C156A.** Lecture, four hours. Requisite: course 20C. Limited to Ethnomusicology majors. Survey of traditional, popular, and Western-influenced musics currently widespread in China, including musical analysis of different genres; examination of contexts in which they exist. Investigation of profound effect of Confucian and Communist ideologies on music. Concurrently scheduled with course C256A. **156B.** Lecture, three hours; laboratory, two hours. Requisite: course C156A. Introduction to various notational systems. Analysis of representative styles.

**157. History of Chinese Opera.** (4) Lecture, four hours. Survey of dramatic elements in Chinese operas, incorporating singing, dance, and acrobatics. Emphasis on traditional and modern Peking opera and its relation to Cantonese and other genres. P/NP or letter grading.

**158. Studies in Chinese Instrumental Music.** (4) Lecture, four hours; outside study, eight hours. Survey of Chinese musical instruments and their musical styles, classifications system, specific musical notation, and use in context of Chinese society. P/NP or letter grading.

**C159. Music on China's Periphery.** (4) Lecture, four hours; outside study, eight hours. Designed for undergraduate Ethnomusicology, Music, Music History, and World Arts and Cultures majors. Survey of musics from China's border regions and neighboring countries: technical musical characteristics and important contextual issues related to traditional and modern styles from Mongolia, Uighurs of Xinjiang, Tibet, Tibeto-Burman peoples, Hmong, and indigenous peoples of Taiwan. Concurrently scheduled with course C259. P/NP or letter grading.

**160. Survey of Music in Japan.** (4) Lecture, three hours. Survey of main genres of Japanese traditional music, including Gagaku, Buddhist chant, Biwa music, Koto music, Shamisen music, and music used in various theatrical forms. P/NP or letter grading.

**161A-161Z. Advanced World Music Performance Organizations.** (2 each) Activity, three hours; outside practice, three hours. Limited to Ethnomusicology majors. Advanced study of traditional vocal and instrumental world music. May be repeated for credit without limitation. Letter grading. **161A.** Music and Dance of American Indians; **161B.** Music of Bali; **161E.** Music and Dance of Ghana; **161G.** Music of Japan; **161H.** Music of Java; **161J.** Music of Korea; **161K.** Music of Mexico; **161L.** Music of Persia; **161M.** Music of Thailand; **161N.** Music of Near East; **161Z.** Open Ensemble.

**161P. Advanced World Music Performance Organizations: African American Music Ensemble.** (2) Activity, three hours; outside practice, three hours. Performance of diverse range of vocal repertoire including spirituals, gospel, freedom/Civil Rights songs, and other works by African-diasporic composers, including anthems, hymn arrangements, and various forms of contemporary choral music. Tracing development of this music from 1600s to present, African American choral music is medium performed a cappella or with instrumental accompaniment. May be repeated for credit without limitation. Letter grading.

**162. Advanced Private Instruction in Music.** (2) Studio, one hour; outside practice, five hours. Preparation: two years of courses 91A through 91Z or 92. Limited to Ethnomusicology majors. Advanced private or semiprivate music instruction with distinguished community-based musician, that must be arranged by students and approved by course instructor. May be repeated for credit without limitation. Letter grading.

**163. Theory, Practice, and Improvisation in Iranian Music.** (4) Seminar, three hours. Requisites: courses 5 or M25, and 8. Designed to expose students from wide background of experience, outlooks, and training to many facets of art and craft of improvisation in Iranian music. Examination of how organization of *radif* (collection of melodic figures preserved through oral tradition that provides basis of improvisation), and master and disciple teaching and tutoring, shape improvisational and performance practices in Iranian traditional music. Comparison of *radif* to number of related musical cultures: Arabic *maqam*, Turkish *makam*, and number of *ragas* from North Indian tradition. Includes in part workshop format in which stu-



dents are encouraged to bring their own musical instruments, or for vocalist to join in, in exploring *radif*. Students read about theoretical issues of *radif*, and learn how to memorize, compose, and improvise important parts of *radif*. P/NP or letter grading.

**164. World Music Composition. (4)** Lecture, three hours; laboratory, three hours; outside study, six hours. Prerequisites: courses 20A, 20B, 20C. Limited to Ethnomusicology majors. Examination in composition using variety of Western and non-Western musical systems. Final project required. Letter grading.

**C165. Selected Topics in Composition. (4)** Lecture, four hours; outside study, eight hours. Evaluation of important musical concepts and approaches to enable students to develop greater compositional technique and understanding. Ways composers of jazz, European classical, and other musical genres have successfully approached use of extended compositional forms. Examination of way in which world music traditions have interfaced with jazz and other types of music to create new musical languages. Use of concepts, structural paradigms, and inspiration from literature, visual arts, and other sources to develop student compositions. May be repeated once for credit. Concurrently scheduled with course C270. Letter grading.

**168A-168F. Advanced World Music Specializations. (2-2)** Activity, three hours; outside practice, three hours. Advanced performance of specializations in traditional vocal music, instrumental music, and dance. May be repeated for credit without limitation. P/NP or letter grading. **168A.** Music of China: Ensemble. **168F.** Music of India: Ensemble.

**168B-168O. Advanced World Music Specializations. (1 each)** Activity, two hours; outside practice, one hour. Advanced performance of specializations in traditional vocal music, instrumental music, and dance. May be repeated for credit without limitation. P/NP or letter grading. **168B.** Music of China: Zheng; **168C.** Music of China: Qin; **168G.** Music of India: Tabla; **168M.** Music of Balkans: Ensemble; **168N.** Music of Balkans: Choir; **168O.** Music of Balkans: Instrumental Music.

**171. Music and Diverse Worlds of Gender and Sexuality. (5)** Lecture, four hours; discussion, one hour. Exploration of diverse worlds of gender, sexuality, and music across multiple global locations. Introduction to theoretical approaches to study of gender and sexuality by theorists such as Judith Butler, Kimberlé Crenshaw, Jack Halberstam, bell hooks, and Sherry Ortner. Exploration of gender critically as highly plural, fluid, and intersectional phenomenon of social organization. As embodied arts existing in often liminal and highly-charged performing spaces and intertwined with pleasure, music and dance frequently foreground issues surrounding body, gender, and sexuality. While being spaces for performing of hegemonic gender identities they can reveal contradictions of normative gender identities (albeit not always intentionally or consciously), and they are also central part of many gender and sexual minority subcultures. Study of gender, performing arts, and power as inseparable, and as manifested in multiple forms of intersectionality, notably including race, class, and age. Letter grading.

**M173. Selected Topics in Music and Religion in Popular Culture. (5)** (Same as Musicology M173.) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course M73 lecture. Exploration of connections of music, religion, and popular culture among American Jews and Christians. Credit for both courses M73 and M173 not allowed. Letter grading.

**174. Aesthetics of Music. (5)** Lecture, four hours; discussion, one hour. Designed for nonmajors. Historical survey of musical aesthetic thought and practice. Selected readings and musical examples. P/NP or letter grading.

**175. Sociology of Music. (4)** Lecture, four hours. Designed for Ethnomusicology, Music History, and Music majors. Introduction to sociology of music, its principles and basic concepts, and its critical significance for sociomusicological inquiry, including study of popular music, ethnomusicology, and cultural politics of music. P/NP or letter grading.

**M176. Music and Capitalism in West. (4)** (Same as Music Industry M176.) Lecture, four hours. Follows history of western capitalism and how it has shaped music-making and listening to present time. P/NP or letter grading.

**177. Music, Internet, and Social Media. (4)** Lecture, four hours. Innovations in media and technology accompany and contribute to fundamental changes in social and economic organization. Such shifts are often spoken of as revolutions, notably, recent digital or Internet revolution. Exploration of impact of Internet-based social media on ways in which people make music, connect through music, and live from music in diverse global contexts. Examination of how social media are social in new ways, and how they offer new potentials (and new limitations and challenges) for music. Examination of rise of Web 2.0; and exploration of how social media affects music in relation to artistic and creative work, affect and experience, livelihoods and remuneration, and music industries. Examination of both utopian and dystopian discourses in connection with music, Internet, and social media; and exploration of potential for marginalized people, as well as for corporate and political control. P/NP or letter grading.

**C178. Aesthetic and Philosophical Foundations in Systematic Musicology. (4)** Seminar, three hours; outside study, nine hours. Limited to Ethnomusicology majors. Comprehensive overview of critical approaches to aesthetics in systematic musicology. Exploration of aesthetics and philosophy of music, sociology of music, critical theory, hermeneutics, and music criticism. Concurrently scheduled with course C204. Letter grading.

**181. Anthropology of Music. (4)** Lecture, four hours. Designed for Ethnomusicology, Music History, and Anthropology majors. Cross-cultural examination of music in context of social behavior and how musical patterns reflect patterns exhibited in other cultural systems, including economic, political, religious, and social structure. P/NP or letter grading.

**CM182. Music Industry. (4)** (Same as Music CM182, Musicology CM186, and Music Industry M182.) Lecture, four hours; discussion, one hour; outside study, seven hours. Limited to Ethnomusicology, Music, and Musicology majors. Examination of influence of music industry on way music is created, performed, listened to, evaluated, and used today. Historical approach taken, beginning with music published in 18th century and continuing through development of audio recordings to MTV and popular music today. Concurrently scheduled with course CM288. Letter grading.

**183. Study of Ethnomusicology. (4)** Lecture, three hours; outside study, nine hours. Prerequisites: courses M6A, M6B, M6C, 20A, 20B, 20C. Designed for Ethnomusicology majors. Introduction to history of field, basic fieldwork and analysis methods, and current issues in research. Letter grading.

**C184. Public Ethnomusicology. (4)** Lecture, four hours; outside study, eight hours. Designed for Ethnomusicology majors. How music industry functions and how products are created, marketed, and consumed. Techniques of pure research, basic and theoretical in nature, contrasted with those of applied research, practical and policy-oriented in approach. Concurrently scheduled with course C286. Letter grading.

**185. Information Literacy and Research Skills. (1)** Tutorial, one hour. Limited to Ethnomusicology majors. Designed to assist students with becoming information literate. How to locate, identify, and critically evaluate and use print and electronic information effectively and ethically. P/NP grading.

**186. Senior Recital or Project. (2)** Tutorial, one hour. Limited to seniors. Final project for students who, with approval from their faculty advisers, perform one-hour recital or have their compositions performed in one-hour recital. Organization and arrangement of rehearsal schedule with appropriate accompaniment and preparation of program for performance. Grades are assigned in term recital is performed or composition is completed and performed. P/NP grading.

**188. Special Courses in Ethnomusicology. (4)** Lecture, four hours; outside study, eight hours. Selected topics in ethnomusicology. Consult Schedule of Classes for topics and instructors. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**193. Journal Club Seminars: Ethnomusicology. (2)** Seminar, two hours; outside study, four hours. Limited to undergraduate students. Reading and discussion of writings on subjects in ethnomusicology. May be repeated for credit. P/NP grading.

**195A. Community or Corporate Internships in Ethnomusicology. (2 to 4)** Tutorial, six to 12 hours. Limited to juniors/seniors with minimum cumulative 3.0 grade-point average. Internship in supervised setting in community agency or private business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**195B. Community or Corporate Internships in Public Ethnomusicology. (2 to 4)** Tutorial, six to 12 hours. Limited to seniors in public ethnomusicology emphasis. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide weekly reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**196. World Music Teaching Practicum. (4)** Seminar, two hours; fieldwork, three hours; outside study, seven hours. Limited to junior/senior Ethnomusicology majors. Integration of academic work and hands-on training. Participation in theoretical discussions of world music education and application of these theories in elementary and secondary music and social studies classrooms. P/NP or letter grading.

**197E. Individual Studies in Ethnomusicology. (2 to 4)** Tutorial, one hour; outside study, five to 11 hours. Preparation: 3.0 grade-point average. Limited to seniors. Individual intensive study in ethnomusicology, with scheduled meetings to be arranged between faculty member and student. Tangible evidence of mastery of subject matter resulting in final research project required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**197S. Individual Studies in Systematic Musicology. (2 to 4)** Tutorial, one hour; outside study, five to 11 hours. Preparation: 3.0 grade-point average. Limited to seniors. Individual intensive study in systematic musicology, with scheduled meetings to be arranged between faculty member and student. Tangible evidence of mastery of subject matter resulting in final research

project required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Ethnomusicology. (2 to 4)** Tutorial, to be arranged. Limited to junior/senior Ethnomusicology majors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for maximum of 8 units. Individual contract required. Letter grading.

## Graduate Courses

**C200. Audiovisual Archiving in 21st Century. (4)** Seminar, three hours. Designed for Ethnomusicology majors. Examination of history, present state, and future of audiovisual archives, with specific focus on ethics, copyright, contracts, fieldwork, preservation, and access and issues related to technology, space, budgets, and staffing. Concurrently scheduled with course C100. S/U or letter grading.

**201. History of Ethnomusicology. (4)** Seminar, three hours; outside study, nine hours. Limited to graduate ethnomusicology students. Basic literature and schools of thought in field of ethnomusicology from late 19th century to 1980s. Letter grading.

**202. Current Issues in Ethnomusicology. (4)** Seminar, three hours; outside study, nine hours. Limited to graduate ethnomusicology students. Current issues, basic literature, and schools of thought in field of ethnomusicology from 1980s to present. Letter grading.

**C204. Aesthetic and Philosophical Foundations in Systematic Musicology. (4)** Seminar, three hours; outside study, nine hours. Limited to Ethnomusicology majors. Comprehensive overview of critical approaches to aesthetics in systematic musicology. Exploration of aesthetics and philosophy of music, sociology of music, critical theory, hermeneutics, and music criticism. Concurrently scheduled with course C178. Letter grading.

**205. Seminar: Information Technology and Research Skills. (4)** Seminar, three hours. Limited to graduate ethnomusicology students. Lecture, demonstration, and practice. Basic skills for research on and about music that is essential to student careers as ethnomusicologists, specifically information technology skills, acoustics, and representational tools for nonlinguistic acoustic phenomena. Basic understanding of acoustics, ability to represent sounds in various graphic forms appropriate to them, and ability to locate and organize information sources related to field of ethnomusicology. Letter grading.

**206. Integrating Theory with Ethnography. (4)** Seminar, three hours. Designed to show how theory and primary research cannot exist without each other, and how various authors have integrated theoretical writings and ideas with their ethnographic or historical data. Reading of several recent ethnographies, mostly about music and possibly historical studies, in tandem with theoretical writings that inform arguments of these books. Letter grading.

**207. Seminar: North American Indian Music. (4)** Seminar, three hours. Requisite: course 106A or 106B. Survey of representative musical styles of Native North American Indians, including problems of transcription, methods of analysis, symbolic implications of song texts. Emphasis on interrelationship between music and cultural context. Influence of Western music in acculturative contexts. S/U or letter grading.

**208. Seminar: Latin American Music. (4)** Seminar, three hours. Review of bibliographic, methodological, and philosophical bases of musical research in Latin America, working from both general and specific perspectives. Exploration of research problems and investigations on specific musical cultures and distinct genres of musical expression. S/U or letter grading.

**M211. Seminar: African American Music. (4)** (Same as African American Studies M211.) Seminar, three hours. Requisites: courses M110A, M110B. Designed for graduate students. In-depth examination of intellectual history of African American music scholarship. Intensive investigation of problems, theories, interdis-

ciplinary methods/schools of research, and bibliography related to study of African American music. Letter grading.

**215A-215B. Ethnomusicological Perspectives and Paradigms I, II. (4-4)** Seminar, three hours; outside study, nine hours. Limited to graduate ethnomusicology students. Basic literature and schools of thought in field of ethnomusicology and related social science fields. Letter grading. **215A.** Late 19th century to 1980s; **215B.** 1960s to Present.

**216A-216B. Ethnomusicological Methods I, II. (4-4)** Seminar, three hours; outside study, nine hours. Limited to graduate ethnomusicology students. Letter grading. **216A.** Basic research techniques and perspectives on conducting research and writing it up in ethnomusicology. **216B.** Introduction to basic ethnographic fieldwork techniques and practices in ethnomusicology.

**CM220. Bibliography and Research Methods in Rap Music/Hip-Hop Studies. (4)** (Formerly numbered C220.) (Same as African American Studies CM210.) Seminar, three hours. Preparation: ongoing work or preparatory research in rap music/hip-hop studies. Designed for graduate students conducting research on hip-hop in preparation for comprehensive examination preparation, and graduate research projects including master's thesis and dissertation. In-depth examination of intellectual history of rap music/hip-hop studies scholarship. Examination of readings related to intellectual history of rap music scholarship and allied traditions (including breakdance and graffiti). Exploration of broad range of research methods and archival/library centers specific to hip-hop studies. Concurrently scheduled with course CM120. Letter grading.

**C221. Tibetan Pop Music: Tibet, Exile, China, and World. (4)** Lecture, four hours. Pop music is key part of contemporary Tibet, emerging in 1980s in Tibet and exile, and even earlier if mass-disseminated socialist songs of Tibet as compulsory, state-produced popular music is considered. Exploration of multifaceted world of pop music in and of Tibet and Tibet within China of Mao Zedong and socialism, and that of market socialists from Deng Xiaoping to Xi Jinping. Exploration of ways in which Tibetan pop music is voice for Tibetans in Tibet, numerically small minority in China, and in small exile population. Focus on Tibetan pop music exposes students to plethora of issues relevant to musics of small, minority, and stateless people, and of myriad political dimensions of pop music—turbulent, crude, subtle, social, and economic. Concurrently scheduled with course C121. S/U or letter grading.

**228. Seminar: Balkan Music. (4)** Seminar, three hours. Major issues in study of Balkan music, including song text analysis, music instruments, dance music, rituals and customs, minorities, and ideology. S/U or letter grading.

**230. European Musics: Politics, Identities, Nationalisms. (4)** Seminar, three hours; outside study, nine hours. Designed for graduate students. European classical, popular, and traditional musics, with particular attention to way in which music mirrors, negotiates, and contests ideas about and practices of national and other forms of identity, ideas developed in other domains of discourse and practice such as philosophy, history, literature, art, and folklore. Examination of way musicians, ordinary people, and politicians have used music to affect political processes involved in contesting and resolving tensions created between and among these identity formations. Historical period coverage primarily from 19th and 20th centuries, with examples from all over European continent. Letter grading.

**233A-233B-233C. European Traditional and Popular Music. (0-0-4)** Discussion, one hour. Review of literature on European traditional and popular music, with special attention to modern issues and processes. May be repeated for credit. In Progress (233A, 233B) and letter (233C) grading.

**C236B. Music of Africa. (4)** Lecture, four hours; outside study, eight hours. Introduction to music of various African cultures and regions. Through readings, lectures, viewing of films, and analysis of music, students gain greater understanding of diverse musical traditions found on African continent and become

more cognizant of contributions that people of Africa have made to world music. Concurrently scheduled with course C136B. Letter grading.

**237. Seminar: African Music. (4)** Seminar, three hours. Requisite: course 136A or C136B. Analysis of literature and schools of thought in African music scholarship from late 19th century to present, including some analysis of musical, historical, social, and cultural aspects of indigenous and contemporary art forms. S/U or letter grading.

**C240. Music of Arab World. (4)** Seminar, three hours. Limited to graduate ethnomusicology students. Investigation of historical and cultural backgrounds, main musical styles, relationship between theory and practice and emphasis on mode and improvisation, and 20th- and 21st-century trends in music of Arabic-speaking Near East. Concurrent participation in Near East performance ensemble (course 91N or 161N) required. Concurrently scheduled with course C140. S/U or letter grading.

**C241. Music of Turkey and Iran. (4)** Seminar, three hours. Limited to graduate ethnomusicology students. Comparative study of music of Iran and other related areas, including Turkey, with particular reference to their historical and cultural background, sources on music theory and aesthetics, instruments, style, technique of improvisation, and contemporary practice. Concurrent participation in Near East performance ensemble (course 91N or 161N) required. Concurrently scheduled with course C141. S/U or letter grading.

**248. Classical Music of India. (4)** Lecture, three hours; outside study, nine hours. Requisite: course 146 or 147. Study of history, theory, and practice of north and south Indian classical music. Emphasis on music history and traditional theory and analysis of present-day forms, styles, techniques, and musical instruments. Concurrent participation in Indian performance group (course 91F) required. S/U or letter grading.

**C250. Music and Politics in East Asia. (4)** Lecture, four hours. Designed for graduate students. Political imperatives have long had direct and often explicit impact on music sound and context in East Asia. Examination of interaction of ideology and musical practice in medieval Korea and in contemporary Korea, Japan, Taiwan, and China. Concurrently scheduled with course C150. Letter grading.

**251. Music of Indonesia. (4)** Lecture, three hours; outside study, nine hours. Requisite: course 20C. Emphasis on music and related performing arts of Java, Bali, and other Indonesian islands. Concurrent participation in one Indonesian performance group (course 91B or 91H) required. S/U or letter grading.

**252. Seminar: Music of Mainland Southeast Asia. (4)** Seminar, three hours. Requisite: course 20C. Presentation of materials concerning musical performance traditions of Laos, Cambodia, Vietnam, Thailand, and Burma, both in mainland Southeast Asia and in American context, with perspectives from archaeology, history, performance theory, applied anthropology, and ethnomusicology. S/U or letter grading.

**C255. Intangible Cultural Heritage Worldwide. (4)** Lecture, three hours. Designed for ethnomusicology, music history, and world arts and cultures graduate students. Through critical reading of publications by scholars, officials, and culture-bearers involved in intangible cultural heritage policy and practice, examination of history of heritage conservation; concepts of tangible and intangible heritage; pioneering roles of Japan, South Korea, and UNESCO in making intangible cultural heritage focal point of much cultural policy worldwide; tensions among international ideals, nation-state nationalisms, regionalism, ethnicity, and indigeneity in creating intangible cultural heritage policies in different settings; U.S. equivalents to intangible cultural heritage policies and practices in other countries; roles of private individuals, community initiative, and professional organizations in cultural preservation schemes; and related concept of sustainability. Concurrently scheduled with course C155. Letter grading.

**C256A. Music in China. (4)** Lecture, four hours. Requisite: course 20C. Limited to Ethnomusicology majors. Survey of traditional, popular, and Western-influenced musics currently widespread in China, including musical analysis of different genres; examination of

contexts in which they exist. Investigation of profound effect of Confucian and Communist ideologies on music. Concurrently scheduled with course C156A. Letter grading.

**C259. Music on China's Periphery. (4)** Lecture, four hours; outside study, eight hours. Designed for graduate Ethnomusicology, Music, Musicology, and World Arts and Cultures majors. Survey of musics from China's border regions and neighboring countries: technical musical characteristics and important contextual issues related to traditional and modern styles from Mongolia, Uighurs of Xinjiang, Tibet, Tibeto-Burman peoples, Hmong, and indigenous peoples of Taiwan. Concurrently scheduled with course C159. S/U or letter grading.

**M261. Gender and Music in Cross-Cultural Perspective. (4)** (Same as Gender Studies M261.) Seminar, three hours. Designed to foster in-depth understanding of gender in study of music as culture. Topics range from ethnography of gender and sexuality, (de)codification of messages of resistance, and gender representation to gendered politics via musical production. S/U or letter grading.

**262. Musical Ethnography. (4)** Seminar, three hours; outside study, nine hours. Examination of selected book-length ethnographies, most published in last 10 years, as both literary genre and research procedure. S/U or letter grading.

**263. Perspectives in Popular Music Research. (4)** Seminar, three hours. Investigation of theoretical paradigms, issues, and research models of popular music, with emphasis on world music genres, local/global markets, mass mediation, appropriation and aesthetics of style, ethnographic methods, and impact of popular music studies on ethnomusicology. Letter grading.

**264. Urbanism and Music. (4)** Seminar, three hours; outside study, nine hours. Theoretical and methodological issues in study of city as cultural entity that affects and is affected by music making. S/U or letter grading.

**265. Religion and Music. (4)** Seminar, three hours; outside study, nine hours. Cross-cultural examination of role of musical expression as spiritual medium and as artistic expression in world's religions. S/U or letter grading.

**266. Charles Seeger's Life and Thought. (4)** Seminar, three hours; outside study, nine hours. Charles Seeger's (1886 to 1979) major writings and influence on three fields he helped to found (ethnomusicology, systematic musicology, historical musicology), as well as his interest in applied musicology and American composition in 20th century. S/U or letter grading.

**267. Music and Ecstasy. (4)** Seminar, three hours; outside study, nine hours. Relationship between music and consciousness in different world cultures and role music plays in ecstatic experiences. Phenomena include trance, spirit possession, shamanism, religious ecstasy, mysticism, and artistic inspiration. S/U or letter grading.

**268. Modernity and Musical Experience. (4)** Seminar, three hours; outside study, 10 hours. Limited to graduate students. Examination of possibilities for subject-centered musical ethnography to account for fragmented musical experience in modern world. Consideration of local and world musics in relation to modernity, postmodernity, globality, notions of self and subject, power, and media images. Letter grading.

**C270. Selected Topics in Composition. (4)** Lecture, four hours; outside study, eight hours. Limited to graduate students. Evaluation of important musical concepts and approaches to enable students to develop greater compositional technique and understanding. Ways composers of jazz, European classical, and other musical genres have successfully approached use of extended compositional forms. Examination of way in which world music traditions have interfaced with jazz and other types of music to create new musical languages. Use of concepts, structural paradigms, and inspiration from literature, visual arts, and other sources to develop student compositions. May be repeated once for credit. Concurrently scheduled with course C165. Letter grading.

**271. Seminar: Acoustics of Music. (6)** Seminar, three hours. Requisite: course 170. Selected topics in acoustics, including laboratory methodologies and practical applications. Topics include Western and non-Western instruments, tuning systems, psychoacoustics, and methods of spectral analysis. May be repeated once for credit. S/U or letter grading.

**273. Seminar: Psychology of Music. (6)** Seminar, three hours. Selected topics in psychology of music, including recent findings in brain research, musical perception, learning, cognition, memory, therapy, affect, meaning, and measurement. May be repeated once for credit. S/U or letter grading.

**275. Seminar: Aesthetics of Music. (6)** Seminar, three hours. Specific topics in Western and non-Western aesthetic thought, including value, meaning (semiotics), historical development of theoretical perspectives and critical theory, and interpretation. May be repeated once for credit. S/U or letter grading.

**279. Seminar: Systematic Musicology. (4)** Seminar, three hours. Requisite: course 170. Exploration of specific topics in general field of systematic musicology covering disciplines such as anthropology, acoustics, aesthetics, music perception, philosophy, organology, sociology, and experimental approaches. May be repeated for credit. S/U or letter grading.

**280. Teaching World Music and Music Appreciation. (4)** Seminar, three hours. Preparation: two ethnomusicology courses or concurrent enrollment in course 20A, 20B, or 20C. Designed for ethnomusicology and musicology graduate students. Practical overview of current pedagogical philosophies and texts used in teaching introductory music survey courses, specifically music appreciation and general world music. Letter grading.

**281A-281B. Seminars: Field and Laboratory Methods in Ethnomusicology. (6-6)** Seminar, three hours; laboratory, two hours. Requisites: courses 201, 202. Fieldwork concepts and methods using technical equipment, conducting interviews, dealing with ethical issues, and designing research projects. S/U or letter grading.

**282. Seminar: Analysis. (6)** Seminar, three hours. Requisite: course 180. Designed for graduate ethnomusicology students. Intensive discussion of techniques used in ethnomusicological analysis, including transcription and notation, with emphasis on analysis of musical performance and music events. S/U or letter grading.

**283. Seminar: Study of Musical Instruments (Organology). (6)** Seminar, three hours. Requisites: courses 201, 202. Musical instruments studied in terms of their structures, performance contexts, cultural significance, and patterns of change. S/U or letter grading.

**284. Seminar: Anthropology of Music. (4)** Seminar, three hours. Requisites: courses 201, 202. Analysis of current anthropological paradigms and issues that have major impact on ethnomusicology. S/U or letter grading.

**285. Seminar: Comparative Music Theory. (6)** Seminar, three hours. Comparative study of codified music theories of select cultures—Western and non-Western—considered in themselves and as expressions of their societies. Theory considered as science of music; its place between cultural values and artistic practice in different civilizations. S/U or letter grading.

**C286. Public Ethnomusicology. (4)** Lecture, four hours; outside study, eight hours. Designed for Ethnomusicology majors. How music industry functions and how products are created, marketed, and consumed. Techniques of pure research, basic and theoretical in nature, contrasted with those of applied research, practical and policy-oriented in approach. Concurrently scheduled with course C184. Letter grading.

**287. Seminar: Folk Music. (4)** Seminar, three hours. S/U or letter grading.

**CM288. Music Industry. (4)** (Same as Music CM282 and Musicology CM288.) Lecture, four hours; discussion, one hour; outside study, eight hours. Limited to Ethnomusicology, Music, and Musicology majors. Examination of influence of music industry on way music is created, performed, listened to, evaluated, and used today. Historical approach taken, beginning with

music published in 18th century and continuing through development of audio recordings to MTV and popular music today. Concurrently scheduled with course CM182. Letter grading.

**289. Research Design and Grant Writing in Ethnomusicology. (4)** Seminar, three hours; outside study, nine hours. Design of dissertation research proposal, locating and applying for dissertation fieldwork grants, organizing and presenting advanced academic proposals with sophisticated methods and professional writing skills. S/U or letter grading.

**290. Seminar: Ethnomusicology. (6)** Seminar, three hours. Requisites: courses 20A, 20B, 20C, C200, 201, 202. May be repeated for credit. S/U or letter grading.

**291. Ethnomusicology Colloquium Series. (1)** Research group meeting, one hour. Limited to graduate ethnomusicology students. Introduction to new trends and issues in discipline of ethnomusicology in effort to strengthen and stimulate intellectual community within department. Topics vary from term to term and consist of presentations by guest lecturers, faculty members, and students. May be repeated for credit. S/U grading.

**292A-292Z. Seminars: Special Topics in Ethnomusicology. (4 each)** Seminar, four hours. Designed for graduate students. Utilization of special interests and expertise of regular and visiting faculty; topics of current interest presently offered in ethnomusicology program. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495A. Teaching Apprentice Practicum. (2)** Eight weekly two-hour seminar sessions, plus intensive training session during Fall Quarter registration week. Preparation: appointment as teaching apprentice in Ethnomusicology Department. Required of all new teaching apprentices. Special course dealing with problems and practices of teaching ethnomusicology and systematic musicology at college level. May not be applied toward degree requirements. S/U grading.

**495B. Teaching with Technology. (2)** Seminar, three hours; outside study, three hours. Limited to graduate ethnomusicology students. Training in presentation, spreadsheet, web design, and digitization software, and its application in classroom and in preparation of electronic teaching portfolio. S/U grading.

**596. Directed Individual Studies. (2, 4, or 6)** Tutorial, to be arranged. Only 4 units may be applied toward MA minimum course requirements. S/U or letter grading.

**597. Preparation for Master's Comprehensive Examination or PhD Qualifying Examinations. (2 or 4)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**598. Guidance of MA Thesis. (4, 8, or 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**599. Guidance of PhD Dissertation. (4, 8, or 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

# EUROPEAN LANGUAGES AND TRANSCULTURAL STUDIES

*College of Letters and Science*

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Todd S. Presner, PhD, *Chair*

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Kimberly Jansma, PhD

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Maria (Cisca) F. Brier  
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Patrick J. Wen, PhD

## Overview

The Department of European Languages and Transcultural Studies (ELTS) provides advanced training in the cultural and linguistic traditions of Europe, emphasizes the transcultural relations between countries, while also framing these relations in a much broader global historical context that transcends Europe as a geographic space. This approach to culture and society promises to improve the understanding of history and the challenges of 21st-century globalized existence. Concentrating on the shared European roots is key, as is the goal of complicating the very idea of Europe by underscoring the transcultural and global qualities of this space, especially in terms of colonial and imperial legacies. Today, Europe is a geopolitical space in which thinking about diversity, human rights, and religious tolerance remains important. The ELTS majors and minors include language training, the study of culture, literature, film and media, and a focus on the new applied humanities (digital, environmental, medical, urban) in order to consider how these have altered our relationship to cultural analysis and production. The department also encourages study abroad, internship opportunities, and organize professionalization seminars.

## Undergraduate Study

The department provides advanced training in the cultural and linguistic traditions of Europe, emphasizes the transcultural relations between these countries, while also framing these in a much broader global historical context that transcends Europe as a geographic space.

The department trains students to think critically, to develop writing and research skills, and to understand the power of language to pursue advanced research in a challenging intellectual and globalized world. Students are prepared for graduate school and careers in education, international law and business, the arts, media and journalism, international health organizations, advertising, management consultancy, diplomacy, and publishing.

The various Bachelor of Arts (BA) degrees offered in ELTS share common foundational courses across language traditions and offer students the opportunity to specialize in individual language tracks. The BA in ELTS includes language training, but allows students design an individualized curriculum structured around ELTS offerings; whereas the BA in ELTS

with individual language tracks provides students with a background in Europe and also in the various fields of French, Germanic, and Italian. In French, Germanic (Dutch, German, Yiddish), and Italian, this includes the study of culture, literature, and society, enhancing the understanding of the many facets of European civilization. In Scandinavian and Nordic Studies (Denmark, Finland, Norway, and Sweden), students explore how this region forms a geographic bridge between the American and European continents and a political bridge between Western and Eastern Europe. Together, the degrees offer undergraduate students a broad, interdisciplinary understanding of Europe, with a robust knowledge of the cultures and histories of this region from a global, transdisciplinary, and transcultural perspective.

Students considering a major or minor in the department should consult with the departmental undergraduate adviser as soon as possible in their university career in order to select courses to fulfill major or minor requirements. The approved list of courses for each category of major or minor requirements is available in the department office, 212 Royce Hall, and on the department website.

## Undergraduate Policies

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in Danish, Dutch, Finnish, French, German, Italian, Norwegian, Swedish, and Yiddish grammar and/or composition.

## Graduate Study

The graduate programs offer the Master of Arts (MA) degree and the Doctor of Philosophy (PhD) degree in French and Francophone Studies, Germanic Languages, and Italian; and an MA only in Scandinavian. Admission to graduate programs is prioritized for PhD degree applicants. They comprise advanced training in the various fields, as well as in literary criticism, cultural analysis, film studies, the applied humanities, and theory.

## Undergraduate Majors

### European Languages and Transcultural Studies BA

### Learning Outcomes

The European Languages and Transcultural Studies major has the following learning outcomes:

- Demonstrated advanced proficiency in one or more language offered in the department
- Demonstrated proficiency in one of the areas of the experimental humanities (digital, environmental, medical, and urban)
- Demonstrated deep understanding of European culture and history, including in a global context
- Ability to interrogate, analyze, and discuss literary and filmic production
- Evidence of strong oral and writing skills



## Entry to the Major

### Transfer Students

Transfer applicants to the European Language and Transcultural Studies major with 90 or more units must complete the following introductory courses prior to admission to UCLA: completion of intermediate level of Danish, Dutch, Finnish, French, German, Italian, Norwegian, Swedish, or Yiddish, and any one course on European literature, culture, film, or media.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* one course from French 6, German 6, Italian 6, Scandinavian 6, or equivalent; one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W; one *Experimental Humanities (Digital, Environmental, Medical, and Urban)* course selected from *Digital*: Comparative Literature 1E, Digital Humanities 30, *Environmental*: English M30, *Medical*: Ancient Near East 14W, Ecology and Evolutionary Biology 17, History 3D, Honors Collegium 1, 26, Molecular Cell and Developmental Biology 60, Study of Religion 55, *Urban*: German 61A.

### The Major

*Required:* One course selected from three of the following four areas:

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 114B, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 156, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 113 through 117, 118SL, 154, 155, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian C131, 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, 157, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

*Required Elective Courses:* Six courses selected from European Languages and Transcultural Studies 100 through 180, 191, French 100 through 169, German 104 through 175, Italian 100 through M158, or Scandinavian C131 through C185.

During their senior year, students must also take European Language and Transcultural Studies 187 in which they complete a capstone senior thesis.

## Policies

### The Major

Student may apply no more than two courses or 8 units from other departments. Approval for outside courses must be petitioned with the undergraduate adviser of the department. Students may apply no more than 4 units of European Languages and Transcultural Studies 195, 197, and 199 as a substitution for one elective course. Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the major.

## European Languages and Transcultural Studies with French and Francophone BA

### Learning Outcomes

The European Languages and Transcultural Studies with French and Francophone major has the following learning outcomes:

- Demonstrated advanced proficiency in French
- Demonstrated proficiency in one of the areas of the experimental humanities (digital, environmental, medical, and urban)
- Demonstrated deep understanding of European culture and history, including in a global context, with a particular expertise in French
- Ability to interrogate, analyze, and discuss literary and filmic production
- Evidence of strong oral and writing skills

## Entry to the Major

### Transfer Students

Transfer applicants to the European Languages and Transcultural Studies with French and Francophone major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of French and any one course on European literature, culture, film, or media.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* French 6, or equivalent; one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, 60W; one *Experimental Humanities (Digital, Environmental, Medical, and Urban)* course selected from *Digital*: Comparative Literature 1E, Digital Humanities 30, *Environmental*: English M30, *Medical*: Ancient Near East 14W, Ecology and Evolutionary Biology 17, History 3D, Honors Collegium 1, 26, Molec-

ular Cell and Developmental Biology 60, Study of Religion 55, *Urban*: German 61A.

## The Major

*Required:* advanced language course, three area courses, five elective courses, and a capstone senior thesis.

*Advanced Language requirement:* French 100 or 101.

One course selected from three of the following four areas (total of three courses):

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 114B, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 156, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 113 through 117, 118SL, 154, 155, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian C131, 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, 157, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

*Required Elective Courses:* Three courses selected from French 100 through 169, and any two courses selected from European Languages and Transcultural Studies 100 through 180, 191, French 100 through 169, German 104 through 175, Italian 100 through M158, or Scandinavian C131 through C185.

In addition to the advanced language requirement, students are required to complete a minimum of three upper-division courses in the target language from the required and elective sequences.

During their senior year, students must also take European Language and Transcultural Studies 187 in which they complete a capstone senior thesis.

## Policies

### The Major

Student may apply no more than two courses or 8 units from other departments. Approval for outside courses must be petitioned with the undergraduate adviser of the department. Students may apply no more than 4 units of European Languages and Transcultural Studies 195, 197, and 199 as a substitution for one elective course. Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the major.

## European Languages and Transcultural Studies with German BA

### Learning Outcomes

The European Languages and Transcultural Studies with German major has the following learning outcomes:

- Demonstrated advanced proficiency in German
- Demonstrated proficiency in one of the areas of the experimental humanities (digital, environmental, medical, and urban)
- Demonstrated deep understanding of European culture and history, including in a global context, with a particular expertise in German
- Ability to interrogate, analyze, and discuss literary and filmic production
- Evidence of strong oral and writing skills

### Entry to the Major

#### Transfer Students

Transfer applicants to the European Languages and Transcultural Studies with German major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of German, and any one course in European literature, culture, film, or media.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* German 6, or equivalent; one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W; one *Experimental Humanities (Digital, Environmental, Medical, and Urban)* course selected from *Digital:* Comparative Literature 1E, Digital Humanities 30, *Environmental:* English M30, *Medical:* Ancient Near East 14W, Ecology and Evolutionary Biology 17, History 3D, Honors Collegium 1, 26, Molecular Cell and Developmental Biology 60, Study of Religion 55, *Urban:* German 61A.

Students who have completed one year of college-level German language courses should enroll in course 4. Students who are in doubt as to their level of language proficiency or who are native speakers should consult with the language program supervisor.

#### The Major

*Required:* advanced language course, three area courses, five elective courses, and a capstone senior thesis.

*Advanced language requirement:* German 152 or 153

One course selected from three of the following four areas (total of three courses):

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170,

173, 174, Italian 103A, 103B, 110, 113, 114B, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 156, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 113 through 117, 118SL, 154, 155, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian C131, 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, 157, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

*Required Elective Courses:* Three courses selected from German 104 through 175, and any two courses selected from European Languages and Transcultural Studies 100 through 180, 191, French 100 through 169, German 104 through 175, Italian 100 through M158, or Scandinavian C131 through C185.

In addition to the advanced language requirement, students are required to complete a minimum of three upper-division courses in the target language from the required and elective sequences.

During their senior year, students must also take European Language and Transcultural Studies 187 in which they complete a capstone senior thesis.

### Policies

#### The Major

Student may apply no more than two courses or 8 units from other departments. Approval for outside courses must be petitioned with the undergraduate adviser of the department. Students may apply no more than 4 units of European Languages and Transcultural Studies 195, 197, and 199 as a substitution for one elective course. Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the major.

## European Languages and Transcultural Studies with Italian BA

### Learning Outcomes

The European Languages and Transcultural Studies with Italian major has the following learning outcomes:

- Demonstrated advanced proficiency in Italian
- Demonstrated proficiency in one of the areas of the experimental humanities (digital, environmental, medical, and urban)

- Demonstrated deep understanding of European culture and history, including in a global context, with a particular expertise in Italy
- Ability to interrogate, analyze, and discuss literary and filmic production
- Evidence of strong oral and writing skills

### Entry to the Major

#### Transfer Students

Transfer applicants to the European Languages and Transcultural Studies with Italian major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of Italian, and any one course on European literature, culture, film, or media.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Italian 6, or equivalent; one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W; one *Experimental Humanities (Digital, Environmental, Medical, and Urban)* course selected from *Digital:* Comparative Literature 1E, Digital Humanities 30, *Environmental:* English M30, *Medical:* Ancient Near East 14W, Ecology and Evolutionary Biology 17, History 3D, Honors Collegium 1, 26, Molecular Cell and Developmental Biology 60, Study of Religion 55, *Urban:* German 61A.

#### The Major

*Required:* advanced language course, three area courses, five elective courses, and a capstone senior thesis.

*Advanced language requirement:* Italian 100.

One course selected from three of the following four areas (total of three courses):

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 114B, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 156, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 113 through 117, 118SL, 154, 155, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian C131, 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, 157, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Trans-

cultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

**Required Elective Courses:** Three courses Selected from Italian 102A through M158, and any two courses selected from European Languages and Transcultural Studies 100 through 180, 191, French 100 through 169, German 104 through 175, Italian 102A through M158, or Scandinavian C131 through C185.

In addition to the advanced language requirement, students are required to complete a minimum of three upper-division courses in the target language from the required and elective sequences.

During their senior year, students must also take European Language and Transcultural Studies 187 in which they complete a capstone senior thesis.

## Policies

### The Major

Student may apply no more than two courses or 8 units from other departments. Approval for outside courses must be petitioned with the undergraduate adviser of the department. Students may apply no more than 4 units of European Languages and Transcultural Studies 195, 197, and 199 as a substitution for one elective course. Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the major.

## European Languages and Transcultural Studies with Scandinavian BA

### Learning Outcomes

The European Languages and Transcultural Studies with Scandinavian major has the following learning outcomes:

- Demonstrated advanced proficiency in a Scandinavian language
- Demonstrated proficiency on one of the areas of the experimental humanities (digital, environmental, medical, and urban)
- Demonstrated deep understanding of European culture and history, including in a global context, with a particular expertise in the Scandinavian region
- Ability to interrogate, analyze, and discuss literary and filmic production
- Evidence of strong oral and writing skills

### Entry to the Major

#### Transfer Students

Transfer applicants to the European Languages and Transcultural Studies with Scandinavian major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of either Swedish, Norwegian, or Danish, and any one course on European literature, culture, film, or media.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

**Required:** Scandinavian 6, or equivalent; one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W; one *Experimental Humanities (Digital, Environmental, Medical, and Urban)* course selected from *Digital: Comparative Literature* 1E, *Digital Humanities* 30, *Environmental: English* M30, *Medical: Ancient Near East* 14W, *Ecology and Evolutionary Biology* 17, *History* 3D, *Honors Collegium* 1, 26, *Molecular Cell and Developmental Biology* 60, *Study of Religion* 55, *Urban: German* 61A.

### The Major

**Required:** One course selected from three of the following four areas (total of three courses):

**European Literature:** French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 157, 172A, C180, or C185.

**European Culture:** European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 113 through 117, 118SL, 154, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

**European Film and Media:** French 141, 142, German 103, 104, Italian 121, or Scandinavian 161 through 167.

**Experimental Humanities:** Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

**Required Elective Courses:** Four courses selected from Scandinavian C131 through C185, and any two courses selected from European Languages and Transcultural Studies 100 through 180, 191, French 100 through 169, German 104 through 175, Italian 100 through M158, or Scandinavian C131 through C185.

During their senior year, students must also take European Language and Transcultural Studies 187 in which they complete a capstone senior thesis.

## Policies

### The Major

Student may apply no more than two courses or 8 units from other departments. Approval for outside courses must be petitioned with the undergraduate adviser of the department. Students may apply no more than 4 units of European Languages and Transcultural Studies

195, 197, and 199 as a substitution for one elective course. Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the major.

Students who are interested in Danish, Finnish, and Norwegian language instruction may enroll in these courses at other UC campuses through distance learning, and may petition to apply these courses to the major requirements.

## Nordic Studies BA

### Capstone Major

The Nordic Studies major is a designated capstone major. Under the guidance of faculty members, students are required to devise, research, and complete either a substantial research paper, film/video, or a website that reflects significant engagement with a challenging question in the realm of Nordic studies. Through their capstone work, all students are expected to demonstrate their skills in articulating a clear and sophisticated research question, devising a realizable set of research goals, deploy their advanced knowledge of a Nordic language to access target language research materials and incorporate them into the research corpus, devise an appropriate modality for the final project, present a concise engaging public presentation of their research and respond to questions, and archive their project in an appropriate form.

### Learning Outcomes

The Nordic Studies major has the following learning outcomes:

- Demonstrated command of the linguistic and cultural diversity of the Nordic region
- Demonstrated command of the economics, politics, environments, and histories of the Nordic region
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Demonstrated understanding of the role of the Nordic region in global context, and the impact of global phenomena on the region
- Identification, evaluation, and analysis of appropriate primary sources
- Working knowledge of scholarly discourse from broad range of disciplines
- Conception and execution of a project that identifies and engages with a specialized topic
- Engagement with peers through presentation, discussion, and critique of student work

## Requirements

### The Major

**Required:** Nine courses from the following five tracks, with at least one course in four of the tracks: (1) *early Nordic literatures and cultures*—Scandinavian C131, C133A, 134, C137, 138, (2) *theory, genres, and authors*—Scandinavian C141A, 141C, 142A, 143C, C145A, C145B, C146A, 147A, C147B, (3) *literary periods*—Scandinavian C155, 156, 157, (4) *Scandinavian cinema*—Scandinavian 161, C163A, C166A, C166C, (5) *cultural studies*—Scandina-



vian C171, 173A, C174A, 174B, C180; and one senior capstone course (Scandinavian 199) under the direction of a faculty member.

As an option, four upper-division courses in a related field may be taken if approved in advanced by the undergraduate adviser. In general, the courses must include significant content related to the Nordic region.

## Undergraduate Minors

### European Languages and Transcultural Studies Minor

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (8 units):* One course selected from French 6, German 6, Italian 6, Scandinavian 6, or equivalent; and one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W.

*Required Upper-Division Courses (20 units):* Three upper-division courses in European literature, culture, film, or media selected from three of the following four areas:

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 115, 116, 118SL, 154, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

*Upper-Division Electives:* Two elective courses (minimum 8 units) selected from European Languages and Transcultural Studies 100 through 180, 191, French 100 through 169, German 104 through 175, Italian 100 through M158, or Scandinavian C131 through C185.

#### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units

applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## European Languages and Transcultural Studies with French and Francophone Minor

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (8 units):* French 6 or equivalent; and one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W.

*Required Upper-Division Courses (20 units):* Three upper-division courses in European literature, culture, film, or media selected from three of the following four areas:

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 115, 116, 118SL, 154, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

*Upper-Division Electives:* Two upper-division elective courses (minimum 8 units) selected from French.

One upper-division required course must be taught in French.

#### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## European Languages and Transcultural Studies with German Minor

#### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (8 units):* German 6 or equivalent; and one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W.

*Required Upper-Division Courses (20 units):* Three upper-division courses in European literature, culture, film, or media selected from three of the following four areas:

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 115, 116, 118SL, 154, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

*Upper-Division Electives:* Two upper-division elective courses (minimum 8 units) selected from German.

One upper-division required course must be taught in German.

#### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.



## European Languages and Transcultural Studies with Italian Minor

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Lower-Division Courses (8 units):* Italian 6 or equivalent; and one *European Literature, Language, Culture, or Film and Media* course selected from French 12, 14, 14W, 16, 41, 60, German 50B, 56, 59, Italian 42A, 42B, 42C, 46, 50A, 50B, Scandinavian 40, 40W, 50, 50W, or 60W.

*Required Upper-Division Courses (20 units):* Three upper-division courses in European literature, culture, film, or media selected from three of the following four areas:

*European Literature:* French 115 through 121, 136, 163, 164, 166, German 110, 112, 158, 170, 173, 174, Italian 103A, 103B, 110, 113, 120, 140, 150, Scandinavian C133A, 134, C141A, 141C, 143A, 143C, C145A, C145B, C146A, 147A, C147B, 147C, 154, C155, 157, 172A, C180, or C185.

*European Culture:* European Languages and Transcultural Studies 112, French 121, 130, 137, 138, 139, 160, 167, 169, German 102, 109, 115, 116, 118SL, 154, 159, 175, Italian 102A, 102B, 102C, 116A, 116B, 122 through 125, 152, M158, Scandinavian 133C, 134, C137, 138, 142A, C171, 172A, 173A, C174A, or 174B.

*European Film and Media:* French 141, 142, German 103, 104, Italian 121, or Scandinavian 161 through 167.

*Experimental Humanities:* Community Engagement and Social Change 100XP, 172XP, Comparative Literature 180, 180SL, Classics 148, Digital Humanities 101 through 151, English 118E, M118F, European Languages and Transcultural Studies C101XP, Food Studies M176XP, Italian 124, or Public Affairs M176XP.

*Upper-Division Electives:* Two upper-division elective courses (minimum 8 units) selected from Italian.

One upper-division required course must be taught in Italian.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Scandinavian Minor

### Admission

To enter the Scandinavian minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Courses (28 units):* Any seven Scandinavian courses, two of which may be lower-division courses selected from Scandinavian 1 through 50.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### French and Francophone Studies MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Germanic Languages MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Italian MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Scandinavian MA

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Dutch

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**103A-103B. Elementary Dutch. (4-4)** Lecture, four hours; language laboratory. Course 103A is requisite to 103B. Introduction to standard language of Netherlands and one of three standard languages of Belgium. Practice in grammar, listening, speaking, reading, and writing. P/NP or letter grading.

**103C. Intermediate Dutch. (4)** Lecture, four hours; language laboratory. Requisite: course 103B. Grammatical exercises, conversation, reading and analysis of simple texts. P/NP or letter grading.

**104A-104B. Accelerated Dutch. (6-6)** Lecture, four hours; discussion, one hour; laboratory, two hours. Covers material in courses 103A, 103B, 103C in two terms rather than three. Letter grading.

**113. Modern Dutch and Flemish Literature in Translation. (4)** Lecture, three hours. Readings and analysis of works by selected authors of Netherlands and northern (Flemish) Belgium such as Boon, Claus, Couperus, Hermans, Mulisch, Multatuli, and Reve and selected poets such as Campert, Gezelle, Gorter, Kloos, Lucebert, Nijhoff, Van Ostaïjen, and Vroman. Letter grading.

**120. Introduction to Dutch Studies. (4)** Lecture, three hours. Brief review of Dutch grammar. Reading and discussion of selections from contemporary Dutch literature, contemporary Dutch literary criticism, and modern Dutch linguistics. Emphasis on developing reading skill and on acquiring familiarity with and appreciation of scope of 20th-century Neerlandistiek. P/NP or letter grading.

**131. Introduction to Modern Dutch Literature.** (4) Discussion, three hours. Requisite: course 103B or 120. Selected works of literature of Netherlands and northern (Flemish) Belgium from mid-1850s to present, including novels by such writers as Multatuli, Couperus, Hermans, Mulisch, and Reve and poetry by such groups as symbolist Beweging van Tachtig and post-War Beweging van Vijftig. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**199. Directed Research or Senior Project in Dutch. (4)** Tutorial, three hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**596. Directed Individual Study or Research in Dutch. (4)** Tutorial, to be arranged with faculty member who directs study or research (course section to be identified by two-letter code using initials of sponsoring instructor—see department for ID number). May be repeated once. S/U grading.

**597. Preparation for PhD Qualifying Examinations. (4)** Tutorial, to be arranged with faculty member who directs study (see department for ID number). S/U grading.

## European Languages and Transcultural Studies

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Copenhagen and Nordic Model of Sustainability. (5)** Lecture, three hours. Introductory exploration of field of urban humanities before backdrop of Nordic model of sustainability through case study of city of Copenhagen. Investigation of how city's human-centered design, planning, and general sustainability are reflected in Scandinavian cultural traditions in architecture, design, film, history, literature, television, urban planning, and beyond. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**C101XP. Between Los Angeles and Europe: New Approaches to Transatlantic European Studies. (4)** Lecture, three hours; community-engaged projects, three hours. Examination of rich migration history between Los Angeles and Europe with view to German-speaking world. Overview of transatlantic cultural, literary, and historical studies back to colonial era. Targeted investigation of complex transatlantic relations between Angelenos and German immigrants during 20th century, including World War II. Students apply newly acquired cultural, historical, and political knowledge to current transatlantic conversations. Offers innovative, scholarly, and praxis-oriented approaches to transatlantic European studies through integration of lesson into community-engaged projects. Illumination of limits of monolingual or state-centric configurations of disciplinary knowledge in addition to exemplifying interdisciplinary, multilingual, and transnational studies of Europe, in general, and Germany, in particular. Concurrently scheduled with course C201XP. P/NP or letter grading.

**103. Topics in Medical Humanities. (4)** Lecture, three hours. Exploration of selected topics in interdisciplinary field of medical humanities, which seeks to examine how arts, humanities, and social sciences can be brought into productive dialog with medical discourse, education, and praxis. Taught in English. May be repeated for credit. P/NP or letter grading.

**112. Medieval Foundations of European Civilization. (4)** (Formerly numbered French 112.) Lecture, three hours. Introduction to and tracing of genealogy of some of most important medieval concepts and institutions, such as empire and state, religion, university, architecture and visual arts, identity, class, race, and sexuality, foundational for European civilization. Exploration of birth of modern nations from their medieval foundation. Examination of cultural production: how and why certain values were created and then passed on. P/NP or letter grading.

**140. European Crime Novel. (4)** Lecture, three hours. Focus on Italian crime novel, but in larger context of European crime fiction. Readings include some of most important and interesting contemporary authors of Italian detective fiction—Camilleri, Carlotto, de Giovanni, Pastor—to see what crime fiction can say about nation in age of globalization, and about Italy in European Union. P/NP or letter grading.

**150. European Folk and Fairy Tales. (4)** Lecture, three hours. Study of characteristics, history, and scholarship of folktale/fairy tale genre in European contexts. Comparison, analysis, and interpretation of tales. Instruction and texts in English. P/NP or letter grading.

**151. Valkyries and Dragonslayers: Völsung/Nibelung Tradition. (4)** Lecture, three hours. Study of medieval Norse and German traditions of Völsung and Nibelung families (*Eddas*, sagas, *Nibelungenlied*), as well as modern versions in various media (e.g., Wagner's Ring Cycle, Fritz Lang's *Nibelungen* films), in their historic and cultural contexts. Instruction and texts in English. P/NP or letter grading.

**167. European Identities in Classic Hollywood and Los Angeles, 1924–1950. (4)** (Formerly numbered Scandinavian 167.) Lecture, three hours. Exploration of myriad European identities within classic Hollywood studio system and within city of Los Angeles as site of cultural production. In-depth analyses and historicizing of impact of European émigrés and exiles on American cinema, especially development of film noir as key genre. Discussion of European identities including film artists from France (Maurice Chevalier, René Clair, Jean Renoir), Germany and Austria (Fritz Lang, Ernst Lubitsch, Robert Siodmak, Billy Wilder), Italy (Frank Capra), and Sweden (Ingrid Bergman,

Greta Garbo, Warner Oland, Victor Sjöström). Includes compelling urban humanities component. Investigation of history of Los Angeles as growing urban metropolis that emerges as key locus of American and global mass media culture. Examination of how films and secondary scholarship further reveal how inextricably Europeans in Los Angeles—including artistic and intellectual exiles from Hitler's Nazi-occupied Europe in 1930s and 1940s—shaped this key 20th-century art form. P/NP or letter grading.

**187. Capstone Seminar. (4)** Seminar, three hours. Required of all European Languages and Transcultural Studies majors. Students engage in analysis, critique, interpretation, historical research, and contextualization with eye to culminating project. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminar. (4)** Seminar, three hours. Research seminars on topics to be announced each term. Topics include major writers, genres, cultural movements, or theoretical practices. Reading, discussion, and development of culminating project. May be repeated for credit. P/NP or letter grading.

## Graduate Courses

**200. Graduate Methodology and Professionalization Seminar. (4)** Seminar, three hours. Covers wide array of topics related to methodologies, concepts, and theories of transcultural and transnational literary and cultural studies in European context. Taught in English. S/U or letter grading.

**C201XP. Between Los Angeles and Europe: New Approaches to Transatlantic European Studies. (4)** Lecture, three hours; community-engaged projects, three hours. Examination of rich migration history between Los Angeles and Europe with view to German-speaking world. Overview of transatlantic cultural, literary, and historical studies back to colonial era. Targeted investigation of complex transatlantic relations between Angelenos and German immigrants during 20th century, including World War II. Students apply newly acquired cultural, historical, and political knowledge to current transatlantic conversations. Offers innovative, scholarly, and praxis-oriented approaches to transatlantic European studies through integration of lesson into community-engaged projects. Illumination of limits of monolingual or state-centric configurations of disciplinary knowledge in addition to exemplifying interdisciplinary, multilingual, and transnational studies of Europe, in general, and Germany, in particular. Concurrently scheduled with course C101XP. P/NP or letter grading.

**202. Studies in History of Ideas. (4)** Seminar, three hours. Exploration of key concept or idea in European thought, examined transhistorically and/or transnationally. Taught in English. May be repeated for credit. S/U or letter grading.

**203. Topics in Medical Humanities. (4)** Seminar, three hours. Exploration of selected topic in interdisciplinary field of medical humanities, which seeks to examine how arts, humanities, and social sciences can be brought into productive dialog with medical discourse, education, and praxis. Taught in English. May be repeated for credit. S/U or letter grading.

**204. Studies in Translation: Theory, Method, Practice. (4)** Seminar, three hours. Introduction to principles of literary translation and techniques of literary analysis; practice of translation (to and from English);

readings and research in translation studies, philology, linguistics, cultural studies, media, and technology. Taught in English. May be repeated for credit. S/U or letter grading.

**205. Major Works and Figures in Transnational Context.** (4) Seminar, three hours. Exploration of major European figure or work, where notion of European may be understood broadly. Author, artist, or work selected by instructor and placed in broad transnational and/or transhistorical context. Taught in English. May be repeated for credit. S/U or letter grading.

**206. Topics in Cultural Studies.** (4) Seminar, three hours. In-depth exploration of major historical event through its representation in cultural production. Readings include cultural texts, documentary or archival material, essays on politics, and aesthetics, memory, urban space, architecture. Development of techniques in contextualized literary analysis. Taught in English. May be repeated for credit. S/U or letter grading.

207. Topics in Literary Studies. (4) Seminar, three hours. Conceptual, thematic, or problem-driven approach to questions in literary studies, with emphasis on both establishing and interrogating trends, debates, assumptions. Taught in English. May be repeated for credit. S/U or letter grading.

**208. Topics in Film, Media, and Visual Culture.** (4) Seminar, three hours. National or transnational exploration of movements, theories, questions, and problems in film, media, and visual cultures. Taught in English. May be repeated for credit. S/U or letter grading.

**495. Second Language Teaching in Context.** (4) Seminar, three hours. Designed for graduate students. Theory and practice of language teaching. S/U grading.

## French

### Lower-Division Courses

**1. Elementary French.** (4) Lecture, five hours. P/NP or letter grading.

**2. Elementary French.** (4) Lecture, five hours. Enforced requisite: course 1 with grade of C– or better. P/NP or letter grading.

**3. Elementary French.** (4) Lecture, five hours. Enforced requisite: course 2 with grade of C– or better. P/NP or letter grading.

**4. Intermediate French.** (4) Lecture, four hours. Enforced requisite: course 3 with grade of C– or better. P/NP or letter grading.

**5. Intermediate French.** (4) Lecture, four hours. Enforced requisite: course 4 with grade of C– or better. P/NP or letter grading.

**6. Intermediate French.** (4) Lecture, four hours. Enforced requisite: course 5 with grade of C– or better. P/NP or letter grading.

**8. Intensive First-Year French.** (12) Lecture, 15 hours. All-in-French intensive language program equivalent to first year of college French and designed to develop basic language skills. Additional work in language and media laboratory required. Offered in summer only. P/NP or letter grading.

9. Intensive Second-Year French. (8) Lecture, 10 hours; media laboratory, three hours. Enforced requisite: course 3. Intensive course equivalent to first two terms of intermediate French and designed to improve proficiency in reading, writing, and speaking. Offered in summer only. P/NP or letter grading.

**12. Introduction to Study of French and Francophone Literature.** (5) Lecture, two hours; discussion, one hour. Enforced requisite: course 6. Principles of literary analysis as applied to selected texts in poetry, theater, and prose by French and Francophone writers. P/NP or letter grading.

**14. Introduction to French Culture and Civilization in English.** (5) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 14W. Study of contemporary French institutions and issues in cultural, political, and socioeconomic realms. P/NP or letter grading.

**14W. Introduction to French Culture and Civilization in English.** (5) Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 14. Study of contemporary French institutions and issues in cultural, political, and socioeconomic realms. Satisfies Writing II requirement. Letter grading.

**16. Society and Self in Early Modern France.** (5) Lecture, three hours; discussion, one hour. Role of religion, politics, and sociability in constructing self and understanding its relation with society in early modern France. Development of students' critical thought and knowledge of French and European intellectual tradition. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**41. French Cinema and Culture.** (5) Lecture/screenings, five hours; discussion, one hour. Introduction to French culture and literature through study of films of cultural and literary significance. P/NP or letter grading.

**60. French and Francophone Novel.** (5) Lecture, three hours; discussion, one hour. Study of literary masterpieces produced by writers from France and Francophone world (Canada, Africa, Caribbean, etc.) from 17th to early 21st century. P/NP or letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Written Expression: Techniques of Description and Narration.** (5) Lecture, three hours. Requisite: course 6. Writing assignments follow close analysis of relevant texts, film, and related grammatical structures. Examination of vocabulary and structures associated with descriptive writing and French verb tense system required for narration. P/NP or letter grading.

**101. Advanced Expository Writing: Techniques of Argumentation.** (4) Lecture, three hours. Requisite: course 100. Study of rhetorical devices and revision of related grammatical structures. Writing assignments follow analysis of relevant texts. P/NP or letter grading.

**104. Theory and Correction of Diction.** (4) Lecture, three hours. Enforced requisite: course 6. Study of individual sounds (vowels, consonants, and semi-vowels), including rhythm, intonation, and phrasing, and of learning sound—spelling correspondences to help sight read accurately. Thorough study of symbols of International Phonetic Alphabet (IPA) to give students tools to work on pronunciation systematically. Standard French serves as model, with examination of pronunciation changes and various dialects that are spoken in Francophone world to improve listening comprehension and pronunciation. P/NP or letter grading.

**105. Structure of French.** (4) Lecture, three hours. Prior background in linguistics not required. Introduction to linguistic analysis of French in areas of phonology, morphology, syntax, and language variation. P/NP or letter grading.

**107. Advanced Oral Expression.** (4) Lecture, three hours. Requisite: course 6. Discussion and analysis of current events and sociocultural issues; techniques of argumentation. P/NP or letter grading.

**108. Advanced Practical Translation.** (4) Lecture, three hours. Requisites: courses 100, 101. Translation of literary, sociocultural, and journalistic texts. May include editorials, polemical issues, film subtitles, biography and interview, formal and informal reporting, advertising and idiomatic language. Comparative stylistics of translation. P/NP or letter grading.

**109. French for Professional Purposes: Language and Communication in Professional Environment.** (4) Lecture, three hours. Requisite: course 6. Oral and written communication in professional environment, including job search (résumé and cover letter), correspondence (professional letter and e-mail), and how to understand and negotiate work life in French-speaking company. P/NP or letter grading.

**114A. Survey of French Literature: Medieval and Renaissance Literature.** (5) Lecture, three hours. Requisite: course 12. Masterpieces of medieval and Renaissance literature, including examples of epic (*La Chanson de Roland*), romance (Chrétien de Troyes' *Yvain*), and Renaissance prose and poetry (including Marot, Du Bellay, Ronsard, Rabelais, Marguerite de Navarre, and Montaigne). P/NP or letter grading.

**114B. Survey of French Literature: 17th and 18 Centuries.** (5) Lecture, three hours. Requisite: course 12. Study of selections from major works of classicism and Enlightenment, including those by Racine, Pascal, La Fayette, La Fontaine, Laclous, Diderot, Voltaire, and Rousseau. P/NP or letter grading.

**114C. Survey of French Literature: 19th and 20th Centuries.** (5) Lecture, three hours. Requisite: course 12. Study of major literary movements and writers of period, including works by Hugo, Balzac, Stendhal, Flaubert, Zola, Gide, Proust, Sartre, Robbe-Grillet, and Duras. P/NP or letter grading.

**115. Studies in Medieval French Culture and Literature.** (4) Lecture, three hours. Enforced requisite: course 5. Taught in French. Study of medieval French culture and literature, including lyric poetry and narrative romance, history of medieval warfare, comedy, and class structures. May be repeated for credit with topic change. P/NP or letter grading.

**116. Studies in Renaissance French Culture and Literature.** (4) Lecture, three hours. Taught in French. Study of Renaissance French culture and literature, including la Pléiade and 16th-century poetry, linguistic and poetic revolution, novel and early prose, and late French humanism. May be repeated for credit with topic change. P/NP or letter grading.

**117. Studies in 17th-Century French Culture and Literature.** (4) Lecture, three hours. Enforced requisite: course 5. Taught in French. Study of 17th-century French culture and literature, including theater, philosophers, moralists, novelists, and cultural, political, social, religious, and courtly aspects. May be repeated for credit with topic change. P/NP or letter grading.

**118. Studies in 18th-Century French Culture and Literature.** (4) Lecture, three hours. Taught in French. Study of 18th-century French culture and literature, including satire, novel, theater, philosophers, and theoretical writings. May be repeated for credit with topic change. P/NP or letter grading.

**119. Studies in 19th-Century French Culture and Literature.** (4) Lecture, three hours. Enforced requisite: course 5. Taught in French. Study of 19th-century French culture and literature, including Romanticism, generation of 1848, naturalism and symbolism, and genres and trends from 1885 through World War I. May be repeated for credit with topic change. P/NP or letter grading.

**120. Studies in 20th-Century French Culture and Literature.** (4) Lecture, three hours. Taught in French. Study of 20th-century French culture and literature, including early 20th-century writers, surrealism, literature from 1915 to 1945, post-World War II literature,

existentialism, new novel, theater, and poetry. May be repeated for credit with topic change. P/NP or letter grading.

**121. Studies in Francophone Cultures and Literatures. (4)** Lecture, three hours. Enforced requisite: course 5. Taught in French. Study of Francophone cultures and literatures, including works by poets, playwrights, and novelists from Caribbean, North Africa, Quebec, and sub-Saharan Africa, immigrant narratives, and colonialism and postcolonial studies. May be repeated for credit with topic change. P/NP or letter grading.

**130. Contemporary French and Francophone Cultures. (4)** Lecture, three hours. Requisite: course 12 or 100. Taught in French. Study of contemporary France and Francophone world (Africa, Asia, Caribbean, Quebec), government, institutions, and cultural, economic, social, and political issues. May be repeated for credit with topic change. Letter grading.

**133. French and Francophone Short Story. (4)** Lecture, three hours. Taught in French. Survey of short fiction forms in France and Francophone world. P/NP or letter grading.

**135. Eco-Citizenship: Encounters with Eco-Citizens. (4)** Lecture, three hours. Enforced requisite: course 6. Taught in French. Not open to students with credit for course 165. Exploration of what eco-citizen is, what it means to be eco-citizen, if we are eco-citizens, and why. Answers to these questions by studying sustainability in France. Study of French cities (i.e., Nantes) that act as real-life laboratories. Using reading, videos, and podcasts, students make observations and draw some conclusions regarding concept of eco-citizenship. Study of some theories on eco-citizenship developed by French thinkers. Exploration of how French citizens aspire to be eco-citizens. Students meet with them formally and informally through readings, videos, and virtual meetings. Examination of several experiments put in place by these cities, and assessment of whether these are successes or failures. Comparison and contrast of actions to protect environment developed in Los Angeles and at UCLA. P/NP or letter grading.

**136. French and Francophone Autobiography. (4)** Lecture, three hours. Taught in French. Rhetoric of genre and its relation to broad questions of identity, gender, race, and class. May be repeated for credit with topic change. P/NP or letter grading.

**137. French and Francophone Intellectual History. (4)** Lecture, three hours. Requisite: course 12 or 100. Taught in French. Exploration of themes that address particular problem of French literature, civilization, or ideas. May be repeated for credit with topic change. P/NP or letter grading.

**138. Contemporary French Theory. (4)** Lecture, three hours. Requisite: course 12 or 100. Taught in French. Study of French theorists (Barthes, Baudrillard, Cixous, Derrida, Foucault, Irigaray) and major concepts in contemporary French thought, with attention to its influence on and application to literary and non-literary texts. May be repeated for credit with topic change. P/NP or letter grading.

**139. Paris: Study of French Capital. (4)** Lecture, three hours. Enforced requisite: course 5. Taught in French. Textual and visual exploration of historical and imaginary (re)constructions of Paris, beginning with its earliest history and gradual formation of this great urban complex in maps from Renaissance to 20th century. Study of city's streets and quarters, traffic and transportation, multiple layers of past, present, and future, and *flâneurs* and insurrectionists through wide range of literary and critical texts. Readings cover mainly 19th and 20th centuries—Honoré de Balzac, Charles Baudelaire, Emile Zola, Marcel Proust, Louis-Ferdinand Céline, and others. P/NP or letter grading.

**140. Nantes: Shape of City. (4)** Lecture, three hours. Enforced requisite: course 6. Taught in French. Not open for credit to students with credit for course 170. Metaphorical and virtual exploration of city of Nantes in western France to discover rich culture. Study of French government's repressive measures against Breton culture, and especially Breton language. Examination of Nantes's dark part, i.e. 18th-century slave trade. Study of how people today made it their mis-

sion to recover this repressed memory, and to create connections with African countries, victims of slave trade. Examination of Nantes's industrial part and how in recent years old and abandoned industrial sites are transformed into inclusive spaces such as village *solidaire*, place to combat homelessness and promote social connections for all. P/NP or letter grading.

**141. French Cinema. (4)** Lecture, three hours. Study of French cinema and cinematographers in generic, thematic, and sociocultural aspects. May be repeated for credit with topic change. P/NP or letter grading.

**142. Francophone Cinema. (4)** Lecture, three hours. Study of Francophone (Africa, Caribbean, postcolonial communities in France) cinema and cinematographers in generic, thematic, and sociocultural aspects. May be repeated for credit with topic change. P/NP or letter grading.

**160. Francophone Cultures in English. (4)** Lecture, three hours. Study of historical, anthropological, legal, literary, or filmic texts to provide students with broad view of some main issues in field of colonial and postcolonial Francophone studies. P/NP or letter grading.

**161. French and Francophone Theater in Translation. (4)** Lecture, three hours. Through plays of 20th century, analysis of struggles of individuals and social groups in contexts that are historical, political, philosophical (existentialism, absurd), and cultural (colonialism and conformism). May be repeated for credit with topic change. P/NP or letter grading.

**163. French and Francophone Short Story in Translation. (4)** Lecture, three hours. Survey of short fiction forms in France and Francophone world. May be repeated for credit with topic change. P/NP or letter grading.

**164. French and Francophone Novel in Translation. (4)** Lecture, three hours. Study of French novels. May be repeated for credit with topic change. P/NP or letter grading.

**165. Eco-Citizenship: Encounters with Eco-Citizens in Translations. (4)** Lecture, three hours. Not open to students with credit for course 135. Exploration of what eco-citizen is, what it means to be eco-citizen, if we are eco-citizens, and why. Answers to these questions by studying sustainability in France. Study of French cities (i.e., Nantes) that act as real-life laboratories. Using reading, videos, and podcasts, students make observations and draw some conclusions regarding concept of eco-citizenship. Study of some theories on eco-citizenship developed by French thinkers. Exploration of how French citizens aspire to be eco-citizens. Students meet with them formally and informally through readings, videos, and virtual meetings. Examination of several experiments put in place by these cities, and assessment of whether these are successes or failures. Comparison and contrast of actions to protect environment developed in Los Angeles and at UCLA. P/NP or letter grading.

**166. French and Francophone Autobiography in Translation. (4)** Lecture, three hours. Rhetoric of genre and its relation to broad questions of identity, gender, race, and class. May be repeated for credit with topic change. P/NP or letter grading.

**167. French and Francophone Intellectual History in Translation. (4)** Lecture, three hours. Readings of French and Francophone writers, historians, and thinkers. May be repeated for credit with topic change. P/NP or letter grading.

**169. Paris: Study of French Capital in Translation. (4)** Lecture, three hours. Textual and visual exploration of historical and imaginary (re)constructions of Paris, beginning with its earliest history and gradual formation of this great urban complex in maps from Renaissance to 20th century. Study of city's streets and quarters, traffic and transportation, multiple layers of past, present, and future, and *flâneurs* and insurrectionists through wide range of literary and critical texts. Readings cover mainly 19th and 20th centuries—Victor Hugo, Charles Baudelaire, Jules Verne, Emile Zola, André Breton, Walter Benjamin, Roland Barthes, and others. P/NP or letter grading.

**170. Nantes: Shape of City in Translation. (4)** Lecture, three hours. Not open for credit to students with credit for course 140. Metaphorical and virtual exploration of city of Nantes in western France to discover

rich culture. Study of French government's repressive measures against Breton culture, and especially Breton language. Examination of Nantes's dark part, i.e. 18th-century slave trade. Study of how people today made it their mission to recover this repressed memory, and to create connections with African countries, victims of slave trade. Examination of Nantes's industrial part and how in recent years old and abandoned industrial sites are transformed into inclusive spaces such as village *solidaire*, place to combat homelessness and promote social connections for all. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars in Translation. (4)** Seminar, three hours. Research seminars on topics to be announced each term. Topics include major writers, genres, cultural movements, or theoretical practices. Reading, discussion, and development of culminating project. May be repeated for credit with consent of major adviser. P/NP or letter grading.

**191B. Variable Topics Research Seminars: French. (4)** Seminar, three hours. Taught in French. Research seminars on topics to be announced each term. Topics include major writers, genres, cultural movements, or theoretical practices. Reading, discussion, and development of culminating project. May be repeated for credit with consent of major adviser. P/NP or letter grading.

**195. Community or Corporate Internship in French. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**198. Honors Research in French. (4)** Tutorial, three hours. Limited to junior/senior French majors with 3.5 departmental and 3.25 overall grade-point averages. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in French. (2 to 4)** Tutorial, three hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Contemporary French Theories. (4)** Lecture, three hours. Introductory study of French structuralist and poststructuralist thought in literature, linguistics, psychoanalysis, anthropology, philosophy, and feminism, that may include texts by Althusser, Barthes, Deleuze, Derrida, Foucault, Genette, Irigaray, Kristeva, Lacan, Lyotard, and others. S/U or letter grading.

**201. Techniques of Literary Analysis. (4)** Lecture, three hours. Practice in close analysis of literary texts, including *explication de texte*. S/U or letter grading.

**202. Cultural Studies. (4)** Lecture, three hours. Introduction to theoretical approaches to popular and mass culture, and to postcolonial and Francophone cultures. Topics include emergent disciplines and theories such as sociology and structuralism, city, revolution, avant-garde strategies, media, diaspora during



postwar modernization, Algerian War, May 68, and beyond. Theorists include Barthes, de Certeau, Bourdieu, Baudrillard, Lyotard, Ross, Rey Chow, Virilio. S/U or letter grading.

**203. Contemporary Francophone Literature. (4)** Lecture, three hours. Study of Francophone African, Caribbean, Vietnamese, or Quebec literatures and cultures, with specific attention to issues of cultural contact, language, colonialism, anticolonialism, nationalism, resistance and dissidence, and postcolonial theory. S/U or letter grading.

**204. Studies in Autobiography. (4)** Lecture, three hours. Introduction to theories of autobiography and subjectivity, and to genre of autobiography in literatures in French across centuries. Topics include early modern approaches to self-writing, Rousseau and emergence of modern self, women's autobiography in France and Francophone world. Theorists may include Georges Gusdorf, Philippe Lejeune, Paul de Man, Jacques Derrida, Helene Cixous, Michel Foucault, Pierre Bourdieu, Toril Moi. S/U or letter grading.

**205. Studies in Cinema and Literature. (4)** Lecture, three hours. Discussion of selected topics in French and Francophone cinema and literature. S/U or letter grading.

**207. Studies in History of Ideas. (4)** Seminar, three hours. Particular problems in French literature and ideas. May be repeated for credit. S/U or letter grading.

**208. Studies in Literary Criticism. (4)** Seminar, three hours. Readings in literary criticism, theory, and literature from any period of French literature. May be repeated for credit. S/U or letter grading.

**209. Studies in Literary Genre. (4)** Seminar, three hours. Advanced research and study of literary genres such as poetry, drama, fiction, autobiography, or performance and of theory of these genres. S/U or letter grading.

**M210. Paleography of Latin and Vernacular Manuscripts, 900 to 1500. (4)** (Same as Classics M218, English M215, and History M218.) Lecture, three hours; discussion, two hours. Introduction to history of Latin and vernacular manuscript book from 900 to 1500 to (1) train students to make informed judgments with regard to place and date of origin, (2) provide training in accurate reading and transcription of later medieval scripts, and (3) examine manuscript book as witness to changing society that produced it. Focus on relationship between Latin manuscripts and vernacular manuscripts with regard to their respective presentation of written texts. S/U or letter grading.

**214. Problematics of Medieval Language and Literature. (4)** Lecture, three hours. Introduction to Old French and problematics of medieval literature. S/U or letter grading.

**215. Studies in Middle Ages. (4)** Seminar, three hours. Examination of nature of cross-cultural, crosslinguistic, and cross-confessional exchange in medieval and early modern periods and France's role in it. S/U or letter grading.

**216. Renaissance. (4)** Lecture, three hours. French literature of 16th century studied within historical, intellectual, and cultural contexts. Letter grading.

**217. 17th Century. (4)** Lecture, three hours. Readings in 17th-century literature studied within historical, cultural, and literary contexts. S/U or letter grading.

**218. Enlightenment. (4)** Lecture, three hours. Readings in 18th-century French literature and thought: novels, satires, plays, and other key Enlightenment *philosophies*. Letter grading.

**219. 19th Century. (4)** Lecture, three hours. Readings in 19th-century literature, covering development of novel, lyric poetry, and theater from Romantic period to *fin-de-siecle*. S/U or letter grading.

**220. 20th Century. (4)** Lecture, three hours. Overview, both historical and analytical, of 20th-century French literature set in context of several key critical topics that interrogate canonical interpretation. Letter grading.

**296. Research Methods and Writing. (2)** Seminar, two hours. Advanced study of current topics in literary and cultural analysis and in critical theory. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching French at College Level. (4)** Seminar, three hours; discussion, one hour. Designed for graduate students. Theory and practice of language teaching. S/U grading.

**596. Directed Individual Studies or Research. (2 to 4)** Tutorial, to be arranged. S/U or letter grading.

**597. Preparation for Second-Year Review or PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. May be repeated for maximum of 16 units. S/U grading.

**598. Research for and Preparation of MA Thesis. (2 to 4)** Tutorial, to be arranged. Maximum of 4 units may be applied toward MA degree requirements. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## German

### Lower-Division Courses

**1. Elementary German. (4)** Lecture, five hours. P/NP or letter grading.

**2. Elementary German. (4)** Lecture, five hours. Enforced requisite: course 1. P/NP or letter grading.

**3. Elementary German. (4)** Lecture, five hours. Enforced requisite: course 2. P/NP or letter grading.

**4. Intermediate German. (4)** Lecture, five hours; laboratory, one hour. Enforced requisite: course 3. P/NP or letter grading.

**5. Intermediate German. (4)** Lecture, four hours; laboratory, one hour. Enforced requisite: course 4. P/NP or letter grading.

**6. Intermediate German. (4)** Lecture, four hours; laboratory, one hour. Enforced requisite: course 5. P/NP or letter grading.

**8. Elementary German: Intensive. (12)** Lecture, 15 hours; laboratory, five hours. Intensive basic course in German equivalent to courses 1, 2, and 3. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**50B. Great Works of German Literature in Translation: Romanticism to Present. (5)** Lecture, three hours; discussion, one hour. Study and analysis of selected masterworks in English translation, including authors such as E.T.A. Hoffmann, Heine, Fontane, Rilke, Kafka, Brecht, Thomas Mann, Hesse, Grass, Böll, and Christa Wolf. May not be applied toward completion of major in German. P/NP or letter grading.

**56. Figures Who Changed World: Cosmopolitanisms Within a Global Context. (5)** Lecture, three hours; discussion, one hour. Introduction to strains of German philosophy and political thought that focus on cosmopolitanism. Exploration of different historical and philosophical engagements with cosmopolitan projects. P/NP or letter grading.

**59. Holocaust in Film and Literature. (5)** Lecture/screenings, five hours; discussion, one hour. History of Holocaust and its present memory through examination of challenges and problems encountered in trying to imagine its horror through media of literature and film. P/NP or letter grading.

**61A. Modern Metropolis: Berlin. (5)** Lecture, three hours; discussion, one hour. Cultural, political, architectural, and urban history of one of most vibrant and

significant cities in world. Exploration of city over 800 years, using innovative mapping tools to understand how Berlin evolved from fortified mercantile town into global city. P/NP or letter grading.

**88. Lower-Division Seminar. (4)** Seminar, three hours. Course of variable content limited to topics of current interest and offered whenever staff member is available. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**102. War, Politics, Art. (5)** Lecture, three hours; discussion, one hour. Taught in English. Analysis of interrelationship between politics, social conditions, and arts with respect to war. World Wars I and II and German history to be used as model for principal questions of society and philosophical thinking. P/NP or letter grading.

**103. German Film in Cultural Context: Early German Film. (4)** Lecture, two hours; discussion, one hour. Taught in English. Survey of German film between 1919 and 1945. Analysis of technological and stylistic development of film from silent Expressionist films to Nazi propaganda and entertainment films. Film discussions enhanced by interactive media. Letter grading.

**104. German Film in Cultural Context, 1945 to Present. (4)** Lecture, three hours. Taught in English. Survey of German film since 1945 in its thematic and stylistic diversity. How did German filmmakers grapple with aftermath of World War II and Holocaust, economic recovery, Cold War and division of Germany, reunification, and growth of minority communities? May be repeated twice for credit with topic change. Letter grading.

**109. Jewish Question and German Thought. (4)** Lecture, three hours. Taught in English. Analysis of works that represent process of Jewish assimilation, disenfranchisement, and extermination, including authors such as Mendelssohn, Heine, Kafka, Paul Celan, Nelly Sachs, Anne Frank, and others. Letter grading.

**110. Special Topics in Modern Literature and Culture. (4)** Lecture, three hours. Taught in English. Content varies with instructor and may include works by authors such as Thomas Mann, Rilke, Kafka, Brecht, Christa Wolf, and others. May be repeated for credit. Letter grading.

**112. Feminist Issues in German Literature and Culture. (4)** Lecture, three hours. Taught in English. Analysis of major issues in German feminism today (e.g., status, creative work, and reception of women writers in various periods such as Romanticism, Fascism, and/or divided/unified Germanies). Letter grading.

**113. German Folklore. (4)** Lecture, three hours. Taught in English. Survey of various folklore genres in cultural context, including legends, proverbs, and cultural enactments such as carnival. Letter grading.

**114. Fairy Tales and Fantastic.** (5) Lecture, three hours; discussion, one hour. Taught in English. History and reception of folklore collections in Europe, with particular attention to ideology and influence of Grimms' tales. Interpretation of selected tales and their transformations and appropriation in literature, film, advertising, and pedagogy. P/NP or letter grading.

**115. 19th-Century German Philosophy.** (4) Lecture, three hours; discussion, one hour. Taught in English. German philosophy, which may generally be characterized as philosophy that takes activity rather than passive subsistence to be fundamental nature of all things, is one of Germany's greatest gifts to humanity. Exploration of first half of two-century history of German philosophy—period from Kant to Nietzsche, including Hegel, Kierkegaard, and Marx. Letter grading.

**116. 20th-Century German Philosophy.** (4) Lecture, three hours; discussion, one hour. Taught in English. German philosophy, which may generally be characterized as philosophy that takes activity rather than passive subsistence to be fundamental nature of all things, is one of Germany's greatest gifts to humanity. Exploration of second half of two-century history of German philosophy—period from Nietzsche through Habermas, including Heidegger, Gadamer, Jaspers, and Frankfurt School theorists. Letter grading.

**117. German Exile Culture in Los Angeles.** (4) Lecture, three hours. Taught in English. Cultural and historical exploration of exile as site of creative activity for German writers and other artists during and after World War II. General questions of cultural migration and cultural transfer to be thematized. P/NP or letter grading.

**118SL. Between Memory and History: Interviewing Holocaust Survivors.** (4) Seminar, two hours; fieldwork, two hours. Strongly recommended prerequisites: prior European and Holocaust history courses. Examination of historical value of eyewitness testimony of Holocaust through unique service opportunities that bring students together with survivors. Question of testimony approached from number of perspectives, including legal, historical, and ethical, to examine vexed relationship between history and memory. Examination of survivor testimony through classic memoirs in field, such as Primo Levi's *The Drowned and the Saved* and Ruth Kluger's *Still Alive*. Through collaboration with Jewish Family Services, 1939 Club, and Los Angeles Museum of Holocaust, students meet and work with Holocaust survivors and undertake collaborative research projects and oral histories. Students also research and curate series of interactive tours through Museum of Holocaust. Letter grading.

140. Language and Linguistics. (4) Lecture, three hours. Enforced prerequisite or corequisite: course 6. Taught in English with German proficiency required. Theories and methods of linguistics, with emphasis on structure of modern standard German, its phonology, morphology, syntax, semantics, and pragmatics. Other topics include diachronic, spatial, and social variation of German (i.e., its historical development, dialectology, and sociolinguistic dimensions). Letter grading.

**141. Current Topics in Germanic Linguistics.** (4) Lecture, three hours. Enforced prerequisite: course 152. Taught in English with German proficiency required. In-depth investigation of one topic in field of Germanic linguistics, such as phonetics and phonology, morphology and syntax, semantics and pragmatics, social and spatial variation (i.e., sociolinguistics and dialectology of German), or history of German. May be repeated for credit. Letter grading.

**C142. Linguistic Theory and Grammatical Description.** (4) Lecture, three hours. Enforced prerequisite: course 140 or Linguistics 20. Taught in English with German proficiency required. Problems in structure of Dutch and German, considered from theoretical frameworks such as sign-oriented linguistics, functional linguistics, discourse grammar, and cognitive linguistics. Discussion of formal linguistic approaches. Concurrently scheduled with course C238. Letter grading.

**152. Conversation and Composition on Contemporary German Culture and Society I.** (4) Lecture, three hours. Requisite: course 6. Taught in German. Structured around themes as they emerge in contemporary German texts ranging from news magazine articles to literature, with emphasis on speaking and writing proficiency. Presentation software featured. P/NP or letter grading.

**153. Conversation and Composition on Contemporary German Culture and Society II.** (4) Lecture, three hours. Requisite: course 6. Taught in German. Structured around themes as they emerge in contemporary German texts ranging from news magazine articles to literature, with emphasis on speaking and writing proficiency. Presentation software featured. P/NP or letter grading.

**154. Business German.** (4) Lecture, three hours. Requisite: course 6. Taught in German. Specialized language course that teaches German business administration, practices, and correspondence, with attention to cultural nuances. Ongoing developments in European Union analyzed via newspaper articles and Internet. P/NP or letter grading.

**155. Advanced German Language through Cultural History and Current Affairs.** (4) Lecture, three hours. Requisites: courses 152, 153. Taught in German. Advanced German language course that juxtaposes cultural history with current affairs to teach complex speaking and writing skills of interpretation, analysis, and criticism. Readings may include selections from Luther, Heine, Freud, and current authors. Students create their own interactive media presentations. Letter grading.

**157. Contemporary German Cinema: Advanced Conversation and Composition.** (4) Lecture, three hours. Taught in German. Development of advanced speaking skills and thorough grounding in essay writing in German by considering issues of style, structure, grammar, and vocabulary. Introduction to contemporary German cinema to expose students to slice of German (and European) culture and history, with focus on notion of boundary. Examination of different types of boundaries and borders (e.g., physical borders between countries; boundaries created by various political ideologies; socially created boundaries of class, race, and gender; boundary between memory and experience), ways in which people cross them, and their reasons for these transgressions. Analysis of movies to better understand various cinematic techniques. P/NP or letter grading.

**158. Introduction to Study of Literature.** (4) Lecture, three hours. Taught in German. Introduction to most important terms and resources of literary analysis to help students develop and improve skills in close and critical reading of literary texts, develop basic research techniques, acquire familiarity with basics of literary and cultural analysis, and find pleasure in pursuit of literary and cultural study. Letter grading.

159. German Cultural Studies. (4) Lecture, three hours. Requisite: course 152 or 153. Taught in German; some theoretical readings in English. Exploration of German culture in different historical contexts. Examination of various cultural spaces, practices, and standpoints as staged in literary and nonliterary texts, with emphasis on constructions of sex and gender, memory and national identity, and ethnicity and race. Analysis of ways of seeing, thinking, and talking about these issues as manifested in several cultural debates that dominated public discussions in Germany (and Europe) for several weeks, months, or even years (e.g., debates about admission of women to universities at end of 19th century, reconstructing/preserving sites of memory in postwar Germany, and headscarf and integration in contemporary Germany). Letter grading.

**170. Goethe.** (4) Lecture, three hours. Requisite: course 152 or 153. Taught in German. Reading and discussion of representative works (except *Faust*) from Goethe's early period (*Die Leiden des jungen Werther*) through maturity and old age (*West-östlicher Divan*). Students work with digital humanities methods to improve German language competency and evaluate Goethe's global influence on Western intellectual history. Letter grading.

**173. Advanced Study of Modern Literature.** (4) Lecture, three hours. Enforced prerequisite: course 152 or 153. Taught in German. Naturalism, Expressionism, and other early 20th-century literary movements and works. Letter grading.

**174. Advanced Study of Contemporary Literature and Culture.** (4) Lecture, three hours. Enforced prerequisite: course 152 or 153. Taught in German. Literature after 1945 in German-speaking countries, including issues such as national borders, ethnic identity, gender relations, and commercialization of culture. Letter grading.

**175. Intercultural Germany: Literature, Politics, Migration, and Culture.** (4) Lecture, three hours. Taught in German. Most readings in German; some theoretical readings in English. Exploration of issues surrounding immigration and intercultural identity in Germany since 1960, with focus on period after 1990. Examination of various cultural spaces, practices, and standpoints as staged in literary and nonliterary texts, with emphasis on constructions of ethnicity, nation, race, class, and gender. Analysis of several political and cultural debates that dominated media and public discussions in Germany and Europe for several weeks. Discussion of several literary texts by Turkish German and other minority/intercultural writers. Examination of hip-hop minority music and culture as voices in political debates. Exploration of contemporary controversies around Islam in Germany. Reading of several theoretical pieces that examine relationships between immigration, globalization, culture, and identity. P/NP or letter grading.

187. Undergraduate Seminar. (4) Seminar, three hours. Required of all German majors who are candidates for general secondary instructional credential. Content varies by instructor and may include advanced work in folklore, film, and German studies. Letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars: German.** (4) Seminar, three hours. Requisite: course 6. Taught in German. Research seminars on topics to be announced each term. Topics include major writers, genres, cultural movements, or theoretical practices. May be repeated for credit with consent of major adviser. P/NP or letter grading.

**191C. Capstone Seminar. (2)** Seminar, three hours. Limited to senior German majors. Collaborative discussion of and reflection on courses already taken for major, drawing out and synthesizing larger themes and culminating in paper or other final project. Must be taken in conjunction with one course numbered 140 or higher. Letter grading.

**197. Individual Studies in German. (2 to 4)** Tutorial, three hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in German. (4)** Tutorial, three hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**201C. Theories of Literary Interpretation. (4)** Lecture, three hours. Advanced analysis and discussion of various models of literary interpretation and schools of thought such as hermeneutics, psychoanalytic criticism, social historical approaches, semiotics, structuralism, and poststructuralism. Topics vary with instructor. Letter grading.

**202A. Middle High German. (4)** Lecture, three hours. Introduction to Middle High German language, with particular emphasis on developing facility in reading. Study of grammar, syntax, and vocabulary combined with introduction to poetic forms and cultural context. Letter grading.

**202B. Readings in Middle High German Literature. (4)** Lecture, three hours. Introduction to medieval German literature and literary history and to use of contemporary theory in study of medieval texts. Continued practice in reading Middle High German, although most texts to be read in modern translation. Letter grading.

**204. Early Modern German Literature. (4)** Lecture, three hours. Selected readings from 1500 to 1700, with introduction to development of German as modern literary language and to literary genres and cultural models. Impact of Thirty Years' War on German literary production and reception in German baroque. Letter grading.

**206. Studies in Enlightenment Literature and Culture. (4)** Lecture, three hours. Analysis of major 18th-century German texts from philosophic, social-historical, psychohistorical, and literary perspectives. Letter grading.

**207. Weimar Classicism. (4)** Lecture, three hours. Reading and interpretation of major works of German classicism. May include problems in reception of classicism by later authors and cultural theorists. Letter grading.

**208. Romanticism. (4)** Lecture, three hours. Analysis of selected works and theories of German Romantics such as Friedrich Schlegel, Novalis, and Hoffman, with attention to relationship between Romanticism and other periods. Letter grading.

**209C. 19th-Century Narrative Prose. (4)** Lecture, three hours. Analysis of prose works between Romanticism and naturalism. Discussion of development of literary realism and form of novella. Letter grading.

**210A. Naturalism, Symbolism, and Expressionism. (4)** Lecture, three hours. Analysis of selected works (poetry, drama, prose) of early modernism from Hauptmann to Kafka. Discussion of sociological spectra and pluralism of styles and forms. Letter grading.

**210B. 20th-Century Novel to 1945. (4)** Lecture, three hours. Prose works in first half of 20th century as they express war experience, crisis of consciousness, and cultural conflicts between wars, as well as innovations in narrative technique. Letter grading.

**211. Postwar Literature. (4)** Lecture, three hours. Study of major works by German-speaking authors writing since World War II. Examination of issues such

as identity crises, nationalism and divided Germany, gender expectations, and social-political attitudes. Letter grading.

**212. Contemporary Literature and Culture. (4)** Lecture, three hours. Analysis of current cultural issues and their relation to literary production and interpretation. Topics may include areas such as feminism, postcolonialism, postmodernism, and contemporary theories of textuality. Letter grading.

**213. Topics in Literature and Film. (4)** Lecture, three hours. With focus on two different modes of cultural representation, examination of topics in German literature and film from Weimar Republic to present. Study of media theory, feminist film theory, and interrelationships between film, literature, and social history. Letter grading.

**217. History of German Language. (4)** Discussion, three hours. Historical survey of development of standard literary German language from time of Indo-European unity through proto-Germanic, West Germanic, medieval period, Reformation, baroque period, and Enlightenment until its final codification at end of 19th century. S/U or letter grading.

**230. Survey of Theory in Historical Linguistics. (4)** Lecture, three hours. Systematic overview of theories of historical linguistics. Letter grading.

**231. Gothic. (4)** Discussion, three hours. Systematic study of phonology and grammar of Gothic language, with readings in Wulfila's translation of Bible and introduction to history of Goths and their place in development of modern Europe. S/U or letter grading.

**232. Old High German. (4)** Discussion, three hours. Introduction to earliest phases of German literature, with extensive readings in major documents of that period (750 to 1050). Emphasis on grammatical interpretation of these documents and identification of dialects used in their composition. S/U or letter grading.

**233. Old Saxon. (4)** Discussion, three hours. Introduction to study of earliest documents in Old Low German. Readings in *Heliland* and study of Old Saxon *Genesis*. S/U or letter grading.

**C238. Linguistic Theory and Grammatical Description. (4)** Lecture, three hours. Enforced requisite: course 140 or Linguistics 20. Taught in English with German proficiency required. Problems in structure of Dutch and German, considered from theoretical frameworks such as sign-oriented linguistics, functional linguistics, discourse grammar, and cognitive linguistics. Discussion of formal linguistic approaches. Concurrently scheduled with course C142. Graduate students meet as group one additional hour each week and write research papers of greater length and depth. Letter grading.

**251. Seminar: Germanic Linguistics. (4)** Seminar, three hours. Current topics in synchronic or diachronic linguistics, such as specific issues in generative grammar, sociolinguistics and dialectology, or language contact. Letter grading.

**252. Seminar: Historical and Comparative Germanic Linguistics. (4)** Seminar, three hours. Topics selected from field of historical German phonology and syntax according to needs and preparation of students enrolled (e.g., West Germanic problem and classification of Germanic languages, development of Germanic verbal and nominal morphology, proto-Germanic syntax). S/U or letter grading.

**253. Seminar: Medieval Literature. (4)** Seminar, three hours. Investigation of selected topic or particular theoretical issue that arises in study of medieval literature. Letter grading.

**256. Seminar: Enlightenment. (4)** Seminar, three hours. Selected problems in cultural, literary, and philosophic history. May include modern critiques of Enlightenment thought. Letter grading.

**257. Seminar: Age of Goethe. (4)** Seminar, three hours. Selected topics in literature and culture between 1775 and 1832, with special emphasis on work of Goethe and Schiller as it relates to philosophic texts such as Hegel's *Phänomenologie des Geistes* or as it relates to historical events such as French and American Revolutions. Letter grading.

**258. Seminar: Romanticism. (4)** Seminar, three hours. Discussion of specific author or topic from Romantic period, possibly in close connection with course 208. Critical review of secondary works. S/U or letter grading.

**259. Seminar: 19th-Century Literature. (4)** Seminar, three hours. Discussion of specific author or topic of 19th-century literature, possibly in close connection with course 209A, 209B, or 209C. Critical review of secondary works. S/U or letter grading.

**260. Seminar: Modern Period. (4)** Seminar, three hours. In-depth analysis of one particular issue in pre-1945 German literature and culture. Letter grading.

**261. Seminar: Contemporary Literature. (4)** Seminar, three hours. In-depth analysis of one particular issue in post-1945 German literature and culture. Letter grading.

**263. Seminar: Literary Theory. (4)** Seminar, three hours. Special focus on particular theoretical school or interpretive paradigm. Content varies with instructor. Letter grading.

**264. Topics in Communicative, Cognitive, and Functional Approaches to Linguistic Analysis. (4)** Seminar, three hours. Requisite: course C142 or C238. Readings, discussion, analyses, and validation procedures within sign-based linguistics, cognitive grammar, and discourse-functional approaches to language. Consideration of impact of grammaticalization theory on various nonformal approaches to synchronic linguistics. Discussion of work by Contini-Morava, Diver, Garcia, Goldberg, Janssen, Lakoff, Langacker, and Verhagen, as well as Bybee, Traugott, Hopper, and others. S/U or letter grading.

**265. German Philosophy. (4)** Seminar, three hours. German philosophical tradition is one of most influential, difficult, and problematic Western world has known. Beginning with Kant's Critique of Pure Reason and continuing through Hegel, Marx, Nietzsche, and Heidegger to Arendt and thinkers of Frankfurt school, German philosophers have explored, more deeply and rigorously than any other Western thinkers, nature and limits (if any) of human mental activity. Results have been basic to social, political, and aesthetic theory as well as to philosophy itself. Exploration of thought of one member of that tradition by concentrating yearly on one exemplary text. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Approaches to Foreign Language Pedagogy. (4)** Seminar, one hour; discussion, two hours. Issues include development of current theories of second-language acquisition, effects of these theories on language teaching, psycholinguistics, sociolinguistics, assessment techniques, use of multimedia in foreign language pedagogy, and design of syllabi for basic foreign language courses. S/U grading.

**596. Directed Individual Study or Research. (4)** Tutorial, three hours. To be arranged with faculty member who directs study or research. Required research paper must be filed with department chair. S/U grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (4)** Tutorial, three hours. To be arranged with faculty member who directs examination preparation. S/U grading.

**598. Research for and Preparation of MA Thesis. (4 to 12)** Tutorial, three hours. To be arranged with faculty member who directs research for and preparation of thesis. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (4 to 12)** Tutorial, three hours. To be arranged with faculty member who directs study. May be repeated. S/U grading.

# Italian

## Lower-Division Courses

- 1. Elementary Italian—Beginning. (4)** Lecture, five hours. P/NP or letter grading.
- 2. Elementary Italian—Continued. (4)** Lecture, five hours. Enforced requisite: course 1. P/NP or letter grading.
- 3. Elementary Italian—Continued. (4)** Lecture, five hours. Enforced requisite: course 2. P/NP or letter grading.
- 4. Intermediate Italian. (4)** Lecture, five hours. Enforced requisite: course 3. P/NP or letter grading.
- 5. Intermediate Italian. (4)** Lecture, five hours. Enforced requisite: course 4. P/NP or letter grading.
- 6. Intermediate Italian. (4)** Lecture, three hours. Enforced requisite: course 5. Advanced grammar and composition course with readings from select literary works. P/NP or letter grading.
- 9. Intensive Italian. (12)** Lecture, 20 hours. Intensive language program equivalent to first year of college Italian (courses 1, 2, 3) and designed to develop basic language skills. Offered in summer only. P/NP or letter grading.
- 19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.
- 42A. Italy through Ages in English: Saints and Sinners in Early Modern Italy. (5)** Lecture, four hours; discussion, one hour. Examination of issues of cultural hegemony, political and religious freedom, and doctrinal conflict through Italy's early modern literary and artistic production. Texts may include Dante's *Divine Comedy*, Boccaccio's *Decameron*, Saint Catherine's letters, Machiavelli's *The Prince*, and Galileo's scientific writings. Artworks may include those of Raphael and Michelangelo, as well as Bernini's sculptures. P/NP or letter grading.
- 42B. Italy through Ages in English: Modern and Contemporary Italy. (5)** Lecture, four hours; discussion, one hour. Cultural and political developments from 18th century to present. Topics include Beccaria and opposition to death penalty and absolutism; Garibaldi, Italian Risorgimento, national liberation, and unification; Lombroso and criminology in new Italy; Mussolini and Fascism; Gramsci and Communism; Italian Catholicism; Berlusconi and media; migration and today's multiethnic Italy. Assigned works include relevant literature and memoirs, music, and film, futurist and fascist art, and organized crime fiction and film. P/NP or letter grading.
- 42C. Italy through Ages in English: Food and Literature in Italy. (5)** Lecture, four hours; discussion, one hour. Profile of Italian history and culture through analysis of gastronomic and literary texts. Special emphasis on late Middle Ages, Renaissance, and Risorgimento. P/NP or letter grading.
- 46. Italian Cinema and Culture in English. (5)** Lecture/screenings, five hours; discussion, one hour. Special topics in Italian culture as reflected and reinforced by the nation's prime artform, stressing aesthetics and ideology of films, contemporary Italian history, and politics. Rotating topics include sex and politics, comedy, integration, family networks, and neorealism. P/NP or letter grading.
- 50A-50B. Masterpieces of Italian Literature in English. (5-5)** Lecture, four hours; discussion, one hour. P/NP or letter grading. **50A.** Middle Ages to Baroque. Leading philosophical, religious, and sociopolitical issues in Europe, examined in authors such as St. Francis, Dante, Boccaccio, Petrarch, Lorenzo de' Medici, Machiavelli, Castiglione, Ariosto, and Tasso. **50B.** Enlightenment to Postmodernity. Comparative study of major literary texts and their adaptations into different forms of public spectacle, including theater, opera, and film. Works by Goldoni, Gozzi, Mascagni, Verga, Puccini, Pirandello, Calvino, Ortese, Zavattini, de Sica, and Taviani Brothers. Emphasis on development of ideas of spectacle.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. Composition and Style. (4)** Lecture, three hours. Enforced requisite: course 6. Taught in Italian. Development of writing techniques and proficiency in composition and style, with emphasis on editing for grammar and style. P/NP or letter grading.

**102A-102B-102C. Italian Cultural Experience in English. (4-4-4)** Lecture, three hours. Study of cultural development of Italy. P/NP or letter grading. **102A.** Roots of Western civilization; social and artistic achievements of communal society; Marco Polo, Dante, Boccaccio, Giotto, rise of Italian merchant class. **102B.** Renaissance discovery of human genius; crucial period between Machiavelli and Galileo, leading Italy and Europe to scientific revolution. **102C.** Birth of Italian nation from wars of independence to foundation of modern republic, delineated through narrative and cinema in historical context.

**103A. Introduction to Classic Italian Literary and Cultural Studies. (4)** Lecture, three hours. Enforced requisite: course 100. Taught in Italian. Selected classic works of Italian literature, theater, art, and culture from medieval era to Renaissance and baroque. Emphasis on critical methods and skills for analyzing and interpreting wide range of Italian texts and cultural formations in their historical context and in comparison to contemporary and transnational views. Representative authors may include Saint Francis of Assisi, Dante, Petrarch, Boccaccio, Saint Catherine of Siena, Machiavelli, Giotto, Botticelli, Michelangelo, Leonardo, Caravaggio, Gaspara Stampa, Veronica Franco, Ariosto, Tasso, and Galileo. P/NP or letter grading.

**103B. Introduction to Modern Italian Literary and Cultural Studies. (4)** Lecture, three hours. Enforced requisite: course 100. Taught in Italian. Selected modern works of Italian literature, theater, art, and culture from Enlightenment to present. Emphasis on critical methods and skills for analyzing and interpreting wide range of Italian texts and cultural formations in their historical context and in comparison to contemporary and transnational views. Representative authors may include Vico, Goldoni, Alfieri, Beccaria, Rosalba Carriera, Piranesi, Tiepolo, Leopardi, Manzoni, Pirandello, Aleramo, Marinetti, Boccioni, Modigliani, De Chirico, Calvino, Ortese, Pasolini, Franca Rame, and Dario Fo. P/NP or letter grading.

**110. Dante in English. (4)** Lecture, three hours. Close study of one of world's greatest literary geniuses, particularly of his masterpiece, *Divine Comedy*, the archetypal medieval journey through the afterworld. P/NP or letter grading.

**113. Dante's *La Divina Commedia*. (4)** Lecture, three hours. Enforced requisite: course 100. Taught in Italian. Study of medieval philosophy, religion, and politics in *La Divina Commedia*, greatest literary achievement of the age. P/NP or letter grading.

**114B. Middle Ages: Medieval Humor, Moralism, and Society. (4)** Lecture, three hours. Novelty of Boccaccio's witty and comic masterpiece, *Decameron*, analyzed within context of moral and social codes of culture of time. P/NP or letter grading.

**116A-116B. Italian Renaissance. (4-4)** Lecture, three hours. P/NP or letter grading. **116A.** Renewal of Art and Thought. Study of *Quattrocento* and its representatives in arts and humanistic thought (i.e., Mantegna, Botticelli, Pico, Valla, and Ficino). **116B.** Power and Imagination in Renaissance. Study of artistic world of Leonardo, Raffaello, Michelangelo, Titian, and literary masterpieces of Machiavelli, Castiglione, Ariosto, Tasso, in world molded by powerful political forces, such as Roman Papacy and Medici, Gonzaga, and D'Este courts.

**120. Modern and Contemporary Literature. (4)** Lecture, three hours. Analysis of novels, short fiction, poetry, and drama in connection with modern and contemporary thought, politics, and culture. Authors may include D'Annunzio, Aleramo, Pirandello, Ungaretti, Montale, Pasolini, Ortese, Morante, Ginzburg, Calvino, Fo, Eco, Celati, and Tabucchi. P/NP or letter grading.

**121. Literature and Film. (4)** Lecture, three hours. Comparative study of specific literary works and their adaptation into film and of different techniques in two media and forms of expression. Texts include literary works, screenplays, and works on literary and film theory. P/NP or letter grading.

**122. Italian Theater. (4)** Lecture, three hours. Study of works for stage from Renaissance to present, including examples of opera and questions pertaining to acting, staging, and performance. May include texts by Machiavelli, Aretino, Alfieri, Gozzi, Goldoni, Verdi, Puccini, D'Annunzio, Amelia Rosselli, Dacia Maraini, Dario Fo, and Franca Rame. P/NP or letter grading.

**123. Modern Italian Cultural Studies. (4)** Seminar, three hours. Reading, research, and writing on various cultural aspects of modern and contemporary Italy. Examination of contemporary Italian food culture, fashion and design, photography and visual arts, mass media, politics, music, and sports. P/NP or letter grading.

**124. Food and Literature in Italy. (4)** Lecture, three hours. Profile of Italian history and culture through analysis of gastronomic documents, food traditions, and literary and visual works. Emphasis on late Middle Ages, Renaissance, and Risorgimento, or modern and contemporary movements such as *Cucina futurista* and slow food. Examination of relation of Italian traditions of food and eating with health, body, gender, community, politics, biodiversity, and environment. P/NP or letter grading.

**125. Italian through Opera. (4)** Lecture, three hours. Requisite: course 6. Taught in Italian. Introduction to traditional Italian opera as means of appreciating culture of Italy, art form of opera, and study of Italian language at advanced level through reading of libretti. Six masterworks of Italian opera tradition—*Il Barbiere di Siviglia*, *La Bohème*, *Pagliacci*, *Otello*, *Tosca*, and *La Traviata*—offer culturally authentic contexts to learn about operas, their characters, plots, settings, and themes. Exploration of various historical, political, and cultural issues raised in each opera. P/NP or letter grading.

**131. Reading and Reciting. (4)** Lecture, three hours. Enforced requisite: course 100. Taught in Italian. Emphasis on diction, interpretation, and performance of one-act plays as vehicles for perfection of pronunciation, comprehension, and fluency. P/NP or letter grading.

**140. Italian Novella from Boccaccio to Basile in Translation. (4)** Lecture, three hours. Analysis of development of Italian novella in its structure, historical context, and folk material. Special emphasis on how Italian novella influenced other European literatures. P/NP or letter grading.

**150. Modern Fiction in Translation. (4)** Lecture, three hours. Select issues in 20th-century thought traced in writers of international fame, with focus on concerns and styles of several prose works such as Umberto Eco's *The Name of the Rose*, Pasolini's *The Ragazzi*, Pirandello's *The Late Mattia Pascal*, and Calvino's *The Cosmicomics*. P/NP or letter grading.



**152. Italy between Europe and Africa. (4)** Lecture, three hours. Knowledge of Italian or background in Italian studies not required. Analysis and critical discussion of works by Italian, northern European, and African writers (including travelers and migrants) who from 18th century to present have seen or experienced Italian peninsula and islands as bridge between Europe and Africa, or mix of both. Readings include works by northern European and African authors about Italy, and Italian authors about Africa and southern Italy. P/NP or letter grading.

**M158. Women, Gender, and Sexuality in Italian Culture. (4)** (Same as Gender Studies M158.) Lecture, three hours; discussion, one hour. Analysis of gender roles, images of femininity and masculinity, patriarchy, myths of Madonna and Latin lover, condition of women in Italian society through history, politics, literature, film, and other media. Italian majors required to read texts in Italian. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Italian Studies. (4)** Seminar, three hours. Research seminar with focus on themes and issues outside uniquely Italian literature topics covered in regular departmental undergraduate courses. Reading, discussion, and development of culminating project. May be repeated once for credit. P/NP or letter grading.

**195. Community or Corporate Internships in Italian. (4)** Tutorial, three hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**198. Honors Research in Italian. (4)** Tutorial, one hour. Limited to juniors/seniors. Development and completion of significant research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199A. Directed Research in Italian. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199B. Directed Capstone Research in Italian and Italian and Special Fields. (4)** Tutorial, to be arranged. Requisites: courses 100 and at least four required courses for the major. Limited to senior Italian and Italian and Special Fields majors. Supervised individual research under guidance of faculty mentor. Capstone tutorial in which interdisciplinary paper (20 to 25 pages) is to be written in either Italian or English that requires students to synthesize their knowledge of Italian or Italian and one special field of study. Individual contract required. Letter grading.

## Graduate Courses

**201. Bibliography and Methods of Research. (4)** Lecture, three hours. S/U or letter grading.

**205. Studies in Criticism and Theory. (4)** Seminar, three hours. History, theory, and practice of criticism. Presentation, discussion, and application of fundamental currents in aesthetics and criticism from Plato

and Aristotle to present, including thematic and genre criticism, poststructuralist approaches, and feminist criticism. Letter grading.

**210. Studies in Early Italian Literature. (4)** Lecture, three hours. Topics include origins of Italian language and study of early texts, *Scuola Siciliana* and early poetry of Central and Northern Italy, and *Dolce Stil Novo*. S/U or letter grading.

**214A-214F. Studies in Medieval Literature. (4 each)** Lecture, three hours. S/U or letter grading. **214A.** *La Divina Commedia*. **214B.** Dante's Other Works. **214C.** Petrarca's *Canzoniere*. **214D.** Boccaccio's *Decameron*. **214E.** Boccaccio's Other Works. **214F.** Variable Topics. Variable-content seminar on themes and issues of medieval literature, with coverage of authors such as St. Francis of Assisi or Jacopone de Todi.

**215A-215B. Studies in 15th-Century Literature. (4-4)** Lecture, three hours. S/U or letter grading. **215A.** Variable Topics. Variable-content seminar on themes and issues of 15th-century literature, with coverage of authors such as Pulci or Poliziano. **215B.** Age of Lorenzo de' Medici and Poliziano.

**216A-216E. Studies in the Renaissance. (4 each)** Lecture, three hours. S/U or letter grading. **216A.** Machiavelli and Renaissance Political Thought. **216B.** Aristotle and Renaissance Epic. **216C.** Tasso. **216D.** Renaissance Theater. **216E.** Variable Topics. Variable-content seminar on themes and issues of Renaissance literature, with coverage of authors such as Vasari, Leonardo, or Benvenuto.

**217. Studies in 17th-Century Literature. (4)** Lecture, three hours. Topics include Galileo and birth of scientific prose, Giordano Bruno, Gian Battista Marino, and baroque poetry. S/U or letter grading.

**218A-218D. Studies in 18th-Century Literature. (4 each)** Lecture, three hours. S/U or letter grading. **218A.** Vico. **218B.** Alfieri. **218C.** Goldoni. **(4)** Lecture, three hours. S/U or letter grading. **218D.** Variable Topics. Variable-content seminar on themes and issues of 18th-century literature, with coverage of authors such as Vico or Ludovico.

**219A-219D. Studies in 19th-Century Literature. (4 each)** Lecture, three hours. S/U or letter grading. **219A.** Foscolo. **219B.** Leopardi. **219C.** Manzoni. **219D.** Variable Topics. Variable-content seminar on themes and issues of 19th-century literature, with coverage of authors such as Carducci, Tommaseo, or Nievo.

**220. Studies in Turn-of-the-Century Literature. (4)** Lecture, three hours. Topics include Verga and *Verismo*, poetry, prose, and theater of D'Annunzio, and poetry of Carducci and Pascoli. S/U or letter grading.

**221A-221E. Studies in 20th-Century Literature. (4 each)** Lecture, three hours. S/U or letter grading.

**221A.** Variable Topics. Variable-content seminar on themes and issues of 20th-century literature, with coverage of authors such as D'Annunzio, Verga, Marinetti, and Pirandello. **221B.** Contemporary Poetry. Analysis of legacy of two major figures in Italian poetry from World War II—Ungaretti and Montale. Thorough examination of movements and individual poets active in the 1960s and 1970s. **221C.** 20th-Century Narrative to World War II. Assessment of turn-of-the-century narrative pattern (Gabriele D'Annunzio) and analysis of radical innovations brought about by such towering figures as Pirandello, Svevo, Bernani, Marinetti, etc. **221D.** 20th-Century Narrative since World War II. In-depth exploration of some major works that have made contemporary Italian literature famous throughout the world, with special emphasis on study of formalistic modes adopted by the neo-avant-garde. **221E.** Pirandello and Contemporary Theater. Thorough reading of theatrical texts, accompanied by analysis of how the plays have been realized on stage by important directors such as Strehler, Ronconi, and the playwrights/actors themselves. Emphasis on ritualistic implications of the theatrical performance.

**222A-222B. Comparative Romance Historical Grammar. (4-4)** Lecture, three hours. Each course may be taken independently for credit. S/U or letter grading. **222A.** Phonology. Principal sound changes from late Latin to main Romance dialects. **222B.** Mor-

phology and Syntax. Prime morpho-syntactic changes occurring between late Latin and main Romance dialects.

**223. Structures of Modern Italian. (4)** Lecture, three hours. Descriptive analysis of basic features of standard Italian from synchronic, typologic vantage. Topical emphasis may vary annually, but core progression departs from phonology (e.g., syllable types, prosodic patterns, phrasal phonetics), moves through morphologic constituents, passing to sentence sequences (coordination, ellipses, etc.). S/U or letter grading.

**224. Italo-Romance Dialectology. (4)** Lecture, three hours. Differentiation of late spoken Latin into myriad varieties spoken in Italy. Attention to discrete language types (e.g., Sardinian, Ladin, Friulan, and Franco-Provençal). Consideration of present-day sociolinguistic pressures. S/U or letter grading.

**225. Cultural History of Italian Language. (4)** Lecture, three hours. Historical survey of development of Italian language from medieval times to unification of country in 1861. *Questione della lingua*, general acceptance of Florentine speech, and its evolution into national language. S/U or letter grading.

**230A-230B. Folk Tradition in Italian Literature. (4-4)** Lecture, two hours. S/U or letter grading.

**M241. Seminar: Political Geography of Italy. (4)** (Same as Geography M292.) Seminar, three hours; reading period, two hours. Themes in political geography with particular emphasis on Italy. May be repeated for credit. S/U or letter grading.

**250A-250D. Seminars: Dante. (4 each)** Seminar, three hours. S/U or letter grading.

**251. Seminar: Petrarch. (4)** Seminar, three hours. S/U or letter grading.

**252. Seminar: Boccaccio. (4)** Seminar, three hours. S/U or letter grading.

**253A-253B-253C. Seminars: Chivalric Poetry in Italy. (4-4-4)** Seminar, three hours. Relationship between genre and its French medieval sources, with study of its evolution in Italy through Pulci, Boiardo, Ariosto, and Tasso. S/U or letter grading.

**254. Seminar: Machiavelli. (4)** Seminar, three hours. S/U or letter grading.

**255A-255B. Seminars: Baroque. (4-4)** Seminar, three hours. S/U or letter grading.

**256A-256B. Seminars: 18th Century. (4-4)** Seminar, three hours. S/U or letter grading.

**257A-257B. Seminars: Romanticism. (4-4)** Seminar, three hours. S/U or letter grading.

**258A-258B. Seminars: Contemporary Italian Literature. (4-4)** Seminar, three hours. S/U or letter grading.

**260A. Alternative Perspectives in Italian Culture: Studies of Folk Tradition in Italian Literature. (4)** Lecture, three hours. Open to undergraduate students with consent of instructor. Conspicuous diversity animating Italian society articulated through class, gender, and ethnolinguistic groups to be studied across range of texts, some selected from literary canon, but others purely oral (tales, songs, proverbs, cures and curses, secular and ritual drama). S/U or letter grading.

**260B. Women in Italian Culture. (4)** Lecture, three hours. Designed for graduate students. Conditions of women within Italian society, with concentration on specific works produced by women and/or representing women's conditions in either medieval/Renaissance or contemporary time. S/U or letter grading.

**260C. Studies in Italian Cinema. (4)** Lecture, three hours. Designed for graduate students. Italian cinema compared with other European countries' and Hollywood's cinema, with focus on its development from its origins through Fascist times to neorealism, its legacy, different genres, and contemporary scene. S/U or letter grading.

**298. Variable Topics in Italian Studies. (4)** Lecture, three hours; discussion, one hour. Designed for graduate students. Seminar focusing on themes and issues outside the uniquely Italian literature topics covered in regular departmental graduate courses.

**370. Problems and Methods in Teaching Italian. (4)** Lecture, two hours. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495A-495B-495C. Teaching Italian at College Level. (2 to 4 each)** Seminar, to be arranged. S/U grading. **495A.** Study methods in preparation for teaching Italian at college level, with emphasis on teaching proficiency-oriented instruction. May not be applied toward MA course requirements. **495B.** Continuation of course 495A; study of contemporary issues in Italian language pedagogy. **495C.** Effective uses of technology in foreign language classroom. Project-based seminar in which students develop materials for classroom instruction as well as an electronic teaching portfolio.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Studies. (2 to 12)** May be repeated twice for credit. S/U grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (2 to 12)** S/U grading.

599. PhD Research and Writing. (2 to 12) May be repeated. S/U grading.

## Scandinavian Lower-Division Courses

1. Elementary Swedish. (4) Discussion, four hours. P/NP or letter grading.

**2. Elementary Swedish. (4)** Discussion, four hours. Enforced requisite: course 1. P/NP or letter grading.

**3. Elementary Swedish. (4)** Discussion, four hours. Enforced requisite: course 2. P/NP or letter grading.

**4. Intermediate Swedish. (4)** (Formerly numbered 105A.) Lecture, three hours. Requisite: course 3. Readings, composition, and conversation in Swedish. P/NP or letter grading.

**5. Intermediate Swedish. (4)** (Formerly numbered 105B.) Lecture, three hours. Requisite: course 4. Readings, composition, and conversation in Swedish. P/NP or letter grading.

**6. Intermediate Swedish. (4)** (Formerly numbered 105C.) Lecture, three hours. Requisite: course 5. Readings, composition, and conversation in Swedish. P/NP or letter grading.

**11. Elementary Norwegian. (4)** Discussion, four hours. P/NP or letter grading.

**12. Elementary Norwegian. (4)** Discussion, four hours. Enforced requisite: course 11. P/NP or letter grading.

**13. Elementary Norwegian. (4)** Discussion, four hours. Enforced requisite: course 12. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**40. Heroic Journey in Northern Myth, Legend, and Epic. (5)** Lecture, three hours. Not open for credit to students with credit for course 40W. All readings in English. Comparison of journeys of heroes. Readings in Nordic mythology, legend, folktale, and epic. Cultural and historic backgrounds to texts. P/NP or letter grading.

**40W. Heroic Journey in Northern Myth, Legend, and Epic. (5)** Lecture, two hours; discussion, two hours. Enforced requisite: English Composition 3. Not open for credit to students with credit for course 40. All readings in English. Comparison of journeys of heroes. Readings in Nordic mythology, legend, folktale, and epic. Cultural and historic backgrounds to texts. Satisfies Writing II requirement. Letter grading.

**50. Introduction to Scandinavian Literatures and Cultures. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 50W. Designed for students in general and for those wishing to prepare for more advanced and specialized studies in Scandinavian literature and culture. Selected works from literatures of Denmark, Norway, Sweden, Iceland, and Finland, ranging from myth, national epic, saga, and folktale through modern novel, poem, play, short story, and film, read in English and critically discussed. P/NP or letter grading.

**50W. Introduction to Scandinavian Literatures and Cultures. (5)** Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 50. Designed for students in general and for those wishing to prepare for more advanced and specialized studies in Scandinavian literature and culture. Selected works from literatures of Denmark, Norway, Sweden, Iceland, and Finland, ranging from myth, national epic, saga, and folktale through modern novel, poem, play, short story, and film, read in English and critically discussed. Satisfies Writing II requirement. Letter grading.

**60. Introduction to Nordic Cinema. (5)** Lecture, three hours. Not open to students with credit for course 60W. Broad introductory overview of cinematic traditions of Nordic countries. Survey of wide range of films to become familiar with several significant threads running throughout history of Nordic film, while simultaneously building necessary tools with which to write effectively about film narrative. Offers historical and theoretical framework for understanding Nordic cinema by reading several relevant texts touching on issues such as globalization, immigration, Dogme 95, and feminist film theory. P/NP or letter grading.

**60W. Introduction to Nordic Cinema. (5)** Lecture, two hours; discussion, two hours. Enforced requisite: English Composition 3 or English as a Second Language 36. Not open for credit to students with credit for course 60. Introduction to cinematic traditions of Nordic countries, with emphasis on construction of other or outsider as conceptual category. Survey of wide range of films to interrogate relationship between various forms of minority discourse and dominant values, institutions, and mechanisms and instruments of social control. Investigation of how these cinematic narratives of dominant normativity and diversity reflect cultural anxieties surrounding identity, ideology, collective memory, and power relationships. Screenings supplemented with relevant theoretical texts to give tools necessary to more effectively contextualize and analyze images. Satisfies Writing II requirement. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**C131. Introduction to Viking Age. (4)** Lecture, three hours. History, society, and culture of early Scandinavians. All texts in English, including readings in Old Norse sagas and *Eddas*. Concurrently scheduled with course C231. Letter grading.

**C133A. Saga. (4)** Seminar, three hours. Sagas are largest extant medieval prose literature. Texts in English, with selections from different types of Icelandic sagas. Consideration of history and society that produced these narratives. Concurrently scheduled with course C233A. Letter grading.

**133C. Social Network Analysis and Icelandic Family Saga. (4)** Seminar, three hours. Exploration of how character interactions can be used as basis for developing social network view of stage on which saga action plays out. Examination of how best to model sagas as dynamic social networks and learn about metrics and analytical approaches from social network analysis (SNA) that deepen understanding of saga actions. SNA provides additional opportunity to explore hypothetical situations and recognize alternative social pathways that may have led to other types of community formations. Study of Icelandic saga toward increasing complexity, developing understanding of characters and character roles, and using this as basis of preliminary investigations. P/NP or letter grading.

**134. Scandinavian Mythology. (4)** Seminar, three hours. Overview of major gods and goddesses, heroes and heroines, narratives and adventures that make up lore collectively referred to as Scandinavian, or Norse, myth. Reading and examination of this lore that is chiefly preserved in two collections traditionally called Poetic (or Elder) Edda and Prose (or Younger) Edda. P/NP or letter grading.

**C137. Old Norse Literature and Society. (4)** Seminar, three hours. Critical issues in medieval Scandinavian studies. May be repeated for credit. Concurrently scheduled with course C237. Letter grading.

**138. Vikings. (5)** Lecture, three hours. Survey of history, anthropology, and archaeology of Scandinavian societies in Viking Age. Consideration of impact of Vikings on Europe and beyond, and depiction of Vikings in sagas and other post-Viking-Age sources. Readings draw on medieval texts and secondary material. P/NP or letter grading.

**C141A. Theory of Scandinavian Novel. (4)** Seminar, three hours. Analysis of predominant structures of Scandinavian novel from its 18th-century beginnings through its rise in 19th century and its 20th-century evolution. Discussion of application of contemporary critical theories to novels. May be concurrently scheduled with course C241A. P/NP or letter grading.

**141C. Short Story in Scandinavia. (4)** Seminar, three hours. Exploration of range of classic short story and novella texts from Scandinavian literary canon, with stories by authors such as Hans Christian Andersen, Jens Peter Jacobsen, Alexander Kielland, Amalie Skram, Sigbjørn Obstfelder, Knut Hamsun, Isak Dinesen, and Rubén Palma. Examination of authors' lives and oeuvres, larger Nordic/European literary movements of 19th and 20th centuries, and tropes and conventions of short stories themselves. P/NP or letter grading.

**142A. Introduction to Nordic Theater and Drama. (4)** Lecture, three hours. Examination of artistic legacy of Henrik Ibsen and August Strindberg in context of emergence of modern Nordic theater and drama as whole, as well as important contributions of their contemporaries and successors. Readings include plays, letters, speeches, and memoirs by Ludvig Holberg, Henrik Ibsen, August Strindberg, Pär Lagerkvist, Kjeld Abell, Eeva-Liisa Manner, Hrafnhildur Hagalín Gudmundsdóttir, and Jonas Hassen Khemiri. P/NP or letter grading.

**143A. Scandinavian Detective Fiction. (4)** Seminar, three hours. Scandinavian authors have been writing detective fiction for years. Maj Sjöwall and Per Wahlöö were famous worldwide in 1960s and 1970s, especially with their Martin Beck series, and once they had established that Scandinavian writers could be successfully translated into many languages, others fol-

lowed. Scandinavian authors, while following traditional rules of crime fiction, also analyze and often criticize values and cultures of their societies. Reading of these works as representations of critical social and intellectual problems not only in Scandinavia, but in Europe and world at large. P/NP or letter grading.

**143C. Scandinavian Crime Literature. (4)** Seminar, three hours. Introduction to background of crime fiction and its relation to Scandinavia. P/NP or letter grading.

**C145A. Henrik Ibsen. (4)** Seminar, three hours. Readings and discussion of selected plays by Henrik Ibsen. May be concurrently scheduled with course C245A. P/NP or letter grading.

**C145B. Knut Hamsun. (4)** Seminar, three hours. Readings and discussion of selected works by Knut Hamsun and other 19th- and 20th-century Scandinavian writers who explored theme of nature as modern idyll. May be concurrently scheduled with course C245B. P/NP or letter grading.

**C146A. August Strindberg. (4)** Seminar, three hours. August Strindberg's portrayals of marital conflict reflected and shaped literary representation of so-called battle of sexes. His work, as well as its literary transformations, placed into Scandinavian, European, and feminist context. May be concurrently scheduled with course C246A. P/NP or letter grading.

**147A. Hans Christian Andersen. (4)** Lecture, two hours; discussion, one hour. Study of works of Hans Christian Andersen, Danish novelist, dramatist, and writer of tales, including consideration of his literary background and of his times. Analysis of his works in terms of their structure, style, and meaning. P/NP or letter grading.

**C147B. Søren Kierkegaard. (4)** Seminar, three hours. Readings and discussion of selected works by Søren Kierkegaard and other existentialist writers. May be concurrently scheduled with course C247B. P/NP or letter grading.

**147C. Karen Blixen. (4)** Lecture, three hours. Investigation of life, work, writings, and legacy of Danish author Karen Blixen, also known in the English-speaking world as Isak Dinesen. Focus on literary and philosophical paradoxes personified and articulated by enigmatic, controversial, and widely acclaimed Dinesen. Using memoirs, short fiction, and essays by Dinesen, interrogation of aesthetic theory, historiography and biography, feminist theory, postmodern and transcolonial theory, and identity. Secondary readings include texts by Bhabha, Gilbert and Gubar, JanMohamed, Kierkegaard, Nietzsche, Ngugi, Said, and Thurman. P/NP or letter grading.

**154. Romanticism. (4)** Seminar, three hours. Exploration of Romanticism in Scandinavian literature. Reading and discussion of different approaches to Romanticism and analysis of works of prominent Scandinavian writers from Romantic period to understand Scandinavian Romanticism in larger European context, including work from both English and German Romantic writers and artists. P/NP or letter grading.

**C155. Modern Breakthrough. (4)** (Formerly numbered 155.) Seminar, three hours. Readings and discussions of selected works of realism, naturalism, and symbolism in late 19th-century Scandinavian literature and art. Concurrently offered with course C255. P/NP or letter grading.

**156. Scandinavian Literature of 20th Century. (4)** Seminar, three hours. Readings and discussion of selected works of modern Scandinavian literature from beginning of century to present. P/NP or letter grading.

**157. Contemporary Nordic Literature. (4)** Seminar, three hours. Reading and analysis of selected texts by major 20th-century Swedish authors. P/NP or letter grading.

**161. Introduction to Nordic Cinema. (4)** Seminar, three hours. Designed for students in general and for those preparing for more advanced studies in Scandinavian literature and culture. Viewing and discussion of films by Ingmar Bergman and other Scandinavians. P/NP or letter grading.

**C163A. Introduction to Danish Cinema. (4)** Seminar, three hours. Introduction to history of cinema in Denmark, as well as to some fundamental concepts in study of film. Deliberately broad and historically centered approach to development of cinema in Denmark rather than focus on films of particular directors or topics. Theoretical readings from important critics, including Kracauer, Bazin, Metz, and Chatman, along with several directed exercises, to develop vocabulary and critical method for discussing films in general and Danish cinema in particular. Other readings include selections from Hjort, Sandberg, Tangherlini, and other Scandinavian theorists. Concurrently scheduled with course C263A. P/NP or letter grading.

**C163B. Introduction to Swedish Cinema. (4)** Lecture, three hours. Introduction to and exploration of history of Swedish cinema from silent era to present. Filmmakers include auteurs in international canon, such as Victor Sjöström, Mauritz Stiller, and Ingmar Bergman, as well as other key Swedish filmmakers such as Gustaf Molander, Alf Sjöberg, Mai Zetterling, Vilgot Sjöman, Jan Troell, Lukas Moodysson, and Josef Fares. Development of Scandinavian high art cinema and popular genres such as rural romanticism, melodrama, sex, crime, and horror. All films have English subtitles. Concurrently scheduled with course C263B. P/NP or letter grading.

**C163C. Introduction to Norwegian Cinema. (4)** Seminar, three hours. Introduction to and exploration of history of Norwegian cinema from silent era to present. Filmmakers include Tancred Ibsen, Arne Skouen, Edith Carlmar, Nils Gaup, Erik Skjoldbjærg, Bent Hamer, Khalid Hussain, and Petter Næss. Particular focus on popular genres such as war films, horror, noir, romantic comedies, and documentaries. Concurrently scheduled with course C263C. P/NP or letter grading.

**165B. Vikings on Film. (4)** Seminar, three hours. Exploration of representations of Vikings in medium of film, considering Viking films within their historic and cultural contexts. How does representation of Vikings on film correspond to historical reality of Vikings? What have Vikings come to signify in modern era and why? Do we see development in idea of Vikings over time that is reflected in films from different periods? How do representations of Vikings in films produced in Scandinavia differ from their representations in films from other cultures? How do we see changing ideas about gender, ethnicity, dis/ability, sexual preference, and other aspects of identity reflected in Viking films? Development of critical thinking and close textual analysis skills. All readings and films in English or with English subtitles. P/NP or letter grading.

**C166A. Ingmar Bergman. (4)** Seminar, three hours. Exploration of Ingmar Bergman's development as film artist through various periods, spanning mid-1940s and late 1970s. Contextualization of work of this most personal of filmmakers within multiple frameworks of postwar Swedish film industry, international art cinema movement, and issues of auteur filmmaking. Course readings and viewing of 10 Bergman films. All films have English subtitles. Concurrently scheduled with course C266A. P/NP or letter grading.

**C166C. Carl Dreyer. (4)** Seminar, three hours. Carl Theodor Dreyer (1889 to 1968) is not only one of great masters of Nordic cinema, but of world cinema as well. Focus on films that Dreyer made during near half century between 1919 and 1964. Contextualization of silent and sound works of this most personal of filmmakers within multiple frameworks: Danish national film industry, transnational European cinema, and issues of auteur filmmaking. Writings by key Dreyer scholars such as David Bordwell, Ray Carney, Paul Schrader, Mark Sandberg, and others, as well as Dreyer's own writings on cinema. All films have English intertitles or subtitles. Concurrently scheduled with course C266C. P/NP or letter grading.

**C171. Introduction to Scandinavian Folklore. (4)** Seminar, three hours. Introduction to fairy tales and legends of Scandinavian tradition as well as to interpretive methodologies that strive to answer question why do people tell stories that they tell? Concurrently scheduled with course C271. Letter grading.

**172A. Nordic Folk and Fairy Tales. (4)** Seminar, three hours. Exploration of Nordic version of classic tale-types such as Dragon Slayer, Cinderella, Hansel and

Gretel, and King Lindorm in historic and cultural contexts. Reading of important works of Nordic and international folktale scholarship, representing historical-geographic, structuralist, psychological, feminist, disability-theory, and queer-theory approaches. Development of critical thinking and close textual analysis skills, and understanding and appreciation of genre that continues to pervade popular culture. Readings in English translation. P/NP or letter grading.

**173A. Popular Culture in Scandinavia. (4)** Seminar, three hours. Examination of popular culture in Scandinavia through study of contemporary Scandinavian literature, film, music, and art. Investigation of how issues such as globalization, immigration, and nationalism are portrayed in popular culture in Denmark, Norway, Sweden, Finland, and Iceland. Discussion of how and why human condition is interpreted through study of cultural expressions and how it is possible—taking literature, film, and art as point of departure—to analyze cultural, historical, and political expression in given piece of art. P/NP or letter grading.

**C174A. Minority Cultures in Scandinavia. (4)** Seminar, three hours. Exploration of emergence of immigrant cultures in Nordic region. Beginning in 1960s, large numbers of people from Turkey, Italy, and Pakistan began immigrating to Nordic countries, followed in subsequent decades by immigrants and refugees from Vietnam, India, Iran, Iraq, Afghanistan, Cambodia, and countries throughout Africa. Cultural landscape previously marked by relatively high degree of cultural homogeneity now characterized by broad cultural diversity. Examination of emergence of new voices in Nordic cultural landscape in wide range of cultural expressive media, including literature, film, and visual and performing arts. Exploration of emergence of new forms of Nordic languages, such as well-documented phenomenon of Rinkeby Swedish. Concurrently scheduled with course C274A. P/NP or letter grading.

**174B. Queer Scandinavia. (4)** Seminar, three hours. Queer themes in Scandinavian literature, mainly from 19th and 20th centuries. Scandinavian countries have had more progressive view on homosexuality than most other countries, and Scandinavian writers portrayed homosexuality in explicit and radical ways as early as turn of 19th century. Introduction to key theoretical works within field of gay and lesbian studies and queer studies, as well as presentation of historical view of how homosexuality has been perceived in Western world over time. P/NP or letter grading.

**C180. Literature and Scandinavian Society. (4)** Seminar, three hours. Discussion of selected aspects of Scandinavian society based on readings of contemporary literature as well as historical and/or sociological material. May be repeated for credit (as determined by undergraduate adviser) with topic change. May be concurrently scheduled with course C280. P/NP or letter grading.

**C185. Seminar: Scandinavian Literature. (4)** Seminar, three hours. Selected topics in Scandinavian prose, poetry, and drama. May be repeated for credit with consent of instructor and undergraduate adviser. May be concurrently scheduled with course C265. P/NP or letter grading.

**187FL. Special Studies: Readings in Scandinavian. (2)** Seminar, two hours. Requisite: course 105B or 106B or 107B. Students must be concurrently enrolled in affiliated main course. Additional work in Nordic languages (Danish, Icelandic, Norwegian, Swedish) to augment work assigned in main course, including reading, writing, and other exercises. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty

mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Scandinavian. (2 to 4)** Tutorial, three hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Scandinavian. (4)** Tutorial, three hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**C231. Introduction to Viking Age. (4)** Lecture, three hours. History, society, and culture of early Scandinavians. All texts in English, including readings in Old Norse sagas and *Eddas*. Concurrently scheduled with course C131. Graduate students do additional readings and write more extensive research papers. Letter grading.

**C233A. Saga. (4)** Seminar, three hours. Sagas are largest extant medieval prose literature. Texts in English, with selections from different types of Icelandic sagas. Consideration of history and society that produced these narratives. Concurrently scheduled with course C133A. Graduate students do additional readings and write more extensive research papers. Letter grading.

**233B. Advanced Old Norse Prose. (4)** Lecture, three hours. Requisite: course 132B. Readings of major saga texts. Also, secondary sources that bear on specific issues in Old Norse literature and medieval Scandinavian history. S/U or letter grading.

**234. Scandinavian Mythology. (4)** Seminar, three hours. Study of Northern myth and religion through close reading of Eddic texts and secondary sources. Letter grading.

**235A. Advanced Old Norse Poetry. (4)** Lecture, three hours. Requisite: course 132B. Readings of mythological and heroic poems from *Poetic Edda*. Secondary sources used where appropriate. S/U or letter grading.

**C237. Old Norse Literature and Society. (4)** Seminar, three hours. Critical issues in medieval Scandinavian studies. May be repeated for credit. Concurrently scheduled with course C137. Graduate students do additional readings and write more extensive research papers. Letter grading.

**C241A. Theory of Scandinavian Novel. (4)** Seminar, three hours. Preparation: advanced knowledge of one Scandinavian language. Analysis of predominant structures of Scandinavian novel from its 18th-century beginnings through its rise in 19th century and its 20th-century evolution. Discussion of application of contemporary critical theories to novels. May be con-

currently scheduled with course C141A. Graduate students may meet as group one additional hour each week and write research papers of greater length and depth. S/U or letter grading.

**C245A. Henrik Ibsen. (4)** Seminar, three hours. Preparation: advanced knowledge of one modern Scandinavian language. Readings and discussion of selected plays by Henrik Ibsen. May be concurrently scheduled with course C145A. Graduate students may meet as group one additional hour each week and write research papers of greater length and depth. S/U or letter grading.

**C245B. Knut Hamsun. (4)** Seminar, three hours. Preparation: advanced knowledge of one Scandinavian language. Readings and discussion of selected works by Knut Hamsun and other 19th- and 20th-century Scandinavian writers who explored theme of nature as modern idyll. May be concurrently scheduled with course C145B. Graduate students may meet as group one additional hour each week and write research papers of greater length and depth. S/U or letter grading.

**C246A. August Strindberg. (4)** Seminar, three hours. Preparation: advanced knowledge of one Scandinavian language. August Strindberg's portrayals of marital conflict reflected and shaped literary representation of so-called battle of sexes. His work, as well as its literary transformations, placed into Scandinavian, European, and feminist context. May be concurrently scheduled with course C146A. Graduate students may meet as group one additional hour each week and write research papers of greater length and depth. S/U or letter grading.

**C247B. Søren Kierkegaard. (4)** Seminar, three hours. Preparation: advanced knowledge of one modern Scandinavian language. Readings and discussion of selected works of Søren Kierkegaard and other existentialist writers. May be concurrently scheduled with course C147B. S/U or letter grading.

**C255. Modern Breakthrough. (4)** Seminar, three hours. Readings and discussions of selected works of realism, naturalism, and symbolism in late 19th-century Scandinavian literature and art. Concurrently offered with course C155. S/U or letter grading.

**C263A. Introduction to Danish Cinema. (4)** Seminar, three hours. Introduction to history of cinema in Denmark, as well as to some fundamental concepts in study of film. Deliberately broad and historically centered approach to development of cinema in Denmark rather than focus on films of particular directors or topics. Theoretical readings from important critics, including Kracauer, Bazin, Metz, and Chatman, along with several directed exercises, to develop vocabulary and critical method for discussing films in general and Danish cinema in particular. Other readings include selections from Hjort, Sandberg, Tangherlini, and other Scandinavian theorists. Concurrently scheduled with course C163A. S/U or letter grading.

**C263B. Introduction to Swedish Cinema. (4)** Lecture, three hours. Introduction to and exploration of history of Swedish cinema from silent era to present. Filmmakers include auteurs in international canon, such as Victor Sjöström, Mauritz Stiller, and Ingmar Bergman, as well as other key Swedish filmmakers such as Gustaf Molander, Alf Sjöberg, Mai Zetterling, Vilgot Sjöman, Jan Troell, Lukas Moodysson, and Josef Fares. Development of Scandinavian high art cinema and popular genres such as rural romanticism, melodrama, sex, crime, and horror. All films have English subtitles. Concurrently scheduled with course C163B. S/U or letter grading.

**C263C. Introduction to Norwegian Cinema. (4)** Seminar, three hours. Introduction to and exploration of history of Norwegian cinema from silent era to present. Filmmakers include Tancred Ibsen, Arne Skouen, Edith Carlmar, Nils Gaup, Erik Skjoldbjærg, Bent Hamer, Khalid Hussain, and Petter Naess. Particular focus on popular genres such as war films, horror, noir, romantic comedies, and documentaries. Concurrently scheduled with course C163C. S/U or letter grading.

**C265. Seminar: Scandinavian Literature. (4)** Seminar, three hours. Preparation: reading knowledge of a Scandinavian language. Selected topics in Scandinavian prose, poetry, and drama. May be repeated for

credit with consent of instructor and graduate adviser. May be concurrently scheduled with course C185. S/U or letter grading.

**C266A. Ingmar Bergman. (4)** Seminar, three hours. Exploration of Ingmar Bergman's development as film artist through various periods, spanning mid-1940s and late 1970s. Contextualization of work of this most personal of filmmakers within multiple frameworks of postwar Swedish film industry, international art cinema movement, and issues of auteur filmmaking. Course readings and viewing of 10 Bergman films. All films have English subtitles. Concurrently scheduled with course C166A. S/U or letter grading.

**C266C. Carl Dreyer. (4)** Seminar, three hours. Carl Theodor Dreyer (1889 to 1968) is not only one of great masters of Nordic cinema, but of world cinema as well. Focus on films that Dreyer made during near half century between 1919 and 1964. Contextualization of silent and sound works of this most personal of filmmakers within multiple frameworks: Danish national film industry, transnational European cinema, and issues of auteur filmmaking. Writings by key Dreyer scholars such as David Bordwell, Ray Carney, Paul Schrader, Mark Sandberg, and others, as well as Dreyer's own writings on cinema. All films have English intertitles or subtitles. Concurrently scheduled with course C166C. S/U or letter grading.

**C271. Introduction to Scandinavian Folklore. (4)** Seminar, three hours. Preparation: advanced knowledge of one modern Scandinavian language. Introduction to fairy tales and legends of Scandinavian tradition as well as to interpretive methodologies that strive to answer question why do people tell stories that they tell? Concurrently scheduled with course C171. Letter grading.

**M271. Study of Oral Tradition: History and Methods. (4)** (Same as English M205A.) Seminar, three hours. Exploration of scholarly and literary attempts to study, define, analyze, promote, and/or appropriate oral traditions, from Homer and ancient Greece to origins of vernacular literatures, European romantic (re)discovery of oral tradition, 20th-century heuristic models of oral composition, and modern-day electronic media and popular verbal genres, such as joking and rapping. S/U or letter grading.

**M273. Studies in Oral Traditional Genres. (4)** (Same as English M205C.) Seminar, three hours. Exploration in depth of variety and history of, and scholarship on, a particular oral traditional genre (e.g., ballad, song, epic, proverb, riddle, folktale, legend) or a set of closely related oral traditional genres. S/U or letter grading.

**C274A. Minority Cultures in Scandinavia. (4)** Seminar, three hours. Exploration of emergence of immigrant cultures in Nordic region. Beginning in 1960s, large numbers of people from Turkey, Italy, and Pakistan began immigrating to Nordic countries, followed in subsequent decades by immigrants and refugees from Vietnam, India, Iran, Iraq, Afghanistan, Cambodia, and countries throughout Africa. Cultural landscape previously marked by relatively high degree of cultural homogeneity now characterized by broad cultural diversity. Examination of emergence of new voices in Nordic cultural landscape in wide range of cultural expressive media, including literature, film, and visual and performing arts. Exploration of emergence of new forms of Nordic languages, such as well-documented phenomenon of Rinkeby Swedish. Concurrently scheduled with course C174A. S/U or letter grading.

**C280. Literature and Scandinavian Society. (4)** Seminar, three hours. Designed for graduate students. Discussion of selected aspects of Scandinavian society based on readings of contemporary literature as well as historical and/or sociological material. May be repeated for credit (as determined by graduate adviser) with topic change. May be concurrently scheduled with course C180. Graduate students may meet for extra seminar hours and write research papers of greater length and depth. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guid-



ance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 6)** Tutorial, to be arranged with faculty member who directs the study or research. Limited to graduate Scandinavian students. Twelve units may be applied toward total course requirement, but only 4 units may be applied toward minimum graduate course requirement. May be repeated twice. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (4 to 8)** Tutorial, to be arranged with faculty member who directs the study or research. May be repeated once. May not be applied toward MA minimum course requirements. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (4)** Tutorial, to be arranged with faculty member who directs the study or research. May be repeated. S/U grading.

## Yiddish

### Lower-Division Courses

**10. From Old World to New: Becoming Modern as Reflected in Yiddish Cinema and Literature. (5)** Lecture, three hours; discussion, one hour. Use of media of Yiddish cinema (classic films and documentaries) as primary focal points to examine ways in which one heritage culture, that of Ashkenazic Jews, adapted to forces of modernity (urbanization, immigration, radical social movements, assimilation, and destructive organized anti-Semitism) from late-19th century to present. Exploration of transformational themes in depth through viewing of selected films, readings, research and weekly papers, and in-class discussions. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101A. Elementary Yiddish. (4)** Lecture, four hours. Introduction to grammar; instruction in listening, speaking, reading, and writing skills. P/NP or letter grading.

**101B. Elementary Yiddish. (4)** Lecture, four hours. Requisite: course 101A. P/NP or letter grading.

**101C. Elementary Yiddish. (4)** Lecture, four hours. Requisite: course 101B. P/NP or letter grading.

**102A. Intermediate Yiddish. (4)** Lecture, three hours. Requisite: course 101C. Grammatical exercises, reading and linguistic analysis of texts, conversation. P/NP or letter grading.

**102B-102C. Intermediate Yiddish. (4-4)** Lecture, three hours. Requisite: course 102A. Course 102B is requisite to 102C. Grammatical exercises, reading and linguistic analysis of texts, conversation. P/NP or letter grading.

**121A. 20th-Century Yiddish Poetry in English Translation. (4)** Lecture, three hours. Designed for juniors/seniors. Readings in 20th-century Yiddish poetry and drama. P/NP or letter grading.

**121B. 20th-Century Yiddish Prose and Drama in English Translation. (4)** Lecture, three hours. Designed for juniors/seniors. Readings in 20th-century Yiddish prose. P/NP or letter grading.

**121C. Special Topics in Yiddish Literature in English Translation. (4)** Lecture, three hours. Varying topics of importance and relevance to Yiddish literary study. Reading and analysis of wide range of 19th- and 20th-century literature. P/NP or letter grading.

**130. Introduction to Yiddish Culture and Language through Film. (4)** Lecture, three hours. Introduction to Yiddish language and culture, with focus on classic Yiddish films and documentaries as integral tools for accessing culture associated with this heritage language. Viewing and discussion to gain deeper understanding and appreciation of complexity and scope of Yiddish culture and in particular of annihilated Yiddish civilization of 20th century. These films represent most accessible way available to hear Yiddish spoken in fluent, natural manner. P/NP or letter grading.

**131A. Modern Yiddish Poetry. (4)** Lecture, three hours. Requisite: course 102A. Readings in modern Yiddish poetry. P/NP or letter grading.

**131B. Modern Yiddish Prose and Drama. (4)** Lecture, three hours. Requisite: course 102A. Readings in modern Yiddish prose and drama. P/NP or letter grading.

**131C. Special Topics in Yiddish Literature. (4)** Lecture, three hours. Requisite: course 131A or 131B. Varying topics of importance and relevance to Yiddish literary study. Reading and analysis of wide range of 19th- and 20th-century literature. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Yiddish. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study or more specialized investigation of topics in Yiddish, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

### Graduate Courses

**596. Directed Individual Study or Research in Yiddish. (4)** Tutorial, to be arranged with faculty member who directs study or research (course section to be identified by two-letter code using initials of sponsoring instructor—see department for ID number). May be repeated once. S/U grading.

**597. Preparation for PhD Qualifying Examinations. (4)** Tutorial, to be arranged with faculty member who directs study (see department for ID number). S/U grading.

## FAMILY MEDICINE

David Geffen School of Medicine

50-071 Center for Health Sciences  
Box 951683  
Los Angeles, CA 90095-1683

### Family Medicine

310-825-8234

Gerardo Moreno, MD, MS, FAFP, *Chair*  
Michelle Anne Bholat, MD, MPH, *Vice Chair, Clinical Affairs*

Martin A. Quan, MD, *Vice Chair, Academic Affairs*

Steven J. Shoptaw, PhD, *Vice Chair, Research*

Denise K.C. Sur, MD, *Vice Chair, Education*

## Overview

The Department of Family Medicine provides all students with a basic introduction to family-centered care in both the inpatient and ambulatory settings. During the basic clerkship, students develop an appreciation of the breadth and scope of family medicine, a basic knowledge in the broad content areas of family medicine, and fundamental clinical skills appropriate to family medicine, including the coordination and management of patients with multiple chronic diseases. The overall goal is to provide students with the opportunity to gain an understanding and appreciation of the central role of family physicians in the healthcare system, and to offer advanced clinical training for those students interested in pursuing careers in family medicine. Further, the basic curriculum includes an overview of healthcare issues facing underserved and immigrant populations in urban America.

For more details on the Department of [Family Medicine](#), see the department website.

[Family Medicine faculty](#) information is available from the department.

## Family Medicine

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Course

**199. Directed Research in Family Medicine. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## FIAT LUX

*College of Letters and Science*

A265 Murphy Hall  
Box 951571  
Los Angeles, CA 90095-1571

**Fiat Lux**

310-267-5430

**Department e-mail**

Scott H. Chandler, PhD, *Chair*

## Faculty Committee

Jonathan M. Aurnou, PhD (*Earth, Planetary, and Space Sciences*)

Kathleen Bawn, PhD (*Political Science*)

Scott H. Chandler, PhD (*Integrative Biology and Physiology*)

Juliana K. Gondek, MM (*Music*)

Jennifer A. Jay, PhD (*Civil and Environmental Engineering, Environment and Sustainability*)

Kathleen L. Komar, PhD (*Comparative Literature*)

## Overview

The *Fiat Lux* curriculum provides an intellectual space for faculty and students to explore new and interdisciplinary areas of topics within an intimate seminar setting.

The **Fiat Lux Seminar Program** is a unique educational initiative that allows faculty to broadly explore any topic and subject area while also connecting with first-year students. The *Fiat Lux* subject area and *Fiat Lux* 19 provide faculty with an intellectual space to explore new or interdisciplinary areas and topics that may be beyond their home academic department. Under the course number 19, *Fiat Lux* seminars may be offered in all academic departments.

## Fiat Lux

### Lower-Division Course

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

## FILM, TELEVISION, AND DIGITAL MEDIA

*School of Theater, Film, and Television*

103 East Melnitz Building  
Box 951622  
Los Angeles, CA 90095-1622

**Film, Television, and Digital Media**

310-206-3516

**Department e-mail**

C. Fabian Wagmister, MFA, *Chair*

## Faculty Roster

### Professors

Steven F. Anderson, MFA, PhD

Michael S. Berry, PhD

Barbara Boyle, JD

George J. Huang, MFA

Erkki I. Huhtamo, PhD

Gina Kim, MFA

Deborah Nadoolman Landis, PhD (*David C. Copley Professor of Costume Design*)

Purnima Mankekar, PhD

Denise R. Mann, PhD

William C. McDonald, MFA

Kathleen A. McHugh, PhD

Sean A. Metzger, PhD

Phyllis A. Nagy, BFA

Chon A. Noriega, PhD

Kriss S. Ravetto-Biagioli, PhD

Teri E. Schwartz, MA

Charles E. Sheetz, MFA

Amy Villarejo, PhD

C. Fabian Wagmister, MFA

### Professors Emeriti

Jerzy Antczak, MA

Janet L. Bergstrom, PhD

Nicholas K. Browne, EdD

John T. Caldwell, PhD

Gyula Gazdag, MFA

A.P. Gonzalez, MA

Stephen D. Mamber, PhD

Barbara Marks

Celia L. Mercer, MFA

Nancy Richardson, MFA

Robert Rosen, MA

Becky J. Smith, MA

Vivian Sobchack, PhD

Howard Suber, PhD

### Associate Professors

Shelleen M. Greene, PhD

Kristy M. Guevara-Flanagan, MFA

Arne O. Lunde, PhD

Ellen C. Scott, PhD

Jasmine N. Trice, PhD

Shawn G. VanCour, PhD

### Assistant Professors

Rory M. Kelly, MFA

Veronica A. Paredes, PhD

### Lecturers SOE

Harold L. Ackerman, MA, *Emeritus*

Mark McCarty, MA, *Emeritus*

### Lecturers

William J. Barminski

Jill L. Goldsmith, JD, MFA

Hans-Martin Liebing, MFA

David M. Maquiling, BFA

Eric Marin, MA

Thomas A. Nunan III, BA

Mark E. Rosman, BA

John W. Yoon, MFA

Kris T. Young, MFA

### Adjunct Professor

Liza Johnson, MFA

## Overview

The Department of Film, Television, and Digital Media is dedicated to advancing the art and craft of media making and research in an increasingly complex and technology driven world. The department believes that innovative filmmaking and a critical understanding of media culture are necessary catalysts for social change. The department seeks to cultivate a diverse body of students, empowering them to engage with different modes of thinking and creating and to contribute to social change through the collaborative arenas of media creation and intellectual inquiry.

For current or specific information about the programs and faculty members, see the [department website](#).

## Undergraduate Major

### Film and Television BA

The undergraduate Film and Television major encourages development of a personal vision that incorporates creative, practical, intellectual, and aesthetic values. Within the context of a liberal arts education, the program provides a broad background in the field and in the diversity of film and television practice, including courses in history and theory, critical thinking, animation, screenwriting, and the fundamentals of film, video, and television production.

### Capstone Major

The Film and Television major is a designated capstone major. Undergraduate students are required to complete one departmentally sponsored internship course as well as coursework related to the senior thesis concentration area. All courses, including capstone senior thesis projects, involve work shopping individual projects. Group participation in the creation and production of each student's project is core to the curriculum. Specific student learning objectives vary based on concentration area.

### Learning Outcomes

The Film and Television major has the following learning outcomes:

- Production of scholarly and artistic work in the areas of history, criticism, and theory of film, television, and digital media
- Mastery of fundamentals of preproduction, production, and postproduction of film, television, and digital media

## 490 / Film, Television, and Digital Media

- Demonstrated advanced understanding of one or more areas of study in cinema and media studies, filmmaking, screenwriting, animation, digital media, and producing

### Entry to the Major

#### Admission

Students are admitted for fall quarter only. Admission is highly competitive, and only a limited number of students can be accepted each year. In addition to the UC Application for Admission and Scholarships, first-year and transfer applicants must submit a School of Theater, Film, and Television supplemental application. For information about the supplemental application, see the [major website](#).

#### Transfer Students

Transfer applicants to the Film and Television major with 90 or more units must meet UCLA transfer requirements and, before arriving at UCLA, must complete the School of Theater, Film, and Television general education requirements by either (1) taking college courses that satisfy the school general education requirements or (2) completing the Intersegmental General Education Transfer Curriculum (IGETC) at a California community college or (3) achieving UC reciprocity through completion of general education requirements at another UC campus while a student there.

In addition to the UC Application for Admission and Scholarships, transfer applicants must submit a School of Theater, Film, and Television supplemental application. For information about the supplemental application, see the [major website](#).

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Film and Television 4, 6A, 10A, 33, 51, 84A, and one course from Theater 10, 15, 20, 28A, 28B, 28C, or 30.

#### The Major

*Required:* Film and Television 101A, 106B or 106C, 134, 150, 154, 155, 163; one cinema and media studies elective from 107, 108, 109, M111, 112, 113, 114, M117, or 122N; one capstone departmentally sponsored internship (course 195); and a senior concentration (20 units) of advanced film coursework selected from among any one or more of the following areas of study, including at least two courses from within one area:

*Cinema and Media Studies:* Film and Television 106B or 106C, 108, 109, 112, 113, 114, 128.

*Production:* Film and Television C118, 122D, C152C, 153, C154B, C157, C158, 175A, 175B, C186A, C186B, C186C.

*Screenwriting:* Film and Television 135A, 135B, 135C.

*Producing:* Film and Television 146, C147, 183A, 183B, 183C, 184B.

*Animation:* Film and Television C181A, C181B, C181C.

*Digital Media:* Film and Television C142, C144, C145, C148.

### Policies

#### The Major

Courses taken to satisfy the senior concentration may not also be applied toward other course requirements in the major.

Students should be mindful of the exigencies inherent in filmmaking and be prepared to meet the additional demands of time and costs.

Students are required to perform assignments on each other's projects. In addition, the department reserves the right to hold for its own purposes examples of any work done in classes and to retain for distribution such examples as may be selected.

## Undergraduate Minor

### Film, Television, and Digital Media Minor

The Film, Television, and Digital Media minor is designed for students who wish to augment their major program of study with a series of courses that promote the study of film, television, and digital media as art forms with social, political, cultural, and economic significance. The minor consists of a selection of lower and upper-division courses that introduce students to the practice and critical study of film, television, and digital media.

#### Admission

To enter the minor students must have declared a major other than the Film and Television BA, be in good academic standing, have a minimum 3.0 grade-point average, have completed at least three film and television courses with grades of B or better, and file an application at the Student Services Office, 103 East Melnitz Building, 310-206-8441. For information about the minor, see the [minor website](#). All degree requirements, including the specific requirements for this minor, must be fulfilled within the unit maximum set forth by each student's school or College.

#### The Minor

*Required Lower-Division Courses (8 to 11 units):* Two courses selected from Film and Television 4, 6A, 10A, 33, M50, 51, or 84A.

*Required Upper-Division Courses (20 to 28 units):* Five courses selected from Film and Television 106B, 106C, 107, 108, 109, M111, 112, 113, 114, M117, 122D, 122E, 122J, 122M, 122N, 140, 146, C181A, 183A, 183B, 183C, 184B, C186A, 187A, 187B, or 187C.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor. All units applied toward the minor must

be taken in residence at UCLA. Film and television courses taken at other institutions cannot be applied toward the minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Film and Television MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Film and Television MFA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Film and Television

### Lower-Division Courses

**1A-1B-1C. Freshman Symposium. (1-1-1)** Laboratory, three hours. Course 1A is enforced requisite to 1B, which is enforced requisite to 1C. Limited to Film and Television majors. Structured forum in which freshmen meet on regular basis to discuss curricular issues, meet with faculty members from department, and have exposure to array of guest speakers from media industries. Letter grading.

**4. Introduction to Art and Technique of Filmmaking. (5)** Lecture, four hours; discussion, one hour. Students acquire understanding of practical and aesthetic challenges undertaken by artists and professionals in making of motion pictures and television. Examination of film as both art and industry: storytelling, sound and visual design, casting and performance, editing, finance, advertising, and distribution. Exploration of American and world cinema from filmmaker's perspective. Honing of analytical skills and development of critical vocabulary for study of filmmaking as technical, artistic, and cultural phenomenon. P/NP or letter grading.

**6A. History of American Motion Picture. (6)** Lecture/screenings, six hours; discussion, one hour. Historical and critical survey, with examples, of American motion picture both as developing art form and as medium of mass communication. Letter grading.

**10A. American Television History. (5)** Lecture/screenings, four hours; discussion, one hour. Critical survey of American television history from its inception to present. Examination of interrelationships between program forms, industrial paradigms, social trends, and culture. Starting with television's hybrid origins in radio, theater, and film, contextualization, viewing, and discussion of key television shows, as well as Hollywood films that comment on radio and television.



Consideration of television programs and series in terms of sociocultural issues (consumerism, lifestyle, gender, race, national identity) and industrial practice (programming, policy, regulation, business). Letter grading.

**15. Stylistic Studies for Moving Image: Theory and Practice.** (6) Lecture, four hours; discussion, one hour. Enforced requisite: course 1A. Limited to Film and Television majors. Drawing heavily on wide array of historical examples, examination of many expressive strategies potentially usable in creation of moving image art forms: iconography, editing, composition, kinesthetics, sound, narrative, discourse, and performance. Letter grading.

**18. Media Parks: Cinematic and Television History of Theme Parks.** (2 to 6) Seminar, nine hours. Intensive examination and discussion of history and evolution of relationship between moving image media (film, television, and video games) and theme parks, in conjunction with site visits and screenings of related media. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**33. Introductory Screenwriting.** (4) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course C132/C430. Structural analysis of feature films and development of professional screenwriters' vocabulary for constructing, deconstructing, and reconstructing their own work. Screenings of films and selected film sequences in class and by assignment. P/NP or letter grading.

**37. Writing for Television: Big Ideas for Small Screen.** (2 to 6) Seminar, nine hours. Intensive introduction to television pilot form, covering style and content and how to analyze television shows and industry process of television development. Students develop beat sheet and outline for first act of original pilot episode, write teaser of original pilot episode, and create series treatment. Offered in summer only. P/NP or letter grading.

**M50. Introduction to Visual Culture.** (5) (Same as English M50.) Lecture, three hours; discussion, one hour; laboratory, two hours. Enforced requisite: satisfaction of Entry-Level Writing requirement. Study of how visual media, including advertising, still and moving images, and narrative films, influence contemporary aesthetics, politics, and knowledge. P/NP or letter grading.

**51. Digital Media Studies.** (5) Lecture, three hours; laboratory, one hour. Introduction to history, theory, and authoring skills of digital media, art, and culture. P/NP or Letter grading.

**72. Production Practice in Film, Television, and Digital Media.** (2 to 4) Lecture, three hours; laboratory, three hours. Exploration of research, analysis, and conceptualization of dramatic narrative and laboratory experience in one or more various aspects of contemporary production and postproduction practices for entertainment media, including theater, film, video, and digital media. May be repeated for maximum of 8 units. Letter grading.

**75. Lighting for Film and Television.** (2) Laboratory, 10 hours. Offered as one-week intensive course. Introduction to concepts and practice of lighting for film through discussion and intensive hands-on, laboratory experience for directors of photography, camera operators, gaffers, key grips, assistant camera, and grips. Crew rotation changes per camera setup. Review of dailies. Offered in summer only. Letter grading.

**84A. Overview of Contemporary Film Industry.** (4) Lecture, three hours; discussion, one hour. Examination of evolving economic structures and business practices in contemporary Hollywood film industry, with emphasis on operations of studios and independent distribution companies, their development, marketing, and distribution systems, and their relationship to independent producers, talent, and agencies. Letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater

depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101A. Junior Symposium.** (1) Laboratory, three hours. Course 101A is enforced requisite to 101B, which is enforced requisite to 101C. Limited to Film and Television majors. Structured forum in which juniors meet on regular basis to discuss curricular issues, meet with faculty members, and have exposure to array of guest speakers from within film industry. Letter grading.

**102A-102B-102C. Senior Symposium.** (1-1-1) Laboratory, three hours. Enforced requisite: course 101A. Course 102A is enforced requisite to 102B, which is enforced requisite to 102C. Limited to Film and Television majors. Structured forum in which seniors meet on regular basis to discuss curricular issues, meet with faculty members, and have exposure to array of guest speakers from within film and television industry. Letter grading.

**104. Film and Television Symposium.** (1 or 2) Laboratory, three hours. Structured forum in which students discuss curricular issues, meet with faculty members, and have exposure to array of guest speakers from within film industry. May be repeated three times for credit. Offered in summer only. Letter grading.

**106B. History of European Motion Picture.** (6) Lecture/screenings, six hours; discussion, one hour. Historical and critical survey, with examples, of European motion picture both as developing art form and as medium of mass communication. Letter grading.

**106C. History of African, Asian, and Latin American Film.** (6) Lecture/screenings, six hours; discussion, one hour. Critical, historical, aesthetic, and social study—together with exploration of ethnic significance—of Asian, African, Latin American, and Mexican films. Letter grading.

**107. Experimental Film.** (6) Lecture/screenings, six hours; discussion, one hour. Study and analysis of unconventional developments in motion pictures. P/NP or letter grading.

**108. History of Documentary Film.** (6) Lecture/screenings, six hours; discussion, one hour. Philosophy of documentary approach in motion pictures. Development of critical standards and examination of techniques of teaching and persuasion used in selected documentary, educational, and propaganda films. Letter grading.

**109. Advanced Topics in Documentary: New Documentary Forms.** (4) Lecture, three hours; discussion, one hour; screenings, three hours. Examination of today's documentary modes of representation and genres focusing on rise and diversification of nonfiction modes since new millennium. From short form to series based, virtual reality to interactive, crowd sourced to animated, study of new documentary forms and platforms as situated within complex media environment. Exploration of theoretical models through which documentaries can be understood, questioned, and critically approached. Letter grading.

**M111. Women and Film.** (6) (Same as Gender Studies M111.) Lecture, eight hours; discussion, one hour. Historical issues and critical approaches to women and cinema that may include authorship, stardom, female genres, and images of women in Hollywood cinema, alternative cinema, and independent cinema from silent era to present. Letter grading.

**112. Film and Social Change.** (6) Lecture/screenings, six hours; discussion, one hour. Development of documentary and dramatic films in relation to and as force in social development. Letter grading.

**113. Film Authors.** (5) Lecture/screenings, four hours; discussion, one hour. In-depth study of specific film author (director or writer). May be repeated for credit with topic change. P/NP or letter grading.

**114. Film Genres.** (5) Lecture/screenings, four hours; discussion, one hour. Study of specific film genre (e.g., Western, gangster cycle, musical, silent epic, comedy, social drama). May be repeated for credit with topic change. P/NP or letter grading.

**M117. Chicanos in Film/Video.** (5) (Same as Chicana/o and Central American Studies M114.) Lecture/screenings, five hours; discussion, one hour. Goal is to gain nuanced understanding of Chicano cinema as political, socioeconomic, cultural, and aesthetic practice. Examination of representation of Mexican Americans and Chicanos in four Hollywood genres—silent greaser films, social problem films, Westerns, and gang films—that are major genres that account for films about or with Mexican Americans produced between 1908 and 1980. Examination of recent Chicano-produced films that subvert or signify on these Hollywood genres, including *Zoot Suit*, *Ballad of Gregorio Cortez*, and *Born in East L.A.* Consideration of shorter, more experimental work that critiques Hollywood image of Chicanos. Guest speakers include both pioneer and up-and-coming filmmakers. P/NP or letter grading.

**C118. Intermediate Cinematography.** (4) Lecture, two hours; laboratory, four hours. Enforced requisite: course 101A. Intermediate study of principles of cinematography, with emphasis on exposure, lighting, and selection of film, camera, and lenses. Concurrently scheduled with course C416. Letter grading.

**C120. Digital Cinematography.** (4) Lecture, three hours. Requisites: courses 100A, 185. Advanced study of principles of digital cinematography, with emphasis on electronic exposure control, lighting, formats, cameras, and lenses. Concurrently scheduled with course C420. Letter grading.

**122D. Film Editing: Overview of History, Technique, and Practice.** (4) Lecture, three hours. Exploration of film editing techniques, how they have evolved, and continue to evolve. Examination of history of editing, as well as current editing trends, terminology, and workflow. P/NP or letter grading.

**122E. Digital Cinematography.** (4) Lecture, three hours. With lectures, screenings, and demonstrations, study of principles of digital cinematography. How tools and techniques affect visual storytelling process. Topics include formats, aspect ratios, cameras, lenses, special effects, internal menu picture manipulation, lighting, composition, coverage, high definition, digital exhibition, filtration, multiple-camera shooting. P/NP or letter grading.

**122I. Writing for Animation Series.** (5) Lecture, three hours. Introduction to craft and business of writing animation for television. Overview of history of animation produced specifically for this medium, along with its many formats. Business model has changed radically over past five decades, as have types of shows that have been created. Designed to put shows in historical perspective, with eye toward where industry is heading given changes in technology and continuing (and growing) scrutiny of outside forces such as corporations and FCC. Letter grading.

**122J. Disney Feature: Then and Now.** (5) Lecture, three hours; discussion, three hours. Study and analysis of Disney's animated features. Evaluation of why Disney's animated features have dominated until recently and ramifications of this dominance on animation and society. Letter grading.

**122M. Film and Television Directing.** (4) Lecture, three hours. Through discussions, screenings, demonstrations, and guests, exploration of script, previzualization, directing actors, directing camera coverage in relationship to story, practical on-set directing, and directing for camera. P/NP or letter grading.

**122N. History of Animation in American Film and Television.** (5) Lecture, six hours. Survey of art of animation in America from its precinema origins to recent films of Disney, Pixar, DreamWorks, Ghibli, and others. Place of animation in pop culture, racial imagery and ethnic stereotypes, growth of art form, and how it reflects American society. P/NP or letter grading.



**M124. Sex, Race, and Difference in Transnational Film. (6)** (Same as Gender Studies M124.) Lecture, three hours; discussion, one hour. Drawing on feminist media studies, training of students in media literacy so they acquire necessary skills to critically interrogate film as medium of communication and to appreciate how film provides lens to examine some of most critical issues of our time. Development of understanding of transnationality to examine how circulations of capital, labor, and commodities transect, render problematic, and sometimes reinforce national borders. Examination of role of film in both exemplifying and representing these conditions of transnationality. How films enable understanding of historical and contemporary relationships between mobility, coercion, and migration; colonialism and settler colonialism; Orientalism, geopolitics, and sexuality; cultural identity and diaspora; transnational conceptions of sexual desire and embodiment; immigration and religious difference; and criminalization of racial difference. P/NP or letter grading.

**126. Acting for Film and Television. (4)** Studio, six hours. Projects in acting for television, video, and film. May be repeated twice for credit. P/NP or letter grading.

**128. Media and Ethnicity. (4)** Lecture, three hours. Utilizing Asian American experience, exploration of impact and uses of media on contemporary American ethnic communities. Role and techniques of media influence besides community utilization and production. P/NP or letter grading.

**CM129. Contemporary Topics in Theater, Film, and Television. (2)** (Same as Theater CM129.) Lecture, two hours; screenings, two hours. Limited to junior/senior and graduate theater/film and television students. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading members of theater, film, and television professions. May be repeated twice for credit. Concurrently scheduled with course CM229. P/NP or letter grading.

**131. Introduction to Television Writing. (6 or 8)** Lecture, three hours. Introduction to television pilot form, covering style and content, as well as principles behind network needs and how pilots are chosen across broadcast, cable, and digital platforms. Students write series outline and first act of original pilot. Offered in summer only. Letter grading.

**132. Television Writing Workshop. (6)** Laboratory, three hours. Students outline first 10 pages of pilot for original one-hour drama or dramedy, or half-hour comedy series. Examination of topics such as pitching; television writing format and structure 101; current trends in television writing; how to write compelling characters and stories; and how to take idea from concept through logline, beat sheet, and outline to final professional first draft. Letter grading.

**133A. Intermediate Television Writing Variety/Sketch Comedy. (8)** Lecture, three hours. Recommended requisite: course 131. Examination of writing for sketch, talk, and other hybrid comedic television shows. Review of various types of parody including monologues, commercial parodies, slice-of-life comedy, character-driven comedy, physical comedy, comedy of absurd, and political and topical satire. Students write one comedy sketch and portfolio of monologue jokes. Offered in summer only. Letter grading.

**133B. Intermediate Television Writing One-Hour Drama/Half-Hour Dramedy Series. (6 or 8)** Lecture, three hours. Recommended requisite: course 131. Examination of one-hour drama and dramedy formats, covering style, content, and structural analysis. Review of principles behind network needs and how pilots are chosen across broadcast, cable and digital platforms. Students write series outline and first draft of original pilot series. Open to works in progress and rewrites. Offered summer only. Letter grading.

**134. Intermediate Screenwriting Workshop. (4)** Seminar, three hours. Problems in film and television writing. P/NP or letter grading.

**135A-135B-135C. Advanced Screenwriting Workshops. (6-6-8)** Laboratory, three hours. Requisite: course 134. Course 135A is requisite to 135B, which is requisite to 135C. For 135B and 135C: limited to Film and Television majors and designed for seniors. Courses in film and television writing. First act of original screenplay to be developed in course 135A, followed by second act in course 135B, and third act in course 135C. Letter grading.

**140. Interactive Expression. (4)** Lecture, six hours. Introduction to history and practice of interactive media, with emphasis on uniqueness of computer-mediated expression. Letter grading.

**C142. Digital Imagery and Visualization. (4)** Lecture, three hours; laboratory, three hours. Introductory hands-on investigation of techniques of digital still imaging and aesthetics of digital image, in context of examining dynamics of cultural constructions and visual codes. Students conceive and produce several digital image visualizations. May be repeated once for credit. Concurrently scheduled with course C242. Letter grading.

**C143. Moving Digital Image. (4)** Lecture, three hours; laboratory, three hours. Investigation of different ways of creating and manipulating linear moving images (digital video) on desktop computers, exploring both creative and theoretical aspects of this production environment. Students conceive and produce number of short projects. Concurrently scheduled with course C243. Letter grading.

**C144. Interactive Multimedia Authoring. (4)** Lecture, three hours; laboratory, three hours. Introduction to expressive and aesthetic potential of interactive digital media and its theoretical issues. Exploration of methodologies and tools for media integration, interface design, and interactive audiovisual construction. Students conceive, produce, and master individual interactive multimedia projects. May be repeated once for credit. Concurrently scheduled with course C244. Letter grading.

**C145. Creative Authoring for World Wide Web. (4)** Lecture, three hours; laboratory, three hours. Exploration of creative aspects of World Wide Web as medium for personal/collective expression. Students produce Web works and serve them online. Contextualization of medium by looking at its history, embedded ideology, and sociopolitical consequences. May be repeated once for credit. Concurrently scheduled with course C245. Letter grading.

**146. Art and Practice of Motion Picture Producing. (4)** Lecture, three hours. Exploration of role of producer as both artist and business person. Comparative analysis of screenplays and completed films. Emphasis on assembly of creative team and analysis of industrial context, both independent and studio. Screenings viewed outside of class and on reserve at Powell Library. Letter grading.

**C147. Production Management: Physical Production for Creatives. (4)** Lecture, three hours; laboratory, one hour. Analysis of procedure, problems, and budgets in planning feature-length script for film and television production, with emphasis on role of producer and creative organizational techniques of producing. Concurrently scheduled with course C247. Letter grading.

**C148. Advanced Digital Media Workgroup. (4)** Laboratory, two hours; discussion, four hours. Designed for students with previous laboratory course experience to provide opportunity to create larger-scale digital media works with advanced software tools and techniques in small process-oriented, creative workshop environment. May be repeated twice for credit. Concurrently scheduled with course C248. Letter grading.

**150. Cinematography. (4)** Lecture, three hours; laboratory, three hours. Requisite: course 101A. Corequisite: course 154. Limited to Film and Television majors. Introduction to motion imaging photography for thorough understanding of fundamental tools and principles of cinematography to create images that support and enhance story of film, achieve comprehension of principles of motion imaging photography through lectures, discussions, and screenings, develop skills of cinematographer by shooting exercises during laboratory period, and acquire appreciation of

art of cinematography. Language and skills of image construction provided, as well as image analysis and deconstruction. Letter grading.

**151. Introduction to Experimental Filmmaking. (4)** Lecture, three hours; laboratory, to be arranged. Techniques of image manipulation, design, and art direction. Production and completion of exercise (no longer than three minutes). May be repeated twice for credit. Letter grading.

**152. Film and Television Sound Recording. (4)** Lecture, three hours; laboratory, to be arranged. Limited to Film and Television majors. Introduction to principles and practices of film and television sound recording, including supervised exercises. P/NP or letter grading.

**C152C. Digital Audio Postproduction. (4)** Lecture, three hours; laboratory, three hours. Enforced requisites: courses 101A, 185. Limited to Film and Television majors. Through discussion, demonstrations, and laboratory assignments, exploration of digital audio tools and procedures available to today's filmmakers. Coverage of many technical, equipment, and software step-by-steps, with emphasis on creative process. Concurrently scheduled with course C452C. Letter grading.

**153. Motion Picture Lighting. (4)** Lecture, three hours; laboratory, three hours. Enforced requisites: courses 52, 101A, 185. Limited to Film and Television majors. Introduction to principles and tools of lighting used in visual storytelling through lectures, discussions, and screenings. Creative lighting techniques covering topics such as people, environment, spatial relationships, movement, color, special effects, and continuity. Letter grading.

**154. Film Editing. (4)** Lecture, three hours; laboratory, two hours. Requisite: course 101A. Corequisite: course 150. Limited to Film and Television majors. Introduction to artistic and technical problems of film editing, with practical experience in editing of image and synchronous sound. Letter grading.

**C154B. Advanced Film Editing. (4)** Lecture, three hours; laboratory, one hour. Preparation: submission of rough cut of existing project or proposal to edit work of another director. Enforced requisites: courses 154, 185. Limited to Film and Television majors in postproduction phase with advanced knowledge of organization and operation of postproduction process. Students may also propose to edit significant scene given to them by instructor. Concurrently scheduled with course C454B. Letter grading.

**155. Introduction to Digital Media and Tools. (4)** Lecture, six hours; laboratory, one hour. Enforced requisite: course 101A. Limited to Film and Television majors. Instruction and exercises in basic concepts and software of virtual production environments and digital postproduction tools. Letter grading.

**C157. Lighting for Film and Television. (4)** Lecture, two hours; laboratory, six hours. Requisite: course 52. Limited to Film and Television majors. Lectures, supervised exercises on stage or in exterior, screenings of scenes, and discussions aimed at learning to master lighting to create appropriate mood or atmosphere of premeditated scene recorded on film or through electronic system. May be repeated twice for credit. Concurrently scheduled with course C417. Letter grading.

**C158. Digital Workflow. (2 to 4)** Lecture, three hours; laboratory, two hours. Requisites: courses 52, 185. Limited to departmental majors. Through discussions, demonstrations, outside speakers, and laboratory assignments, demystification of ever-changing world of digital workflow. Students plan, schedule, and budget their overall workflow in preproduction. May be repeated once for credit. Concurrently scheduled with course C454C. Letter grading.

**163. Directing Cameras. (4)** Laboratory, three hours. Enforced requisite: course 101A. Limited to Film and Television majors. Investigation of expressive potential of image within and beyond narrative from directorial perspective. Experiments with working methodologies that stimulate visual creativity and positioning image as fundamental element of cinematic expression. Letter grading.

**164. Directing Actors. (4)** Laboratory, four hours. Exercises in analysis of script and character for purpose of directing actors. Emphasis on eliciting best possible performance from actors. May be repeated twice for credit. P/NP or letter grading.

**C168. Creative Location Film Production. (8)** Lecture, four hours; discussion, four hours; laboratory, to be arranged. Limited to directing or producer's program students. Problems of location, production, directing, and cinematography in various real-life practical locations. Practical application of solving problems and communication within limitations of production experience. Concurrently scheduled with course C468. Letter grading.

**175A-175B. Undergraduate Film Production. (12-4 to 8)** Limited to Film and Television majors. **175A.** Lecture, four hours; laboratory, eight hours. Requisite: course 185. Course 175A is requisite to 175B. Writing, preproduction, and production for short film not to exceed 12 minutes, including credits. Letter grading. **175B.** Lecture, three hours; laboratory, eight hours. Enforced requisite: course 175A. Completion of post-production (editing, creation of sound tracks) for short film begun in course 175A. P/NP or letter grading.

**M177. Film and Television Acting Workshop. (2)** (Same as Theater M178.) Laboratory, four hours. Workshop providing opportunities for students to rehearse, perform, and evaluate scenes. Three different production styles to which performers may need to adjust are (1) preproduction rehearsals with director, (2) single-camera experience, and (3) multiple-camera experience. May be repeated twice for credit. Letter grading.

**178. Film and Television Production Laboratory. (2 to 8)** Laboratory, to be arranged. Supervised laboratory experience in various aspects of film and television production. May be repeated for maximum of 12 units, but only 8 units may be applied toward Film and Television major. Letter grading.

**179. Digital Film and Television Production. (2-8)** Laboratory, six hours. Supervised laboratory experience in various aspects of film and television production. Offered in summer only. Letter grading.

**180A. Animation Fundamentals. (5)** Lecture, six hours; laboratory, six hours. Fundamentals of animation through exercises and preparation of short animated film. Students create 10-second film in one of traditional techniques (non-computer), with music and/or sound effects. Offered in summer only. Letter grading.

**180B. Writing for Animation. (4)** Lecture, two hours; laboratory, six hours. Analysis and practice of effective visual storytelling through creation of three production storyboards. Offered in summer only. Letter grading.

**180C. Stop Motion Fundamentals Workshop. (2 to 4)** Lecture, six hours; laboratory, six hours. Exercises designed to teach technical skills, processes, and principles of motion and timing. Use of range of materials, building animation performances in split-second increments arranged to give illusion of movement. Exploration of early history of stop motion. Collaborative creation of stop-motion film with each student directing and animating portion of film. Offered in summer only. Letter grading.

**C181A. Introduction to Animation. (5)** Lecture, three hours; laboratory, three hours. Drawing experience not required. Fundamentals of animation through preparation of short animated film. Concurrently scheduled with course C481A. P/NP or letter grading.

**C181B. Writing for Animation. (4 or 8)** Lecture, six hours; studio, to be arranged. Requisite: course C181A or consent of instructor. Research and practice in creative writing and planning for animated film. May be repeated for maximum of 16 units. Concurrently scheduled with course C481B. P/NP or letter grading.

**C181C. Animation Workshop. (4 or 8)** Studio, six hours. Preparation: storyboard at first class meeting. Requisite: course C181A. Organization and integration of various creative arts used in animation to form complete study of selected topic. May be repeated for maximum of 16 units. Concurrently scheduled with course C481C. P/NP or letter grading.

**182. Power, Identity, and Justice. (4)** Lecture, three hours. Examination of how politics, economics, labor, and identity intersect and affect representation, em-

ployment, and industry cultures, especially of groups long underserved in mainstream film, television, and media industry. Offered in summer only. P/NP or letter grading.

**183A. Producing I: Film and Television Development. (4)** Lecture, three hours. Open to nonmajors. Critical analysis of contemporary entertainment industries and practical approach to understanding and implementing producer's role in development of feature film and television scripts. Through scholarly and trade journal readings, in-class discussions, script analysis, and select guest speakers, exposure to various entities that comprise feature film and television development process. Basic introduction to story and exploration of proper technique for evaluating screenplays and teleplays through writing of coverage. May be taken independently for credit. Letter grading.

**183B. Producing II: Entertainment Economics. (4)** Lecture, three hours. Open to nonmajors. Critical understanding of strategies and operating principles that drive flow of revenue in entertainment industry. Exploration of theoretical frameworks and development of critical perspective, while studying industrial processes through which movie and television properties are financed and exploited throughout all revenue streams. May be taken independently for credit. Letter grading.

**183C. Producing III: Marketing, Distribution, and Exhibition. (4)** Lecture, three hours. Open to nonmajors. Marketing and distribution of feature films across multiple exhibition platforms and subsequent reception and consumption by audiences. Focus on engagement between distributor, exhibitor, and audience and analysis of various conceptual frameworks and industrial strategies within which these relationships are conceived and operate. May be taken independently for credit. Letter grading.

**184B. Overview of Contemporary Television Industry. (4)** Lecture, three hours. Examination of evolving economic structures and business practices in contemporary Hollywood television industry, with emphasis on operations of networks and cable companies, series development, marketing, and network branding from 1947 to present. Letter grading.

**185. Intermediate Undergraduate Film Production. (6)** Laboratory, six hours. Requisites: courses 52, 154, 155, 163. Limited to Film and Television majors. Instruction and exercises in all stages of film production. Letter grading.

**C186A. Advanced Documentary Workshop. (4)** Lecture, three hours; laboratory, three hours; fieldwork, four to six hours. Requisite: course 185. Course 186A is requisite to 186B, which is requisite to 186C. Introductory viewing and discussion of selected documentaries and instruction in various production skills necessary to create video documentaries. Completion of series of exercises from conceptualization through postproduction, culminating in production of short documentary. Concurrently scheduled with course C403A. Letter grading.

**C186B. Advanced Documentary Workshop. (4)** Lecture, three hours; laboratory, three hours; fieldwork, four to six hours. Requisite: course C186A. Intermediate viewing and discussion of selected documentaries and instruction in various production skills necessary to create video documentaries. Completion of series of exercises from conceptualization through postproduction, culminating in production of short documentary. Concurrently scheduled with course C403B. Letter grading.

**C186C. Advanced Documentary Workshop. (4)** Lecture, three hours; laboratory, three hours; fieldwork, four to six hours. Requisite: course C186B. Advanced viewing and discussion of selected documentaries and instruction in various production skills necessary to create video documentaries. Completion of series of exercises from conceptualization through postproduction, culminating in production of short documentary. Concurrently scheduled with course C403C. Letter grading.

**187A. Global Film and Television Development. (4)** Lecture, three hours. Exploration of film and television development practices in key international markets. Introduction to key international markets, prominent

global development and production entities, and their properties and development strategies. Designed to blend theory with practical application. Students read both academic literature and trade publications addressing development practices in U.S. and around world, and gain understanding of mechanisms that drive development in domestic and international territories. P/NP or letter grading.

**187B. Domestic and Global Entertainment Industry Careers and Strategies. (4)** Lecture, three hours. Exploration of select film and television career paths and strategies in U.S. and major international markets. Introduction to typical and atypical career paths and strategies of producers, screenwriters, directors, and creative executives in U.S. and abroad. Students take part in moderated discussions with domestic and international industry professionals and read both academic literature and trade publications addressing current state of domestic and global media industries. Through readings and discussions, students gain understanding of rapidly changing global entertainment landscape, and current and future employment trends and project development strategies. P/NP or letter grading.

**187C. Scripted and Unscripted Series Development for Domestic and Global Streaming Services. (4)** Lecture, three hours. Designed to enhance students' understanding of processes involved in domestic and international fiction and nonfiction development of properties for streaming services. Students are acquainted with common business and creative practices, while expanding their critical and practical understanding of quickly evolving and transforming global streaming landscape. Examination of creative development processes and strategies for scripted and unscripted series for streaming services in U.S., and similarities and differences in business as well as creative approaches in major international territories. Examination of latest trends in fiction and nonfiction development, including strategies to work with international coproduction partners and developing projects using pre-viz and virtual production techniques. Covers streaming markets in North American, Europe, Asia, and Central and South America. P/NP or letter grading.

**188A. Special Courses in Film, Television, and Digital Media. (4)** Lecture, three hours; discussion, one hour. Special topics in film, television, and digital media for undergraduate students taught on experimental or temporary basis. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**194. Internship Seminars: Film, Television, and Digital Media.** (2) Seminar, two hours. Designed for students currently in departmental internships. General introduction to contemporary film and television industries and discussion and engagement with and expansion on internship experiences. Common business practices and expansion of critical understanding of industry at large. May be repeated for credit. Letter grading.

**195. Corporate Internships in Film, Television, and Digital Media.** (2 or 4) Tutorial, one hour; internship, eight hours. Limited to juniors/seniors. Corporate internship in supervised setting in business related to film, television, and digital media industries. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**195CE. Corporate Internships in Film, Television, and Digital Media.** (4) Tutorial, one hour; fieldwork, eight to 10 hours. Limited to juniors/seniors. Corporate internship in supervised setting in business related to film, television, and digital media industries. Examination of issues related to internship site through series of reading assignments constructed by faculty sponsor and graduate student coordinator. May be repeated for credit with consent of Center for Community Engagement. Individual contract with supervising faculty member required. P/NP or letter grading.

**199. Directed Research or Senior Project in Film, Television, and Digital Media.** (2 to 8) Tutorial, three hours. Limited to senior Film and Television majors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be taken for maximum of 8 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Seminar: Research, Methods, and Resources.** (6) Seminar, three hours; laboratory, four to six hours (additional screenings and/or video laboratory work as required). Designed for graduate students. Examination and study of research methods, techniques, and resources related to film and television research, including development of computer skills for preparation of bibliographies, online database searching and retrieval and, when appropriate, use of computer/vid-eodisc technology for research. Letter grading.

**201A. Seminar: Media Industries and Cultures of Production—Foundations.** (6) Seminar, three hours; film screenings, three hours. Critical survey of various scholarly traditions and methods (ethnographic, sociological, political-economic, geographic) that have been used to study film and television production practices as cultural, social, and industrial phenomena, as basis for individual student research projects. Letter grading.

**201B. Seminar: Media Industries and Cultures of Production—Transmedia.** (6) Seminar, three hours; film screenings, three hours. Examination of contemporary production studies research and transmedia practices, including innovations in marketing, licensing, distribution, industrial organization, creative work, new technologies, and evolving relations between fans and producers in digital economy. Letter grading.

**202. Seminar: Media Audiences and Cultures of Consumption.** (6) Seminar, three hours; film screenings, three hours. Critical study of reception and use of television and electronic media and examination of theoretical approaches to culture and audience research. Consideration of issues of cultural taste, consumerism, style/lifestyle, identity, and relationships between audience, industry, and mass-marketed images/commodities. Letter grading.

**203. Seminar: Film and Other Arts.** (6) Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Studies in interrelationships between film and fine arts, or performing arts, or literature, with emphasis on ways these other arts have influenced film. May be repeated twice for credit. S/U or letter grading.

**204. Seminar: Visual Analysis.** (6) Seminar, three hours; film screenings, two to four hours. Study of visual analysis (or textual analysis), using DVD accessing features, as approach to learning what makes film great and distinct art form. Exploration of role of visual style in narrative fiction filmmaking to attempt to understand some ways it can operate. Letter grading.

**205. Seminar: Videographic Scholarship.** (6) Seminar, three hours; laboratory, three hours. Prior technical knowledge not required; technical assistance is available. Creation of individual original research projects in film/television history and analysis destined for audio-visual medium, finalized as high-resolutions DVDs. Projects may be extensions of research intended for print publication, dissertation chapters, conference presentations, teaching, etc. Equal emphasis on acquiring basic skills needed to create visual essays and on methods of research for this new form of scholarly research. Comparison of limits and advantages of print versus audio-visual publication. Use of Adobe Production Suite. Letter grading.

**206A. Seminar: European Film History.** (6) Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Studies in different periods of European cinemas or movements. Topics may include Italian neorealism, French film of 1930s, French New Wave and crime film, Weimar cinema, and Soviet silent cinema. See annual departmental listings for special topics. May be repeated twice for credit with topic change. Letter grading.

**206B. Seminar: Selected Topics in American Film History.** (6) Seminar, three hours; film screenings, three hours. Seminar with focus on specific topic or period in American film history. Letter grading.

**206C. Seminar: American Film History.** (6) Seminar, three hours; film screenings, four hours. Introduction to industrial, social, and aesthetic history of American film. Letter grading.

**206D. Seminar: Silent Film.** (6) Seminar, three hours; film screenings, two to four hours. Discussion of silent film from its beginning in 1895 to transition to sound cinema in 1927 to 1930. Film viewings discussed in terms of genre, national cinema, formal developments, and directors. Readings on film historical and theoretical issues. Letter grading.

**207. Seminar: Experimental Media.** (6) Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Studies of form, style, politics, and history of experimental, innovative, avant-garde, and minority film and video. Letter grading.

**208A. Seminar: Film Structure.** (6) Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Examination of various film conventions, both fictional and nonfictional, and of role of structure in motion picture. S/U or letter grading.

**208B. Seminar: Classical Film Theory.** (6) Seminar, three hours; film screenings, four hours. Study of principal topics and lines of inquiry that characterize theoretical writings of Arnheim, Eisenstein, Bazin, Kra-cauer, etc. Letter grading.

**208C. Seminar: Contemporary Film Theory.** (6) Seminar, three hours; film screenings, four to six hours. Requisite: course 208B. Designed for graduate students. Study of redefinition of aims and methods of film theory through contemporary writings. S/U or letter grading.

**209A. Seminar: Documentary Film.** (6) Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Nonfictional film and its relation to contemporary culture. S/U or letter grading.

**209D. Seminar: Animated Film.** (6) Seminar, three hours; film screenings, three hours. Designed for graduate students. Critical study of animated film: its historical development, structure, style, use, and relation to contemporary culture. S/U or letter grading.

**210. Viewing and Reading Media.** (4) Lecture, three hours; media viewings, three hours. Study engages media originating on different platforms and deriving from different modes of production, cultural locations, and various critical approaches. Each approach considers various components of what can be read in individual work including form and aesthetics, organization (narrative/nonnarrative, fiction/nonfiction), orienta-

tion to spectator or user, industrial or artisanal production context, and relation to historical or cultural moment. Letter grading.

**211. Seminar: Historiography.** (6) (Formerly numbered 211A.) Seminar, three hours. Limited to MA and PhD candidates. Examination of function and methods of historiography/history as branch of field of media studies by examining variety of methodologies, debates, and strategies that have shaped often provocative, contradictory, and contested ways that history has been imagined and applied to field of media studies. S/U or letter grading.

**212. Cinema and Media Studies Graduate Colloquium.** (2) Lecture, two hours. Exchange with scholars inside and outside department through lectures and academic paper presentation and offers students practice in presenting papers for professional conferences, CV writing seminars, job market/interview preparation seminars, and discussion of current topics and trajectory of area of cinema and media studies. May be repeated for maximum of 14 units. S/U grading.

**213. Capstone Seminar.** (6) Seminar, three hours. Limited to Film and Television MA candidates. Capstone course for cinema and media studies master's program. Students write, revise, and present comprehensive essay on preapproved topic derived from their MA coursework. Letter grading.

**215. Seminar: Text and Context in Intermedia Age.** (6) Seminar, three hours. Limited to Film and Television MA and PhD candidates. Introduction to range of textual and contextual approaches to studying cinema and media. Broad historical overview of intellectual history of field, combining foundational works with more recent publications that address similar theoretical questions. Combines foundational writings in cultural and critical theory with key works in cinema and media studies that deploy these theories to analyze screen texts, cultures, institutions, and industries. S/U or letter grading.

**216. Film, Costume, and Character.** (6) Seminar, three hours; film screenings, three hours. Exploration of integration of costume design into filmmaking process and illumination of work required to bring characters from written page to life. Discussion of practice of costume design. Analysis of films from various genres. Letter grading.

**217A. Seminar: American Television History.** (6) Seminar, three hours; screenings, four hours. Critical survey of U.S. television industry from its inception to present. Examination of programming and changes within industry by considering range of technological, economic, aesthetic, social, and cultural dimensions. Letter grading.

**217B. Seminar: Selected Topics in Television History.** (6) Seminar, three hours; screenings, three hours. Advanced critical seminar, with focus on specific topic or area (historical period, industry, programming, genre, or social formation) in domestic or international television. Letter grading.

**218. Seminar: Culture, Media, and Society.** (6) Seminar, three hours; screenings/discussion, four hours. Emphasis on discourse of other(s). Thematization of other is concerned with theories of difference rather than similarity or identity—with how other cultures enter into politics of representation and representation of politics through metaphors of (1) difference without opposition, (2) heterogeneity without hierarchy, and/or (3) otherness without ethnocentrism. Examination of how women, national minorities, and Third World peoples have been rendered others; place of cinematic apparatus in this process and how academization of others is positioned vis-à-vis mainstream critical discourse. Letter grading.

**219. Seminar: Film and Society.** (6) Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Study of ways film affects and is affected by social behavior, belief, and value systems; considered in relation to role of media in society. May be repeated once for credit. S/U or letter grading.

**220. Seminar: Television and Society.** (6) Seminar, four hours; screenings/discussion, three hours. Designed for graduate students. Study of ways television forms affect and are affected by social behavior, belief,

and value systems; study of technological and economic aspects of medium. May be repeated once for credit. S/U or letter grading.

**221. Seminar: Film Authors. (6)** Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Intensive examination of works of outstanding creators of films. May be repeated twice for credit. S/U or letter grading.

**222. Seminar: Film Genres. (6)** Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Studies of patterns, styles, and themes of such genres as Western, gangster, war, science fiction, comedy, etc. May be repeated twice for credit. S/U or letter grading.

**223. Seminar: Visual Perception. (6)** Seminar, three hours; film screenings, three hours. Aesthetic, psychological, physiological, and phenomenological approaches to vision as they relate to ways in which viewers experience and see film, television, and digital media. Letter grading.

**224. Computer Applications for Film Study. (6)** Lecture, three hours; film screenings, three hours. Survey of computer applications relevant to film study, principally computer-videodisc systems and image capture technology. S/U or letter grading.

**225. Seminar: Videogame Theory. (6)** Seminar, three hours; laboratory, three hours. Videogame theory, with exploration of nature of medium, rather than looking at history, industrial practice, social effects, or any other of many interesting questions that games also raise. Acknowledgment of roots in film, television, and media studies and investigation of emerging videogame field. S/U or letter grading.

**CM229. Contemporary Topics in Theater, Film, and Television. (2)** (Same as Theater CM229.) Lecture, two hours; screenings, two hours. Limited to junior/senior and graduate theater/film and television students. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading members of theater, film, and television professions. May be repeated twice for credit. Concurrently scheduled with course CM129. S/U or letter grading.

**C242. Digital Imagery and Visualization. (4)** Lecture, three hours; laboratory, three hours. Introductory hands-on investigation of techniques of digital still imaging and aesthetics of digital image, in context of examining dynamics of cultural constructions and visual codes. Students conceive and produce several digital image visualizations. May be repeated once for credit. Concurrently scheduled with course C142. Letter grading.

**C243. Moving Digital Image. (4)** Lecture, three hours; laboratory, three hours. Investigation of different ways of creating and manipulating linear moving images (digital video) on desktop computers, exploring both creative and theoretical aspects of this production environment. Students conceive and produce number of short projects. Concurrently scheduled with course C143. Letter grading.

**C244. Interactive Multimedia Authoring. (4)** Lecture, three hours; laboratory, three hours. Introduction to expressive and aesthetic potential of interactive digital media and its theoretical issues. Exploration of methodologies and tools for media integration, interface design, and interactive audiovisual construction. Students conceive, produce, and master individual interactive multimedia projects. May be repeated once for credit. Concurrently scheduled with course C144. Letter grading.

**C245. Creative Authoring for World Wide Web. (4)** Lecture, three hours; laboratory, three hours. Exploration of creative aspects of World Wide Web as medium for personal/collective expression. Students produce Web works and serve them online. Contextualization of medium by looking at its history, embedded ideology, and sociopolitical consequences. May be repeated once for credit. Concurrently scheduled with course C145. Letter grading.

**246. Seminar: Issues in Electronic Culture. (6)** Seminar, three hours; laboratory, three hours. Critical studies seminar with major hands-on laboratory component that explores impact of new digital technologies on contemporary culture and aesthetics. Students do laboratory projects using visualization, image manipulation tools, and Internet authoring tools. Letter grading.

**C247. Production Management: Physical Production for Creatives. (4)** Lecture, three hours; laboratory, one hour. Analysis of procedure, problems, and budgets in planning feature-length script for film and television production, with emphasis on role of producer and creative organizational techniques of producing. Concurrently scheduled with course C147. Letter grading.

**C248. Advanced Digital Media Workgroup. (4)** Laboratory, two hours; discussion, four hours. Designed for students with previous laboratory course experience to provide opportunity to create larger-scale digital media works with advanced software tools and techniques in small process-oriented, creative workshop environment. May be repeated twice for credit. Concurrently scheduled with course C148. Letter grading.

**270. Seminar: Film Criticism. (6)** Seminar, three hours; film screenings, four to six hours. Designed for graduate students. Study of key aesthetic questions of analysis and evaluation in relation to central works of motion picture criticism. May be repeated once for credit. S/U or letter grading.

**271. Seminar: Television Criticism. (6)** Seminar, four hours; screenings/discussion, three hours. Designed for graduate students. Analysis of major forms of television production and criticism it has elicited. May be repeated once for credit. S/U or letter grading.

**273. Seminar: Contemporary Film and Television Criticism. (6)** Seminar, three hours; film and television screenings, four to six hours. Limited to Film and Television PhD candidates. Study and practice of analytic and critical response, with emphasis on contemporary film and television. S/U or letter grading.

**274. Seminar: Research Design. (6)** Seminar, three hours. Designed for second-year Film and Television PhD students. Examination of general principles that govern formulation of major research projects and preparation of prospectus for PhD dissertation. S/U or letter grading.

**274A. Research Design 1: Initial Research Design. (6)** Seminar, three hours. Introduction to components of dissertation prospectus including development of fields of study, situating one's work in relation to fields of audio/visual material. Study helps prepare students for comprehensive examinations and decide which fields of study best align with chosen methodological approaches. Establishment of a literature review, work plan, bibliography, filmography, and/or archive of visual/audio media. Development of research questions, bibliographic research, literature review, methodology of evidence gathering in relation to project. Setting and justification of project scope. S/U or letter grading.

**274B. Research Design 2: Bibliography. (6)** Seminar, three hours. Building reading lists and reading texts essential to development of dissertation project. S/U or letter grading.

**274C. Research Design 3: Writing Prospectus. (6)** Seminar, three hours. Workshop in writing dissertation prospectus. S/U or letter grading.

**276. Seminar: Non-Western Films. (6)** Seminar, three hours (additional hours as required); film screening, three hours. Designed for graduate students. Study of aesthetic and ideological impulses of selected films from Asia, Africa, and Latin America. S/U or letter grading.

**277. Seminar: Narrative Studies. (6)** Seminar, four hours; screenings/discussion, three hours. Designed for graduate students. Study of writings on theory of narrative structure and their significance for analysis of film forms. S/U or letter grading.

**282A. TV Development 1. (4)** Seminar, three hours. Basic tenets and analysis of television scripted shows and contemporary industry production and business

practices. Development of original show concepts and pitch for review and feedback by class, instructor, and guests. Letter grading.

**282B. TV Development 2. (4)** Seminar, three hours. Advanced analysis of television scripted shows and contemporary industry production and business practices. Continued development of original show concepts and series proposals for review and feedback by class, instructor, and guests. Letter grading.

**283A. Fundamentals of Writing for Television. (4)** Lecture, three hours. Comprehensive overview of today's television landscape for writers, with emphasis on new structures and formats ushered in by on-demand, digital television revolution. Letter grading.

**283B. Writing Half-Hour Comedy Pilot and Series Bible. (8)** Seminar, three hours. Enforced requisite: course 430. Examination of basics of half-hour pilot format, style, and content, and learning of principles behind network needs and choices in choosing pilots. Workshop in which to discuss ideas and issues with class and instructor. Weekly progress on original half-hour pilot and series bible required. Letter grading.

**283C. Running Television Comedy Room. (4)** Seminar, three hours. Enforced requisite: course 283B. Practical knowledge about skills necessary to be writer/executive producer of half-hour comedy show. Focus on community building, collaboration, and leadership skills needed to successfully function in writers' room, as well as breaking stories, writing, and rewriting television scripts. Letter grading.

**284A. Writing One-Hour Drama Speculative Episode. (4)** Seminar, three hours. Basic tenets and analysis of television drama shows and contemporary industry production and business practices. Students write speculative (spec) episode for existing one-hour drama series. Letter grading.

**284B. Writing One-Hour Drama Pilot and Series Bible. (8)** Seminar, three hours. Enforced requisite: course 430. Examination of basics of drama pilot format, style, and content, and learning of principles behind network needs and choices in choosing pilots. Workshop in which to discuss ideas and issues with class and instructor. Weekly progress on original drama pilot and series bible required. Letter grading.

**284C. Running Television Drama Room. (4)** Seminar, three hours. Enforced requisite: course 284B. Practical knowledge about skills necessary to be writer/executive producer of one-hour drama show. Focus on community building, collaboration, and leadership skills needed to successfully function in writers' room, as well as breaking stories, writing, and rewriting television scripts. Letter grading.

**287A. Introduction to Art and Business of Producing I. (4)** Seminar, three hours. Introduction for first-year producers program students to producer's role in navigating unique dynamic between art and commerce in entertainment industry. Overview of development, production, and distribution of feature films for worldwide theatrical market, including identifying material, attracting elements, and understanding basics of studio and independent financing and distribution. S/U or letter grading.

**287B. Introduction to Art and Business of Producing II. (4)** Seminar, three hours. Requisite: course 287A. Builds on principles taught in course 287A and presents continuation of study of development, production, and distribution of feature films for worldwide theatrical market, including identifying material, attracting talent elements, and understanding basics of studio and independent financing and distribution. Minimum of two unproduced screenplays to be presented for review by class and instructor to begin identifying potential thesis projects. S/U or letter grading.

**287C. Introduction to Art and Business of Producing III. (4)** Seminar, three hours. Requisites: courses 287A, 287B. Builds on principles taught in courses 287A and 287B. Presentation of screenplays prepared in course 287B for review by class and instructor with goal of isolating and identifying primary and secondary thesis projects. Discussions of script analysis and creating set of viable development notes for primary projects.



Completion of written outline for original projects and pitching of primary projects to panel of industry executives for further feedback. S/U or letter grading.

**288A-288B. Feature Film Development I, II. (4-4)** Lecture, three hours. Course 288A is requisite to 288B. Practical hands-on approach to understanding and implementing producer's role in development of feature film screenplay and negotiating particulars of production process. Through in-class discussions, script analysis, story notes, and select guest speakers, exposure to various entities that comprise feature film development process. S/U or letter grading. **288A.** Basic introduction to story and exploration of proper technique for evaluating screenplays through writing of coverage. **288B.** Deeper evaluation of screenplay through writing of story notes.

**289A. Current Business Practices in Film and Television. (4)** Discussion, three hours. Requisite: course C247. Designed for graduate students. Examination of current status of financing/production/distribution agreements, union agreements, music, copyright, etc., necessary to understand film and television industry. S/U or letter grading.

**289B. Strategy. (4)** Lecture, three hours. Course 289A is not requisite to 289B. Examination of business realities of industry, with focus on techniques for analyzing behavior, making strategic decisions, and overcoming obstacles to achieving results as producer, writer, or director. Assignments designed to assist students in articulating and achieving their goals and to help them effectively transition from classroom to their careers in entertainment industry. S/U or letter grading.

**289C. Independent Spirit: Creative Strategies for Financing and Distributing Independent Features. (4)** Lecture, three hours. Course 289B is not requisite to 289C. Key insights into financing and distribution of independent or specialty films. Topics include film finance, production, marketing, distribution, agents, and new technology, with emphasis on applying this knowledge to individual student projects. S/U or letter grading.

**290A. Thesis Workshop 1. (4)** Seminar, three hours. Forum for roundtable strategy sessions and mock story meetings with instructor, students, and various industry guests. Development of one story idea for this project. S/U or letter grading.

**290B. Thesis Workshop 2. (4)** Seminar, three hours. Forum for roundtable strategy sessions and mock story meetings. Students must make concrete weekly progress on thesis project and adapt strategy based on feedback received. Development of marketing and business strategies for story idea set up in course 290A. S/U or letter grading.

**290C. It's a Wrap: Preparation for Your Entertainment Career. (4)** Seminar, three hours. Final stages of thesis preparation for evaluation. Guidance provided by instructor on how to effectively present selected project. Requirements include industry-related book reports, script analysis, pitching selected concept, weekly research to understand marketplace, accumulation and updating of data, and justification for potential buyers comprised of industry professionals. S/U or letter grading.

**291A. Studios versus Independents: Navigation Process. (4)** Lecture, three hours. Tools necessary for producer to navigate Hollywood entertainment industry. Topics discussed through lectures and guest speakers include impact of difficulty to navigate relationship between art and commerce in craft of filmmaking, rapid advance of new technologies, diverse new means of building finance capital for emerging producing entities, and what future may hold for truly independent filmmaker. S/U or letter grading.

**291B. Feature Film Marketing. (4)** Lecture, three hours. Course 291A is not requisite to 291B. Examination of numerous groups that are responsible for specific marketing components and make up marketing departments. Distribution and in-theater marketing, trailers, publicity, promotions, research, and media. Mechanics and levels of intuition required to make sure movies are seen by public. S/U or letter grading.

**291C. Feature Film Distribution and Exhibition. (4)** Lecture, three hours. Course 291B is not requisite to 291C. Investigation of philosophy, structure, and major players that make up entertainment industry, with emphasis on film distribution and exhibition. Through lectures, readings, and guest speakers, exploration of interrelated arenas of production, marketing, business affairs, media, and impact of international market on distribution and exhibition of studio releases. S/U or letter grading.

**292A. Overview of Network Television Management. (4)** Lecture, three hours. Designed to expand basic understanding of network and cable television business. Exploration of role of showrunner, executives from networks and production companies, packaging agents, and studios responsible for developing and creating programming. S/U or letter grading.

**292B. Adapting Intellectual Property for Television. (4)** Seminar, three hours. Advanced examination of techniques and strategies for concept ideation, property acquisition, and television adaptation. Development of television series concepts based on preexisting material. S/U or letter grading.

**292C. Running Shows: Producing for Broadcast and Cable. (4)** Lecture, three hours. Course 292B is not requisite to 292C. Exploration of role of writers-producers or showrunners in creating television shows. Designed to train writers who typically enter field as staff writers and to develop concrete tools of producers. Training of next generation of nonwriting network and studio development executives whose job it is to assist writers-producers in highly collaborative process of creating, developing, producing, and scheduling television programming. S/U or letter grading.

**294A. Contracts and Negotiation. (4)** Lecture, three hours. Survey of range of contracts involved in studio productions, including literary submission and option agreements, artist employment, director employment, writer collaboration agreements, coproduction agreements, music rights license, etc. Actual studio agreements referenced to illuminate potential consequences of each transaction. Negotiation strategy exercises. S/U or letter grading.

**294B. Entertainment Law, Business Practices, and Negotiation Strategies. (4)** Lecture, three hours. Course 294A is not requisite to 294B. Introduction to feature-length motion picture business and law from perspective of independent and studio producer. Students establish working knowledge of entertainment law and business practices through basic understanding of important legal concepts and business considerations in connection with development, production and distribution, material terms of fundamental rights and talent agreements, and negotiation strategy. S/U or letter grading.

**294C. International Financing and Distribution. (4)** Lecture, three hours. Course 294B is not requisite to 294C. Legal-based course dealing with independent finance and distribution of feature films. Topics include fundamentals of film financing, domestic distribution, international distribution, European coproductions, role of foreign sales agents and of bankers and completion bond companies. S/U or letter grading.

**295A. Art of Presentation. (4)** Lecture, three hours. Cultivation of skills needed for students to present themselves and their project goals with clarity and precision to industry professionals. Oral presentations designed to enhance student ability to deliver convincing arguments on range of topics. S/U or letter grading.

**295B. Advanced Film and Television Producing Workshop for Producers, Writers, and Directors. (4)** Lecture, three hours. Course 295A is not requisite to 295B. Designed to help producers, as well as screenwriters and directors, focus on networking opportunities and to develop strategies to bring their feature and television projects to marketplace. Case-study documents (drafts of screenplays, dailies, etc.) from current or recently produced projects provided. S/U or letter grading.

**295C. Advanced Producing: Role of Successful Producer. (4)** Lecture, three hours. Designed to provide producers with comprehensive understanding of business acumen involved in purchasing scripts for studios and independent production companies. Through script analysis and in-class discussions, students encouraged to examine not just story elements, but marketing assets inherent in pieces of material. S/U or letter grading.

**296A. Role of Talent Agencies. (4)** Lecture, three hours. Introductory overview of various departments at agencies, including motion picture literary, talent, story, packaging, and television, and examination of various interactions among each. Exercises encourage producers, writers, and directors to learn how to work effectively with individuals at talent agencies. S/U or letter grading.

**296B. Who Represents Me? (4)** Lecture, three hours. Course 296A is not requisite to 296B. In-depth analysis of different forms of representation offered by agents, managers, business managers, and lawyers and detail of legal rights and responsibilities of each. Exercises require students to represent rights holders in series of potential projects. S/U or letter grading.

**297A. Digital Media Producing 1. (4)** Seminar, three hours. Overview of changing world of storytelling through development of new technologies and new media. Conceptualization and pitch of innovative, original, digital media concepts with interactive or participatory story elements for review and feedback by class, instructor, and guests. S/U or letter grading.

**297B. Digital Media Producing 2. (4)** Seminar, three hours. Examination and analysis of creative and physical production processes for producing content for digital platforms. Development of production plans for original scripted and unscripted digital and web-based series. S/U or letter grading.

**297C. Digital Media Producing 3. (4)** Seminar, three hours. Overview of changing world of storytelling through development of new technologies and new media. Development of short teaser trailer or website using digital and web-based resources to promote student original digital media project proposal. S/U or letter grading.

**298A. Special Studies in Film and Television. (2 to 6)** Seminar, three hours; film screenings, three hours. Designed for graduate students. Seminar study of problems in film and television, organized on topic basis. May be repeated once for credit. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Film Image Design Laboratory. (4)** Lecture, two hours; laboratory, six hours. Limited to graduate film and television students. Conception and design of nonnarrative film imagery. One-minute experiments in relation of meaning to technique, including manipulation of optics, photochemistry, elements of electronic processes, and display of time and motion. May be repeated once for credit. S/U or letter grading.

**400B. Introduction to Cinematography II. (2)** Lecture, three hours; laboratory, three hours. Continuation of study of cinematography with emphasis on lighting. Instructor meets individually with teams of director/cinematographer to prepare for shooting six-minute projects. Letter grading.

**401. Film Analysis for Filmmakers. (4)** Lecture/screenings, five hours. Limited to graduate film and television students. Drawing heavily from array of historical examples, examination of many expressive strategies usable in creation of moving image art forms. Unifying theory and practice, presentation of approach to viewing great films of past that empowers filmmakers to use sound and images to tell original stories in present. Focus on strategic decision making in areas of writing, design, cinematography, editing, sound, and performance to enable filmmakers to discover their own personal style for telling stories on screen. Letter grading.

**402A-402B. Advanced Narrative Directing Workshops. (4 or 8-8)** Limited to nine graduate film and television students. Production of 10- to 15-minute fiction film or project. Letter grading. **402A.** Laboratory, six or 12 hours; fieldwork, to be arranged. Requisites: courses 405, 409, 410A, 410B, 410C, 433. Students budget and preproduce their projects by end of first term. **402B.** Laboratory, 12 hours; fieldwork, to be arranged. Requisite: course 402A. In second term students must complete photography on location and/or in studio.

**402C. Advanced Narrative Directing Workshop. (4)** Laboratory, four hours. Requisites: courses 402A, 402B. Completion of postproduction on projects started in courses 402A and 402B. Letter grading.

**C403A-C403B-C403C. Advanced Documentary Workshops. (4 to 8 each)** Lecture/discussion/laboratory, 16 to 24 hours; fieldwork, to be arranged. Requisites: courses 409, 410A, 410B, 410C, 433. Limited to graduate film and television students. Production of advanced individual documentary film or video projects. Students conceptualize, research, write, shoot (on location), and edit projects to completion. May be repeated once for credit. Concurrently scheduled with courses C186A-C186B-C186C. S/U or letter grading.

**404. Emerging Techniques and Technologies in Cinematography. (4)** Lecture, two hours; laboratory, two hours. Requisite: course 410B. Designed to keep students abreast of ever-changing tools and techniques of cinematography. Exploration of developing concepts and familiarization with emerging technology and equipment. Focus may change to reflect changes in current technology. May be repeated twice for credit. Letter grading.

**404A-404B. Advanced Abstract/Experimental Media Workshops. (8-8)** Lecture/discussion/laboratory, 12 hours; fieldwork, to be arranged. Requisites: courses 405, 409, 410A, 410B, 410C, 433. Limited to 10 students per section. Production of 20-minute abstract or experimental film, video, or multimedia project. Students plan, design, and shoot their projects in first term and work as crew for each other in rotating assignments. In second term students must complete postproduction of their projects. S/U or letter grading.

**404C. Advanced Abstract/Experimental Media Workshop. (8)** Lecture/discussion/laboratory, 12 hours; fieldwork, to be arranged. Requisites: courses 404A, 404B. Completion of all stages of production and postproduction on projects started in courses 404A and 404B. Letter grading.

**405. Digital Image and Manipulation on Set and Post. (4)** Lecture, two hours; laboratory, two hours. Requisite: course 410B. Students achieve greater understanding and command of tools and techniques of color correction and matte photography (both on set and in post production) through lectures, discussions, workshops, and screenings. Increases student's appreciation and skill set in art of digital image manipulation in cinematography. May be repeated once for credit. Letter grading.

**407. Video Documentary Workshop. (8)** Laboratory, 12 hours. Limited to graduate film and television students. Exploration of documentary video, including screening variety of international works and producing short documentary project using single-camera field production techniques. S/U or letter grading.

**408A-408B. Avid Editing. (4-4)** Studio, four hours; laboratory, to be arranged. Individual instruction in Avid nonlinear editing system. S/U or letter grading.

**408A.** Avid Editing 1; **408B.** Avid Editing 2.

**409. Directing Actors for Camera Workshop. (4)** Workshop, six hours; laboratory, to be arranged; laboratory preparation, two to four hours. Limited to MFA production program students. Team-taught with five weeks designed to give director actor/camera techniques, and five weeks to offer basic strategies to elicit good performances from actors. Emphasis on problems faced when directing actors for film. S/U or letter grading.

**410A. Symposium. (2)** Seminar, three hours. Limited to and required of first-year MFA production program students. Exploration of principal concepts of film and television production within context of preproduction, production, and postproduction, providing forum for

synthesis of knowledge gained in various first-year technical craft courses. Exploration of strategies for learning production within academic environment. May be repeated for credit. Letter grading.

**410B. Cinematography. (2)** Seminar, three hours. Limited to and required of first-year MFA production program students. Production workshop designed to give hands-on experience in all aspects of film production (tools and practicum of medium) as each student writes/directs/edits six-minute film. May be repeated for credit. Letter grading.

**410C. Postproduction. (2)** Seminar, three hours. Limited to and required of first-year MFA production program students. Production workshop designed to give hands-on experience in all aspects of film production (tools and practicum of medium) as each student writes/directs/edits six-minute film. May be repeated for credit. Letter grading.

**410D. Postproduction Sound. (2)** Seminar, three hours. Requisites: courses 405, 409. Limited to and required of first-year MFA production program students. Technical and aesthetic aspects of postproduction sound recording, editing, and rerecording for film and television. Application of principles of sound design to student films while using UCLA's John Candy Room and Scoring Stage for Automatic Dialogue Replacement (ADR), Foley, and mixing. Use of Pro Tools LE for recording, editing, and mixing, selection and use of microphones and mixing consoles, and incorporation of Final Cut Pro soundtracks into mix environment. Students record ADR and Foley and present mix of edited dialogue/ADR, Foley, sfx, and music tracks by end of term. Letter grading.

**410E. Production. (12)** Lecture, three hours; fieldwork, 24 to 40 hours. Requisites: courses 401, 409, 410A through 410D. Limited to and required of first-year MFA production/directing students. Designed to give hands-on experience in film production. Students prepare and direct six-minute films and serve in preassigned crew positions for each other. Letter grading.

**411A. Modes of Making: Experimental. (4)** Seminar, three hours; laboratory, one hour. Exploration of multiple and alternative modes of filmmaking and platforms for creative expression. Students are exposed to wide variety of media types and invited to undertake their own experiments, paying equal attention to form and content. Each student completes series of small-scale, low-tech, low-stakes film projects designed to fuel curiosity and open creative pathways, while also developing sense of community and learning to offer and accept feedback that is both supportive and challenging. Letter grading.

**411B. Modes of Making: Documentary. (4)** Lecture, three hours; laboratory, one hour. Exploration of craft and form of documentary filmmaking through series of synchronous and asynchronous film projects. Viewing, discussion, and practicing of interview, vérité, animated, and hybrid documentary approaches. Students work in partnerships and small crews to rotate and produce work in collaboration. Contemporary debates around documentary representation and film ethics are incorporated into classroom discussions and critiques. Letter grading.

**411C. Modes of Making: Narrative Fiction. (8)** Lecture, four hours; laboratory, four hours. Students work individually and in teams to complete small-scale film projects and exercises to develop specific building blocks needed for narrative fiction filmmaking. Course modules provide introduction to each element of narrative filmmaking, from preproduction to completion. Students gain experience with each key crew position and develop basic collaborative skills needed to work effectively with—and as part of—film crew. Letter grading.

**412A. Tools and Techniques: Experimental. (8)** Lecture, four hours; laboratory, four hours. Emphasis on both technical and aesthetic components of filmmaking, building with each iteration toward increasingly sophisticated and nuanced uses of all components of filmmaking process. Works in tandem with course 411A to develop hands-on skills needed for craft of media making in experimental mode. Taught by rotating group of specialist faculty. Topics and skills vary by term in coordination with assignments and skills needed to support course 411A. Although focus

on practical skill development, skills are contextualized and motivated by creative and conceptual goals. Letter grading.

**412B. Tools and Techniques: Documentary. (8)** Lecture, four hours; laboratory, four hours. Emphasis on both technical and aesthetic components of filmmaking, building with each iteration toward increasingly sophisticated and nuanced uses of all components of filmmaking process. Works in tandem with course 411B to develop hands-on skills needed for craft of media making in nonfiction mode. Taught by rotating group of specialist faculty. Topics and skills vary by term in coordination with assignments and skills needed to support course 411B. Although focus on practical skill development, hands-on practices are contextualized and motivated by creative and conceptual goals. Letter grading.

**412C. Tools and Techniques: Narrative Fiction. (4)** Laboratory, four hours. Provides hands-on support and technical knowledge for students in parallel with their crew-based productions in course 411C. Students deepen their skills in key production roles including cinematography, sound, and editing. Meetings are divided among lecture, individual presentations, and laboratory. Letter grading.

**413. Themes and Issues. Foundations of Directing. (4)** Seminar, three hours. Provides intellectual and creative toolkit for subsequent undertakings in filmmaking, media making, and audio-visual storytelling. These source materials are agnostic with regard to certain questions of origin (genre, nation, format, portal, duration) and yet deeply rooted in politics and histories of representation that catalyze and inform racial, gendered, sexual, and ethnic lenses and visions. Letter grading.

**C416. Intermediate Cinematography. (4)** Lecture, two hours; laboratory, four hours. Intermediate study of principles of cinematography, with emphasis on exposure, lighting, and selection of film, camera, and lenses. Concurrently scheduled with course C118. Letter grading.

**C417. Lighting for Film and Television. (4)** Lecture, two hours; laboratory, six hours. Limited to graduate film and television students. Lectures, supervised exercises on stage or in exterior, screenings of scenes, and discussions aimed at learning to master lighting to create appropriate mood or atmosphere of premediated scene recorded on film or through electronic system. May be repeated twice for credit. Concurrently scheduled with course C157. Letter grading.

**418. Cinematography and Directing. (4)** Lecture, two hours; laboratory, six hours. Requisite: course 417. Limited to graduate film and television students. Supervised filming of short dramatic projects on sound stage and at exterior locations that explore complexity of process, emphasizing balance and collaboration essential to both directing and photography in its varied technical, production, and creative aspects. Letter grading.

**419. Advanced Cinematography. (4)** Lecture, two hours; discussion, one hour; laboratory, one hour. Requisites: courses 417, 418. Limited to graduate film and television students. Advanced study of principles of cinematography, with emphasis on exposure, lighting, and selection of film, camera, and lenses. S/U or letter grading.

**C420. Digital Cinematography. (4)** Lecture, three hours. Advanced study of principles of digital cinematography, with emphasis on electronic exposure control, lighting, formats, cameras, and lenses. Concurrently scheduled with course C120. Letter grading.

**423A. Direction of Actors for Film and Television. (4)** Lecture, four hours; laboratory. Preparation: first film project. Limited to graduate film and television students. Required of all production majors shooting fiction thesis. Exercises in analysis of script and character for purpose of directing actors in film and television productions. Emphasis on eliciting best possible performance from actors. May be repeated twice for credit. S/U or letter grading.

**423B. Advanced Direction of Actors for Film and Television. (4)** Studio laboratory, six hours. Requisite: course 423A. Limited to graduate film and television students. Advanced study and practice of directing

actors before camera. Emphasis on developing techniques to immediately enhance communication between director and actor on set in order to maintain continuity from shot to shot. S/U or letter grading.

**430. Introduction to Film and Television Writing. (6)** Lecture, three hours. Introduction to film and television writing. S/U or letter grading.

**433. Writing Short Screenplays. (4)** Lecture, three hours. Limited to and required of first-year MFA production program students. Conception, development, and writing of six-minute dramatic film script to be produced in courses 410A, 410B, 410C. Letter grading.

**434. Advanced Screenwriting. (8)** Seminar, three hours. Enforced requisite: course 430. Advanced problems in writing of original film and television screenplays. May be repeated for credit. Letter grading.

**435. Advanced Writing for Short Film and Television Screenplays. (4)** Discussion, three hours. Requisite: course 410C. Limited to graduate film and television students. Conception, development, and writing of dramatic film script to be produced as advanced or thesis project. Letter grading.

**437. Adaptation for Screen. (8)** Seminar, three hours. Enforced requisite: course 430. Students analyze techniques of dramatic adaptation and apply them by writing their own scripted adaptations. Students read selected texts and view their filmed versions in order to learn various approaches to adaptation. Students workshop their own screenplays adapted from preselected list of stories. Letter grading.

**438. Advanced Screenwriting: Rewrite. (8)** Seminar, three hours. Enforced requisites: courses 430, 434. Workshop in which students rewrite first draft of original screenplay that was written in course 434. Discussion of problems particular to rewrites: how to take notes and make them one's own; how to do deep-read on line-by-line basis of script; overall rewriting strategies; what is best for situation and script. Reading and discussion of student rewrites. Particular attention directed to how people talk about scripts that are not their own; how they avoid giving feedback based on how they might write something and how they move toward giving feedback that honors intention and integrity of script. May be repeated once for credit. Letter grading.

**440. Festival Strategies. (4)** Seminar, three hours. Exploration of film, television, streaming, and specialized festivals. Emphasis on strategies and practical knowledge necessary to navigate local, regional, and global festivals, whether as producer, director, animator, screenwriter, or scholar/programmer. Dialog and exchange of diverse ideas, perspectives and real-world experiences among students, faculty, and special industry guests. S/U or letter grading.

**451. Advanced Design for Film and Television. (4)** Laboratory, to be arranged. Limited to graduate film and television students. Advanced study and practice of techniques and methods of design for motion pictures. Art direction for advanced workshop productions. May be repeated for maximum of 12 units. S/U or letter grading.

**452B. Postproduction Sound. (2)** Laboratory, three hours. Limited to Production MFA students. Technical and aesthetic aspects of postproduction sound recording, editing, and rerecording for film and television. Letter grading.

**C452C. Digital Audio Postproduction. (4)** Lecture, three hours; laboratory, three hours. Limited to Film and Television majors. Through discussion, demonstrations, and laboratory assignments, exploration of digital audio tools and procedures available to today's filmmakers. Coverage of many technical, equipment, and software step-by-steps, with emphasis on creative process. Concurrently scheduled with course C152C. Letter grading.

**453. Postproduction Sound Design. (2 to 4)** Lecture, three hours. Designed to give film students insight into world of postproduction sound and to provide knowledge and tools necessary to complete postwork on their projects. Exploration of all areas of postproduction sound design from editing to final mixing. How to effectively use sound design to enhance storytelling

capability of films, evaluate music choices, pick composer, music edit, create sound design to enhance story points, discover design opportunities, and select right sound effects. How to edit dialogue, prep for Automatic Dialogue Replacement and Foley sessions, and supervise final sound mix. Screening of numerous film clips to provide examples of postsound choices that demonstrate effective use of sound design. S/U or letter grading.

**C454B. Advanced Film Editing. (4)** Lecture, three hours; laboratory, one hour. Preparation: submission of rough cut of existing project or proposal to edit work of another director. Limited to film and television students in postproduction phase with advanced knowledge of organization and operation of postproduction process. Students may also propose to edit significant scene given to them by instructor. Concurrently scheduled with course C154B. Letter grading.

**C454C. Digital Workflow. (2 to 4)** Lecture, three hours; laboratory, two hours. Limited to departmental majors. Through discussions, demonstrations, outside speakers, and laboratory assignments, demystification of ever-changing world of digital workflow. Students plan, schedule, and budget their overall workflow in preproduction. May be repeated once for credit. Concurrently scheduled with course C158. Letter grading.

**459A-459B. Directing for Film and Television. (4-4)** Lecture, three hours. Limited to graduate film and television students. Analysis and exploration, with specific scenes, of differences and many similarities in directorial approach to same literary material in theater, film, and television. S/U or letter grading.

**464A-464B. Advanced Film Directing. (8-8)** Studio, to be arranged. Limited to graduate film and television students. Special problems in direction of fictional and documentary films. S/U or letter grading.

**465. Narrative Television Workshop. (8)** Laboratory, eight hours. Supervised exercises in television multi-camera direction, with emphasis on creative use of composition and sound, and communication with those in front of and behind camera. Letter grading.

**C468. Creative Location Film Production. (8)** Lecture, four hours; discussion, four hours; laboratory, to be arranged. Limited to directing or producer's program students. Problems of location, production, directing, and cinematography in various real-life practical locations. Practical application of solving problems and communication within limitations of production experience. Concurrently scheduled with course C168. Letter grading.

**469. Contemporary Topics: UCLA Filmmakers. (4)** Seminar, two hours. Analysis of films made both outside and within traditional studio system, identification of materials and tools utilized to such purposes, exploration of story and themes of works within larger political and cultural framework, and development and articulation of personal storytelling voice rooted in specifics of history, background, and life experience. Designed as series of online master classes with visiting filmmakers, their collaborators, and occasional guest scholars participating in moderated discussions. Each class concludes with informal discussion with students. Weekly contextual readings and screenings. S/U or letter grading.

**472. Commercials. (4)** Lecture, four hours. Limited to MFA students. Designed to give students opportunity to explore one very specific kind of filmmaking. Through exploration of advertising, students gain knowledge about what kind of work is salable in American and foreign markets and how to work within distinct confines of commercial genre. Letter grading.

**480. Timing for Animation. (4)** Lecture, three hours; laboratory, three hours. Process of animation timing through lectures and assignments. Letter grading.

**C481A. Introduction to Animation. (5)** Lecture, three hours; laboratory, three hours. Drawing experience not required. Fundamentals of animation through preparation of short animated film. Concurrently scheduled with course C181A. S/U or letter grading.

**C481B. Writing for Animation. (4 or 8)** Lecture, six hours; studio, to be arranged. Requisite: course C481A or consent of instructor. Research and practice

in creative writing and planning for animated film. May be repeated for maximum of 16 units. Concurrently scheduled with course C181B. S/U or letter grading.

**C481C. Animation Workshop. (4 or 8)** Studio, six hours. Preparation: storyboard at first class meeting. Requisite: course C181A. Organization and integration of various creative arts used in animation to form complete study of selected topic. May be repeated for maximum of 16 units. Concurrently scheduled with course C181C. S/U or letter grading.

**482A-482B. Advanced Animation Workshops. (4 or 8 each)** Lecture, three hours; studio, to be arranged. Requisites: courses 181A, 181B, 181C. Advanced organization and integration of various creative arts used in animation, resulting in production of complete animated film. May be repeated for maximum of 16 units. S/U or letter grading.

**483A. Advanced Computer Animation. (4 to 8)** Lecture, six hours; laboratory, four hours. Requisites: courses C481A, C481C, 489A. Recommended: course C481B. Course 483A is requisite to 483B, which is requisite to 483C. Creation and production of complete and original advanced computer animated film. Letter grading.

**483B. Advanced Computer Animation. (4 to 8)** Lecture, six hours; laboratory, four hours. Requisite: course 483A. Creation and production of complete and original advanced computer animated film. Letter grading.

**483C. Advanced Computer Animation. (4 to 8)** Lecture, six hours; laboratory, four hours. Requisite: course 483B. Creation and production of complete and original advanced computer animated film. Letter grading.

**484A-484B. Visual Thinking and Organization for Animation. (4-4)** Lecture, six hours; laboratory, four hours. Course 484A is requisite to 484B. Systematic approach to analyzing and communicating two-dimensional and three-dimensional form and applying traditional compositional approaches to animation. May be repeated for maximum of 16 units. Letter grading.

**485. Legal Issues in Animation. (4)** Lecture, three hours; laboratory, three hours. Examination of legal issues in animation, including copyright, contracts, constitutional issues in animation, competing rights, employer/employee relationships, and representation in animation. S/U or letter grading.

**486. Directed Individual Study: Preparation to Advance to Candidacy for MFA in Production. (2 to 4)** Tutorial, four to eight hours. Limited to MFA production program students. Specialized development and organization of proposed thesis project prior to advancement to candidacy. Should be taken term before student plans to advance to candidacy. S/U or letter grading.

**487. Directed Individual Study: Postproduction Laboratory. (4)** Laboratory, eight hours. Limited to MFA production program students. Completion of projects in final stages of postproduction. May not be repeated. S/U or letter grading.

**488A. Interactive Animation. (4 to 8)** Lecture, six hours; laboratory, to be arranged. Requisites: courses C481A, C481C, 489A. Organization and integration of various creative arts used in animation and interactive media to form complete study of selective interactive animation project. May be repeated for maximum of 16 units. Letter grading.

**488B. Advanced Interactive Animation. (4 to 8)** Lecture, six hours; laboratory, to be arranged. Requisite: course 488A. Organization and integration of various creative arts used in animation and interactive animation to form completed project of selected interactive topic. May be repeated for maximum of 16 units. Letter grading.

**489A. Computer Animation in Film and Video. (4 to 8)** Lecture, six hours; laboratory, four to eight hours; other, to be arranged. Preparation: completed animated film. Requisites: courses 181A, 181C. Instruction in and supervised production of computer animation. May be repeated for maximum of 16 units. Letter grading.

**489B. Production in Computer Animation. (4 to 8)** Lecture, six hours; laboratory, four to eight hours. Requisite: course 489A. Instruction in creation, preparation, and production of complete and original computer animation film or tape. May be repeated for maximum of 16 units. Letter grading.

**495A. Practice of Teaching Film and Television. (2)** Seminar, three hours. Required of all teaching assistants and associates in critical studies program. Orientation and preparation of graduate students who have responsibility to assist in teaching undergraduate courses in department; discussion of problems common to teaching experience. S/U grading.

**496. Practice of Teaching Film and Television. (2)** Discussion, two hours. Required once of all teaching assistants and associates in department. Orientation and preparation of graduate students who have responsibility to assist in teaching undergraduate courses in department; discussion of problems common to teaching experience. May not be applied toward MA, MFA, or PhD. May be repeated. S/U grading.

**498. Professional Internship in Film and Television. (4, 8, or 12)** Tutorial, to be arranged. Full- or part-time at studio or on professional project. Designed for MFA program advanced students. Internship at various film, television, or theater facilities accentuating creative contribution, organization, and work of professionals in their various specialties. Given only when projects can be scheduled. S/U or letter grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Directed Individual Studies: Research. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596B. Directed Individual Studies: Writing. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596C. Directed Individual Studies: Directing. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596F. Directed Individual Studies: Production. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. May be repeated with consent of instructor. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations in Film and Television. (2 to 12)** Tutorial, to be arranged. May be taken for maximum of 12 units. S/U grading.

**598. MA Thesis in Film and Television. (2 to 12)** Tutorial, to be arranged. Preparation: advancement to MA candidacy. Research and writing for MA thesis. May be taken for maximum of 12 units. S/U grading.

**599. PhD Dissertation in Film and Television. (2 to 12)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Research and writing for PhD dissertation. May be repeated. S/U grading.

## FOOD STUDIES

*Interdisciplinary Minor  
College of Letters and Science*

A316 Murphy Hall  
Box 951571  
Los Angeles, CA 90095-1571

### Food Studies

310-206-1698

### E-mail contact

Amy C. Rowat, PhD, *Chair*

## Faculty Committee

Akhil Gupta, PhD (*Anthropology*)

Joseph F. Nagy, PhD (*English*)

Janet M. O'Shea, PhD (*World Arts and Cultures/Dance*)

Amy C. Rowat, PhD (*Integrative Biology and Physiology*)

Wendelin M. Slusser, MD, MS (*Community Health Sciences*)

## Overview

The Food Studies minor uses food—its production, preparation, sharing, consumption, and disposal—as a lens for understanding individual, sociocultural, and global issues. The study of the role of food in multiple complex aspects of life builds bridges across all areas of the academy, including arts, anthropology, environment and sustainability, folklore and mythology, geography, history, humanities, law, psychology, public health, public policy, and other fields.

## Undergraduate Minor

### Food Studies Minor

Through interdisciplinary courses and a capstone experience, students in the minor acquire a unique insight of food studies and emerge with a new intellectual framework for understanding this expanding area of study.

The capstone requirement gives students the opportunity to either put their studies into practice through internship or complete independent research in a food-related area of interest.

### Admission

To be eligible for the Food Studies minor, students must be in good academic standing (have an overall grade-point average of 2.0 or better) and have completed or be enrolled in one of the required elective courses for the minor. To apply, students must file an online application through MyUCLA. The application is open during weeks one through three of each academic quarter. See the [minor website](#) for more information.

### The Minor

*Required Elective Courses (24 to 27 units):* Six courses, with at least one course from each thematic group.

*Social, Cultural, and Historical Perspectives:* Anthropology 133, Asian 135, Chinese 185, Clusters M1CW, Community Engagement and Social Change M170XP, Community Health Sciences 48, 130, 131, 132, English 112E, M118F, Environment 25, Food Studies 35, M79, M132, 133W, M136, 159, M167, M170XP, M176XP, M177, M179, 181, 187, 197, Italian 42C, 124, Society and Genetics M132, 134, World Arts and Cultures C129.

*Perspectives from the Sciences:* Clusters M1CW, Community Health Sciences 48, 130, 131, 132, Environment 25, Food Studies 27, M136, M157, 159, 181, 187, 197, Physiological

Science 7, 128, 167, Society and Genetics M132, 134, Urban Planning M165.

*Required Capstone Course (4 units):* Food Studies 195CE or 199.

### Policies

The capstone course is required for completion of the minor. It must be the last course completed for the minor, after all other courses have been completed or concurrently with one remaining course requirement.

No more than two lower-division courses may be applied toward the minor. Students may petition to have courses other than those listed above under the required elective courses be applied toward the minor. Contact the academic counselor for the Food Studies minor for information on how to petition.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Food Studies

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**27. Critical Thinking about Food and Science Publications. (5)** Lecture, two hours; discussion, one hour. Development of process of further thinking about stories behind conclusions from nutrition studies and food scientific literature. Exercises, discussions, reports, and readings designed to provide practices to become critical thinker in food science and literature. P/NP or letter grading.

**35. Visual Representations of Food from Antiquity to Present. (5)** Lecture, three hours; discussion, one hour. Examination of food imagery in visual art from antiquity to present. Introduction to many major movements in Western art history, with primary focus on historical and sociological implications that can be derived from close analysis of visual representations of food, kitchens, markets, and agriculture over centuries. Topics of investigation include diets of ancient Romans as evidenced by floor mosaics and wall paintings of Pompeii; religious symbolism of food during Middle Ages; opulence of Renaissance banquets; common food of common folk; significance of still life paintings; what paintings can tell us about trade; turn-of-century tables; food and eroticism; economics, packaging, and advertising; and food presentation and plating as art form. P/NP or letter grading.

**M79. Food Politics: Cultural Solutions to political Problems. (5)** (Same as World Arts and Cultures M79.) Lecture, four hours; discussion, one hour. Examination of issues of environmental and public health effects of intensive and extensive agriculture, influence of corporations on government, animal ethics, food deserts and urban gardening, and food insecurity. Focus on representation of such issues in documentaries, public lectures, memoirs, novels, and visual art, as well as on initiatives to address such problems through policy and activism. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or



other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M132. Food Cultures and Food Politics. (5)** (Same as English M118F and Society and Genetics M132.) Lecture, four hours; discussion, one hour (when scheduled). Prerequisite: English Composition 3. Introduction to interdisciplinary field of food studies, with focus on how literature, art, science writing, and visual culture address political dimensions of food and agriculture in specific contexts. P/NP or letter grading.

**133W. Historical Recipes and Recipe for History. (5)** Lecture, two hours; discussion, one hour. Prerequisite: English Composition 3. Exploration of historical meaning of food in late Medieval and Early Modern Europe through lens of recipes. How recipes, as historical documents, are related to culture, social interactions, and historical ways of knowing. Introduction to ways that historians attempt to understand and recreate rhythms of daily life through interactive pedagogy and experimental recreation of historical recipes. Students gain working knowledge of food studies as interdisciplinary field from historical perspective. Research project documenting original research. Satisfies Writing II requirement. P/NP or letter grading.

**M136. Eating Society: Science and Politics of Food from Individual to Planetary Health. (4)** (Same as Society and Genetics M136 and Sociology M136.) Lecture, three hours; discussion, one hour. Questions of food and health are both individual and social. Students gain tools for understanding relationships between individual eaters, medicine, and social organization of food production and processing through set of research frameworks newly emergent in range of social and health sciences. Topics include individual and social ramifications of microbiome science; understanding how human gut microbes and health are shaped by pasteurization, processing, and food safety practices; One Health approaches that encompass human and animal health, discussing examples such as antibiotic resistance and emerging infectious disease as effects of large-scale agriculture; planetary health frameworks that link individual human metabolic health to issues of sustainable agriculture, for example how pesticides and fertilizers tie diets to environments; and resilience of cultural food systems in face of environmental pollution as issue of reproductive health. Letter grading.

**M157. Food: Molecules, Microbes, Environment. (4)** (Same as Chemistry M157.) Lecture, three hours; discussion, one hour. Prerequisite: Chemistry 153A. Recommended requisites: Life Sciences 7A, 7B. Study of science of food. Study of food units physical, biological, environmental, social, and behavioral sciences. Use of scientific concepts to explain properties of food. Covers range of topics that focus on science of cooking, critical role of microbes in transformation of foods, genetic and environmental concerns related to acquisition of food, and impact of different dietary systems on metabolism and physiology. Comprises four major interrelated topics: molecules of food and their sources, science of cooking, acquisition of food, eating. P/NP or letter grading.

**159. Food and Health in Global Perspective. (4)** Lecture, three hours. Study problematizes and adds depth to common-sense understandings of healthy and unhealthy consumption by examination of relationship between food and health, from critical and holistic perspective, that accounts for interplay of biology and culture within broader historical, societal, and global contexts. Topics include what is meant by health, especially in terms of diet; relationship between food practices and evolutionary biology, as well as particular environments of societies, cultural systems, histories, and their health implications; how major global foods have come to their dominance and consequences for health; and influences of food production, distribution, and preparation on health. P/NP or letter grading.

**M167. Historical Sociology of Urban/Rural Relations and Food Production. (4)** (Same as Sociology M137.) Lecture, three hours; discussion, one hour. Historical examination of food supply and food production in relation to urban and rural regions. Topics include food logistics such as storage, transportation, and distribution, as well as human population growth and migration, famine and hunger, and agricultural advances and environmental impacts. P/NP or letter grading.

**M170XP. Food Studies and Food Justice in Los Angeles. (4)** (Formerly numbered M170SL.) (Same as Community Engagement and Social Change M170XP.) Seminar, three hours; fieldwork, two hours. Interdisciplinary service learning course that provides general understanding of access and equity issues related to food chain in Los Angeles. Exploration of social justice issues faced by residents of lower-income communities. Reading of research from multiple disciplines, including but not limited to public health, environmental justice, and public policy. Service-learning component includes meaningful work with off-campus community partners selected in advance by instructor and Center for Community Learning. Letter grading.

**M176XP. Making Films about Food. (5)** (Formerly numbered M176SL.) (Same as Community Engagement and Social Change M176XP and Public Affairs M176XP.) Lecture, three hours. Introduction to documentary video production and distribution. Students work on assignments in pairs and small groups to create 8- to 10-minute video about one of several Los Angeles partner organizations that advocate for healthy, local, sustainable food. Consideration, through video production, of challenges posed by existing farming, ranching, and distribution methods, and strategies these groups are pursuing to create more sustainable food pathways. Students look at social media communication strategies to help think through intervention in face of historically entrenched industrial food production and regulations that remain favorable to mass-produced, processed food items. P/NP or letter grading.

**M177. Superfoods: Cultural and Global Perspectives. (4)** (Same as Global Studies M177 and International Development Studies M177.) Seminar, four hours. Exploration of superfoods, which are nutrient rich foods considered beneficial for well-being, health, and longevity, as they are high in minerals, vitamins, and antioxidants. While superfoods have been part of cultures' diets for centuries, in recent decades they have been researched in scientific and medical communities. Citizens globally have begun to increasingly demand and consume foods that are nutritious, organic, and sustainable. It is important also to address issues such as marketing, misinformation, and hyper about superfoods. Surge of interest in superfoods is increasingly important in context of ongoing global inequities with regards to food access and production. Study addresses paradox that communities cope simultaneously with malnutrition/hunger and obesity, and how farming practices for superfoods and staple crops are related. P/NP or letter grading.

**M179. Food Activism in Los Angeles: Narrating Pasts, Imagining Futures. (4)** (Same as World Arts and Cultures M179.) Lecture, two hours; discussion, two hours. Introduction to history and praxis of local interventions into food insecurity and food oppression, such as community gardens, pop-up markets, and care farms. Through ethnographic and oral history methodologies, students learn how food activists or-

ganize themselves, and mobilize creativity to counteract injustice. Focus on relationships between food access, food oppression, food politics, and food ethics; and social histories of race, class, urban planning, and housing discrimination. P/NP or letter grading.

**181. Special Topics: Perspectives on Food and Society. (4)** Lecture, 90 minutes; discussion, one hour. Variable topics that engage with current societal challenges through lens of food and transdisciplinary approach. Emphasis on food-related issues that impact society from social justice to food access to planetary health. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

**187. Special Topics in Food Studies. (4)** Lecture, three hours. Variable topics in one area within food studies. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195C. Community and Corporate Internships in Food Studies for Capstone. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning (CCL). Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. Fulfills capstone experience requirement for Food Studies minor. Individual contract with site supervisor, CCL coordinator, and faculty sponsor required. Letter grading.

**195CE. Community and Corporate Internships in Food Studies. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend biweekly meetings with graduate student instructor, and write final research paper. Faculty mentor and graduate student instructor construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major; units applied must be taken for letter grade. May not be applied toward concentration or distribution requirements. Individual contract with supervising faculty member required. P/NP or letter grading.

**196. Research Apprenticeship in Food Studies. (4)** Tutorial, one hour. Entry-level research apprenticeship under guidance of faculty mentors affiliated with Food Studies minor. Collaboration with faculty mentors on their research in area related to food studies. May be repeated for credit. Individual contract required. Letter grading.

**197. Individual Studies in Foodways, Diet, and Nutrition. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Food Studies. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research projects in food studies under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# FOREIGN LITERATURE IN TRANSLATION

## Overview

The following courses, offered in the departments of language and literature, do not require reading knowledge of any foreign language.

## Courses

**Ancient Near East** (*Near Eastern Languages and Cultures*)

150A. Heroes, Gods, and Monsters: Literature and Epic in Mesopotamia

150B. Survey of Ancient Near Eastern Literatures in English: Egypt

**Arabic** (*Near Eastern Languages and Cultures*)

150. Classical Arabic Literature in English

M151. Modern Arabic Literature in English

**Armenian** (*Near Eastern Languages and Cultures*)

150A. Survey of Armenian Literature in English

C152. Modern Armenian Drama as Vehicle for Social Critique

C153. Art, Politics, and Nationalism in Modern Armenian Literature

**Asian** (*Asian Languages and Cultures*)

151. Buddhist Literature in Translation

**Asian American Studies** (*Asian American Studies*)

M173. Topics in Vietnamese Cinema and/or Literature

**Central and East European Studies** (*Slavic, East European, and Eurasian Languages and Cultures*)

91. Culture and Society in Central and Eastern Europe

M120. Women and Literature in Southeastern Europe

125. Interwar Central European Prose

C126. Coldwar Central European Culture

127. Central European Culture after Fall of Communism

130. Balkan Cultures in Film and Literature

**Chinese** (*Asian Languages and Cultures*)

70. Introduction to Traditional Chinese Literature

70W. Classics of Chinese Literature

131. World Sinophone Literature: Theories and Texts

C150A. Lyrical Traditions

C150B. Chinese Literature in Translation: Traditional Narrative and Fiction

151. Chinese Literature in Translation: Modern Literature

152. Topics in Contemporary Chinese Literature and Culture

M153. Chinese Immigrant Literature and Film

**Classics** (*Classics*)

10. Discovering Greeks

20. Discovering Romans

30. Classical Mythology

40W. Reading Greek Literature: Writing-Intensive

41W. Reading Roman Literature: Writing-Intensive

60. Fantastic Journey: Antiquity and Beyond

137. Ancient Lives: Art of Biography

140. Topics in History of Greek Literature

141. Topics in History of Latin Literature

142. Ancient Epic

143A. Ancient Tragedy

143B. Ancient Comedy

144. Topical Studies in Ancient Culture

M145A. Ancient Greek and Roman Philosophy

M145B. Later Ancient Greek Philosophy

M146A. Plato—Earlier Dialogues

M146B. Plato—Later Dialogues

M147. Aristotle

150A. Female in Greek Literature and Culture

150B. Female in Roman Literature and Culture

162. Reception of Ancient Myth

163. Ovid and Consequences

**Comparative Literature** (*Comparative Literature*)

All undergraduate courses except course M191P

**Czech** (*Slavic, East European, and Eurasian Languages and Cultures*)

155. Survey of Czech Literature from Middle Ages to Present

**Dutch** (*European Languages and Transcultural Studies*)

113. Modern Dutch and Flemish Literature in Translation

**English** (*English*)

111A. Hebrew Bible in Translation

111B. Christian Biblical Texts in Translation

111C. Topics in Biblical Literature

112A. Oral Tradition

112B. Celtic Mythology

112C. Survey of Medieval Celtic Literature

112D. Celtic Folklore

141B. Introduction to Old English Language and Literature

141C. Topics in Old English

**European Languages and Transcultural Studies** (*European Languages and Transcultural Studies*)

20. Copenhagen and Nordic Model of Sustainability

C101XP. Between Los Angeles and Europe: New Approaches to Transatlantic European Studies

112. Medieval Foundations of European Civilization

140. European Crime Novel

150. European Folk and Fairy Tales

151. Valkyries and Dragonslayers: Völsung/Nibelung Tradition

167. European Identities in Classic Hollywood and Los Angeles, 1924–1950

**French** (*European Languages and Transcultural Studies*)

14. Introduction to French Culture and Civilization in English

14W. Introduction to French Culture and Civilization in English

16. Society And Self in Early Modern France

160. Francophone Cultures in English

161. French and Francophone Theater in Translation

163. French and Francophone Short Story in Translation

164. French and Francophone Novel in Translation

165. Eco-Citizenship: Encounters with Eco-Citizens in Translation

166. French and Francophone Autobiography in Translation

167. French and Francophone Intellectual History in Translation

169. Paris: Study of French Capital in Translation

170. Nantes: Shape of City in Translation

191A. Variable Topics Research Seminars in Translation

**German** (*European Languages and Transcultural Studies*)

50B. Great Works of German Literature in Translation: Romanticism to Present

56. Figures Who Changed World: Cosmopolitanisms within a Global Context

59. Holocaust in Film and Literature

61A. Modern Metropolis: Berlin

102. War, Politics, Art

103. German Film in Cultural Context: Early German Film

104. German Film in Cultural Context, 1945 to Present

109. Jewish Question and German Thought

110. Special Topics in Modern Literature and Culture

112. Feminist Issues in German Literature and Culture

113. German Folklore

114. Fairy Tales and Fantastic

117. German Exile Culture in Los Angeles

**Hungarian** (*Slavic, East European, and Eurasian Languages and Cultures*)

121. Survey of Hungarian Literature in Translation

**Iranian** (*Near Eastern Languages and Cultures*)

150A. Survey of Persian Literature in English

150B. Survey of Persian Literature in English

**Italian** (*European Languages and Transcultural Studies*)

42A. Italy through Ages in English: Saints and Sinners in Early Modern Italy

42B. Italy through Ages in English: Modern and Contemporary Italy

42C. Italy through Ages in English: Food and Literature in Italy

46. Italian Cinema and Culture in English

## 502 / Foreign Literature in Translation

50A. Masterpieces of Italian Literature in English: Middle Ages to Baroque

50B. Masterpieces of Italian Literature in English: Enlightenment to Postmodernity

102A. Italian Cultural Experience in English

102B. Italian Cultural Experience in English

102C. Italian Cultural Experience in English

110. Dante in English

120. Modern and Contemporary Literature

121. Literature and Film

122. Italian Theater

123. Modern Italian Cultural Studies

124. Food and Literature in Italy

140. Italian Novella from Boccaccio to Basile in Translation

150. Modern Fiction in Translation

152. Italy between Europe and Africa

M158. Women, Gender, and Sexuality in Italian Culture

### **Japanese** (*Asian Languages and Cultures*)

70. Images of Japan: Literature and Film

75. Anime

C150. Topics in Japanese Literature and Philosophy

151. Japanese Literature in Translation: Modern

154. Postwar Japanese Culture through Literature

M156. Literature and Technology

157. Classical Japanese Drama: Great Tradition

170. Japanese Tales of Supernatural

172. Fiction and Plays of Floating World

174. Classical Japanese Poetry

### **Jewish Studies** (*Near Eastern Languages and Cultures*)

M150A. Hebrew Literature in English: Literary Traditions of Ancient Israel—Bible and Apocrypha

150B. Hebrew Literature in English: Rabbinic Judaism

M151A. Modern Jewish Literature in English: Diaspora Literature

151B. Modern Jewish Literature in English: Israeli Literature

175. Modern Israeli Literature Made into Films

### **Korean** (*Asian Languages and Cultures*)

C150. Korean Literature in Translation: Classical

C151. Korean Literature in Translation: Modern

154. Contemporary Korean Culture through Literature and Film

### **Polish** (*Slavic, East European, and Eurasian Languages and Cultures*)

152A. Survey of Polish Literature: From the Middle Ages to Neoclassicism

152B. Survey of Polish Literature: Reimagining a Nation

152C. Survey of Polish Literature: Dreaming, Mocking, and Writing “as if”

### **Portuguese** (*Spanish and Portuguese*)

40A. Portuguese, Brazilian, and African Literature in Translation: Portuguese and Portuguese-African Literature

40B. Portuguese, Brazilian, and African Literature in Translation: Brazilian Literature

46. Brazil and Portuguese-Speaking World

141A. Literature and Film in Portuguese

141B. Film, Television, and Society in Brazil

141C. Documentary Film

142A. Brazil and Its Culture

142B. Brazil and Portugal in Comparative Perspective

M142C. Travel Narratives, Testimony, Autobiography

### **Romanian** (*Slavic, East European, and Eurasian Languages and Cultures*)

152. Survey of Romanian Literature

### **Russian** (*Slavic, East European, and Eurasian Languages and Cultures*)

25. Great Russian Novel

25W. Great Russian Novel

30. Russian Literature and World Cinema

M118. History of Russia, Origins to Rise of Muscovy

119. Golden Age and Great Realists

120. Literature and Revolution

121. Russian Pop Culture

C124C. Studies in Russian Literature: Chekhov

C124D. Studies in Russian Literature: Dostoevsky

CM124G. Studies in Russian Literature: Gogol

C124N. Studies in Russian Literature: Nabokov

C124P. Studies in Russian Literature: Pushkin

C124T. Studies in Russian Literature: Tolstoy

125. Russian Novel in Its European Setting

126. Russian Theater: Plays and Performance

M127. Women in Russian Literature

128. Russian Science Fiction

C170. Russian Folklore

### **Scandinavian** (*European Languages and Transcultural Studies*)

40. Heroic Journey in Northern Myth, Legend, and Epic

40W. Heroic Journey in Northern Myth, Legend, and Epic

50. Introduction to Scandinavian Literatures and Cultures

50W. Introduction to Scandinavian Literatures and Cultures

60. Introduction to Nordic Cinema

60W. Introduction to Nordic Cinema

C131. Introduction to Viking Age

C133A. Saga

134. Scandinavian Mythology

C137. Old Norse Literature and Society

138. Vikings

C141A. Theory of Scandinavian Novel

141C. Short Story in Scandinavia

142A. Introduction to Nordic Theater and Drama

143A. Scandinavian Detective Fiction

143C. Scandinavian Crime Literature

C145A. Henrik Ibsen

C145B. Knut Hamsun

C146A. August Strindberg

147A. Hans Christian Andersen

C147B. Soren Kierkegaard

147C. Karen Blixen

154. Romanticism

156. Scandinavian Literature of 20th Century

157. Contemporary Nordic Literature

161. Introduction to Nordic Cinema

C163A. Introduction to Danish Cinema

C163B. Introduction to Swedish Cinema

C163C. Introduction to Norwegian Cinema

C166A. Ingmar Bergman

C166C. Carl Dreyer

C171. Introduction to Scandinavian Folklore

172A. Nordic Folk and Fairy Tales

173A. Popular Culture in Scandinavia

C174A. Minority Cultures in Scandinavia

174B. Queer Scandinavia

C180. Literature and Scandinavian Society

C185. Seminar: Scandinavian Literature

### **Serbian/Croatian** (*Slavic, East European, and Eurasian Languages and Cultures*)

154. South Slavic Literature

### **Slavic** (*Slavic, East European, and Eurasian Languages and Cultures*)

90. Introduction to Slavic Civilization

### **South Asian** (*Asian Languages and Cultures*)

150. Classical Indian Literature in Translation

### **Southeast Asian** (*Asian Languages and Cultures*)

70. Modern Southeast Asian Literature

90. Modern Literatures in Southeast Asia

130. Topics in Southeast Asian Literature

### **Spanish** (*Spanish and Portuguese*)

60A. Hispanic Literatures in Translation: Spanish Literature

60B. Hispanic Literatures in Translation: Spanish-American Literature

60C. Hispanic Literatures in Translation: Don Quijote

### **Ukrainian** (*Slavic, East European, and Eurasian Languages and Cultures*)

152. Ukrainian Literature

### **Vietnamese** (*Asian Languages and Cultures*)

CM155. Topics in Vietnamese Cinema and/or Literature

### **Yiddish** (*European Languages and Transcultural Studies*)

10. From Old World to New: Becoming Modern as Reflected in Yiddish Cinema and Literature

121A. 20th-Century Yiddish Poetry in English Translation

121B. 20th-Century Yiddish Prose and Drama in English Translation

121C. Special Topics in Yiddish Literature in English Translation

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# GENDER STUDIES

College of Letters and Science

1120 Rolfe Hall  
Box 951504  
Los Angeles, CA 90095-1504

[Gender Studies](#)

310-206-8101

[Department e-mail](#)

Sherene H. Razack, PhD, *Chair*

## Faculty Roster

### Professors

Maylei S. Blackwell, PhD  
Jessica R. Cattelino, PhD  
Alicia Gaspar de Alba, PhD  
Mishuana R. Goeman, PhD  
Grace Kyungwon Hong, PhD  
Douglas M. Kellner, PhD  
Rachel C. Lee, PhD  
Purnima Mankekar, PhD  
Kathleen A. McHugh, PhD  
Sean A. Metzger, PhD  
Nancy M. Mithlo, PhD  
Safiya U. Noble, PhD  
Rafael Pérez-Torres, PhD  
Sherene H. Razack, PhD (*Penny Kanner  
Endowed Professor of Women's Studies*)  
Abigail C. Saguy, PhD  
Jennifer A. Sharpe, PhD  
David Delgado Shorter, PhD  
Shannon E. Speed, PhD  
Juliet A. Williams, PhD

### Professors Emeriti

Sondra Hale, PhD  
Sandra Harding, PhD  
Françoise Lionnet, PhD  
Christine A. Littleton, JD  
Susan K. McClary, PhD  
James A. Schultz, PhD

### Associate Professors

Lieba B. Faier, PhD  
Sarah Haley, PhD  
Elizabeth A. Marchant, PhD  
Uri G. McMillan, PhD  
Kathryn Norberg, PhD  
Sarah T. Roberts, PhD  
Sharon J. Traweek, PhD

### Assistant Professors

Juliann T. Anesi, PhD  
Alisa M. Bierria, PhD  
Joshua J. Guzmán, PhD  
Ju Hui Judy Han, PhD  
Zeynep K. Korkman, PhD

## Overview

The Department of Gender Studies offers interdisciplinary academic programs that are both nationally and transnationally oriented.

Students develop critical reasoning and analytic skills, a deep appreciation for complexities of power and asymmetries in gender relations across time, class, and cultures, and conceptual tools for social change.

The Gender Studies curriculum challenges the pervasive theory/practice divide within the academy. In both undergraduate and graduate courses, students are taught a broad range of methodological and analytical skills. Core undergraduate courses contextualize foundational theories and key analytic concepts within the study of different historical periods and social movements. In designating these courses power, knowledge, and bodies, the department identifies three primary areas in which feminist and queer inquiry has been concentrated over time, enabling students to trace grounding concepts, key controversies, and the emergence of new theoretical paradigms.

The department has long enjoyed recognition for its strengths in areas including women's history, feminist science studies, and gender and the law. Over the past decade, it has become a leading program for interdisciplinary intersectional feminist scholarship on gender, sexuality, race, class, and nationality; and has built a strong reputation in transnational feminist studies, studies of settler colonialism, neoliberalism, racial violence, cultural politics, migration, social movements, affect, visual culture, and disability, as well as feminist policy studies, critical prison studies, women of color feminism, queer of color critique, and queer theory.

## Undergraduate Major

### Gender Studies BA

The major in Gender Studies may be taken alone or in conjunction with another Letters and Science major. In the case of a double major, no more than five courses may be applied toward both majors.

### Capstone Major

The Gender Studies major is a designated capstone major. Students are required to complete a senior seminar in which they conduct original research while studying readings that consider how disciplinary and interdisciplinary research has been conducted and critiqued. Through their senior seminar work, students produce a significant work that may include an original research paper, a media project, or an in-depth literature review. They are expected to demonstrate working knowledge of the field of gender studies; understand key theoretical approaches in the study of women, gender, and sexuality; have ability to construct well-written analytic essays and present their work orally; and conduct a research project that involves the consultation of scholarly literature and presentation of evidence to support an argument.

### Learning Outcomes

The Gender Studies major has the following learning outcomes:

- Demonstrated working knowledge of the field of gender studies
- Understanding of key theoretical approaches in the study of women, gender, and sexuality
- Demonstrated ability to construct well-written analytic essays and give an oral presentation

- Conduct a research project that involves the consultation of scholarly literatures and presentation of evidence to support an argument

## Entry to the Major

### Admission

To be admitted to the major, students must have completed Gender Studies 10, be in good standing, and formally register with the department. They are encouraged to declare their major as early as possible and to discuss their proposed course of study with the undergraduate adviser.

Students are encouraged to draw on diverse UCLA resources in creating their program of study. They may pursue traditional and/or innovative subjects in fields ranging from the humanities and fine arts to the social and life sciences. In addition to courses on the gender studies approved list, students may petition to have diverse courses accepted, including courses outside the College of Letters and Science, independent studies, or field study courses.

Each course applied toward the major must be taken for a letter grade, and students must have a grade-point average of 2.0 or better in gender studies courses to receive credit for completing the program. Courses in which they receive grades of C- or lower may not be applied toward the required courses in the major.

### Transfer Students

Transfer applicants to the Gender Studies major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one multidisciplinary gender studies course and departmental lower-division requisite courses.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Gender Studies 10. Students must also complete departmental lower-division requisites, as applicable, for upper-division gender studies courses.

### The Major

The major is designed to (1) impart core concepts in theory and critical analysis, research design, and methods; and (2) provide students with exposure to a range of feminist and queer scholarship across disciplines. To achieve these goals, the major is divided into three categories.

*Required:* At least 11 upper-division courses (minimum of 4 units each) as follows: (1) three core courses—Gender Studies 102, 103, 104, (2) seven elective courses; one upper-division tutorial (minimum of 4 units) selected from course 195, 197, or 199 may be applied toward the elective requirement (this limit does not apply to course 198A or 198B), and (3) course 187 (capstone seminar).



## Honors Program

The honors program is open to advanced junior and senior Gender Studies majors with a 3.6 grade-point average in gender studies courses and a minimum 3.4 overall GPA who have no outstanding Incomplete grades, and to majors who demonstrate ability to do honors work by submitting a paper to the department chair for approval.

To qualify for honors at graduation, students must successfully complete three successive terms of honors research (courses 198A, 198B, 198C) with their faculty sponsor and receive a grade of B+ or better on their research paper/project. Course 198A may be applied toward the elective requirement; courses 198B and 198C are in addition to the minimum required courses. more information is available from the undergraduate counselor in the department office.

## Undergraduate Minor

### Gender Studies Minor

The Gender Studies minor augments and enriches study in a traditional field. Students participating in this program are required to complete both a departmental major and the Gender Studies minor.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and formally register with the department undergraduate advisers in 1120 Rolfe Hall. They are encouraged to declare the minor as early as possible.

### The Minor

*Required Lower-Division Course (5 units):* Gender Studies 10. Students must also complete departmental lower-division requisites, as applicable, for upper-division gender studies courses.

*Required Upper-Division Courses (24 units):* (1) One core course from Gender Studies 102, 103, or 104, (2) 120SL or 187 or an equivalent senior research seminar approved in advance, and (3) four upper-division courses (minimum of 4 units each) from the approved gender studies course list.

### Policies

No more than 4 units of courses 195 through 199 may be applied.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Courses in which students receive grades of C– or lower may not be applied toward the core requirements in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Gender Studies MA, PhD

The graduate program offers Master of Arts (for PhD students only, no terminal master's degree) and PhD degrees.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Gender Studies

### Lower-Division Courses

**10. Introduction to Gender Studies. (5)** Lecture, three hours; discussion, one hour. Introduction to key concepts in study of sex and gender. Exploration of topics such as gender socialization, body image, sexualities, masculinities, and women's subordination. Special emphasis on interaction of gender with other identity markers such as race, nation, ethnicity, sexuality, class, and other differences. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101W. Writing Gender. (5)** Lecture, three hours. Requirement: English Composition 3. Development of critical reading and writing skills necessary for academic success. Students engage assigned readings in conversation with week's leading question. Generation and continuous development of paper topic as result of in-class discussions and formal writing exercises. Small writing groups assist students in understanding relationship between how written thoughts are presented and how they are comprehended by different readers. Students gain understanding of writing process, including topic conceptualization, objective of writing project, organization of thoughts and resources, selection of objects of study, personal writing style, etc. Satisfies Writing II requirement. Letter grading.

**102. Power. (4)** Lecture, three hours; discussion, one hour (when scheduled). Enforced requisite: course 10. Consideration of how feminist social movements have identified and challenged gender-based subordination and ways feminist theorists have conceived and critiqued traditional theories of power. How have women's and other social movements defined and challenged social, political, and economic subordination? How have feminist theorists addressed subject of power? How do empire, colonialism, liberalism, neoliberalism, and globalization produce distinctive forms of gendered violence, gendered knowledge, and gendered subjectivities? How are gender and sexuality produced and regulated by law, nation, and economy? P/NP or letter grading.

**103. Knowledge. (4)** Lecture, three hours; discussion, one hour (when scheduled). Enforced requisite: course 10. Exploration of social production of knowledge about gendered subjects and gender systems. Students engage key issues in feminist theory and feminist epistemology. How do feminist scholars identify and frame research questions? How is knowledge about marginalized subjects produced? How has feminism challenged dominant understandings of knowledge, rationality, objectivity, and scientific method? How have social movements sought to challenge traditional modes of knowledge production? P/NP or letter grading.

**104. Bodies. (4)** Lecture, three hours; discussion, one hour (when scheduled). Enforced requisite: course 10. Exploration of scholarly theories and histories of body, with focus on topics such as sex identities, sexuality, gendered violence, and reproductive politics. How has science, medicine, and culture sought to distinguish male from female in different historical periods and locations? How have meanings of terms sex and gender varied across time and place? How has gendered body been represented in different visual cultures? How have embodied identities been produced in different historical and geographic contexts? What is relationship between embodiment and desire? P/NP or letter grading.

**M104C. Diversity in Aging: Roles of Gender and Ethnicity. (4)** (Same as Chicana/o and Central American Studies M106B, Gerontology M104C, Public Affairs M131, and Social Welfare M104C.) Lecture, four hours. Exploration of complexity of variables related to diversity of aging population and variability in aging process. Examination of gender and ethnicity within context of both physical and social aging, in multidisciplinary perspective utilizing faculty from variety of fields to address issues of diversity. Letter grading.

**105. Topics in Women and Medicine. (4)** Lecture/discussion, three hours. Examination of medical conditions of women in context of issues that impact women's health, healthcare, and healthcare providers. Discussion of basic health concepts and self-care; consideration of a women's health speciality and ways to deliver healthcare to women. Exploration of roles and lifestyles of female physicians. P/NP or letter grading.

**M105A. Premodern Queer Literatures and Cultures. (5)** (Same as English M101A and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of discrete period of queer literature from beginning to circa 1850. Works by such writers as Sappho, Plato, Marlowe, Shakespeare, and Thomas Gray may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M105B. Queer Literatures and Cultures, 1850 to 1970. (5)** (Same as English M101B and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Survey of discrete period of queer literature and culture from circa 1850 to 1970. Works by such authors as Walt Whitman, Radclyffe Hall, Gertrude Stein, Virginia Woolf, Langston Hughes, Tennessee Williams, Henry Blake Fuller, and James Baldwin may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M105C. Queer Literatures and Cultures after 1970.** (5) (Same as English M101C and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101C.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Examination of cultural production, specifically literature, produced by queers after Stonewall rebellion in New York in 1969, widely regarded as origins or beginning of modern lesbian and gay rights movement in U.S. Writings and films by such authors as Andrew Holleran, Leslie Feinberg, Achy Obejas, Essex Hemphill, Audre Lorde, Cheryl Dunye, and Alison Bechdel may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M105D. Studies in Queer Literatures and Cultures.** (5) (Same as English M101D and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101D.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Variable specialized studies course in queer literatures and cultures. Topics focus on particular problem or issue in terms of its relationship to queer cultures and writings. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M106. Imaginary Women.** (5) (Same as Honors Collegium M106.) Seminar, four hours. Designed for juniors/seniors. Study of four female cultural archetypes—absconding wife/mother, infanticide mother, intellectual woman, and warrior woman—as they appear in their classical and modern manifestations in European and American cultures. P/NP or letter grading.

**M107A. Studies in Women's Writing.** (5) (Same as English M107A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Focus on women writers that may include historical, regional, national, or thematic emphasis, with possible topics such as authorship, self-writing, sexuality, gender, and genre. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M107B. Studies in Gender and Sexuality.** (5) (Same as English M107B and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M107B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Examination of literary and cultural production through lens of gender and sexuality. Depending on instructor, emphasis may be historical, regional, national, comparative, or thematic and include other intersectional vectors of identity and representation such as race and ethnicity. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**108S. Violence against Women.** (4) Lecture, three hours. Requisite: course 10. Factual information and theoretical analyses regarding various forms of violence against women and girls in their homes, workplaces, and communities through critical examination of social structures and social science research. Letter grading.

**M109. Women in Jazz.** (4) (Same as African American Studies M109, Ethnomusicology M109, and Global Jazz Studies M109.) Lecture, four hours; discussion, one hour. Sociocultural history of women in jazz and allied musical traditions from 1880s to present. Survey of women vocalists, instrumentalists, composers/arrangers, and producers and their impact on development of jazz. P/NP or letter grading.

**M110C. Topics in Feminist Philosophy: Metaphysics and Epistemology.** (4) (Same as Philosophy M187.) Lecture, three hours; discussion, one hour (when scheduled). Requisite for Gender Studies majors: course 10; for other students: one philosophy course. Examination in depth of different theoretical positions on gender and women as they have been applied to study of philosophy. Emphasis on theoretical contributions made by new scholarship on women in philosophy. Critical study of concepts and principles that arise in discussion of women's rights and liberation. Philosophical approach to feminist theories. May be repeated for credit with consent of instructor. P/NP or letter grading.

**M111. Women and Film.** (6) (Same as Film and Television M111.) Lecture, eight hours; discussion, one hour. Historical issues and critical approaches to women and cinema that may include authorship,

stardom, female genres, and images of women in Hollywood cinema, alternative cinema, and independent cinema from silent era to present. Letter grading.

**112. Special Topics in Women and Arts.** (4) Lecture, three hours. Requisite: course 10. Selected topics relating feminist theories to creation of art by women, with consideration of cultural contexts in which they work. Approach to be comparative, cross-cultural, and interdisciplinary. Consideration of artistic practice by women in relation to issues of power, representation, and access. May be repeated twice, except for credit toward Gender Studies major. P/NP or letter grading.

**113. Sex Work.** (4) Lecture, three hours. Enforced requisite: course 10. Analysis of variety of contemporary sex work both in U.S. and abroad from feminist perspective. Examination of how race, class, and gender alter experience and perception of erotic labor, and consideration of critically feminist responses by range of authors to sex work. Topics include brothels, phone sex, strip clubs, sex tourism, military prostitution, and international traffic in persons. Reading of texts by sex workers, as well as articles from current philosophical and policy debates about prostitution. P/NP or letter grading.

**M114. Introduction to Lesbian, Gay, Bisexual, Transgender, and Queer Studies.** (5) (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M114.) Lecture, three hours; discussion, one hour. Introduction to history, politics, culture, and scientific study of lesbians, gay men, bisexuals, transgendered, and queer people; examination of sexuality and gender as categories for investigation; interdisciplinary theories and research on minority sexualities and genders. P/NP or letter grading.

**M115. Topics in Study of Sexual and Gender Orientation.** (4) (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M115.) Lecture/discussion, three hours. Requisite: course 10 or M114. Studies in arts, humanities, social sciences, and/or life sciences on aspects of sexual orientation, gender identity, and lesbian, gay, and/or bisexual issues; variable topics may include cultural representations, historical and political change, life and health experiences, and queer or transgender theories; multiethnic and cross-cultural emphases. May be repeated for credit. Letter grading.

**M116. Sexuality and City: Queer Los Angeles.** (4) (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M116.) Lecture, three hours. Requisite: course M114. Investigation of history, culture, and political economy of lesbian, gay, bisexual, and transgender Los Angeles. Letter grading.

**117. Introduction to Queer Latina/Latino Studies.** (4) Lecture, three hours. Examination of production of Latina/Latino identity and its limitations as it emerges within contemporary literature, music, film, and performance art. Engagement with texts that posit queer analytical approach to study how *Latinidad* is informed by modes of desire and identification that fall out of dominant notions of Latino in popular culture. Critical engagement of limits of knowledge production around Latina/Latino identity to develop new analytics that abide by question of *Latinidad* rather than posit answer or solution to its political consequences in contemporary U.S. culture. Study draws upon feminist and queer artists such as Ana Mendieta, Nao Bustamante, Asco, Carmelita Tropicana, Gloria Anzadúa, Felix-Gonzales Torres, Gil Cuadros, and Gregg Araki. P/NP or letter grading.

**M118. Queering American History.** (4) (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M118.) Lecture, four hours. Enforced requisite: one prior lesbian, gay, bisexual, transgender, and queer studies course. History of sexual and gender minorities in U.S. Topics include changing norms, romantic friendships, medical discourse, liberation politics, post-Stonewall culture, AIDS, transgender movement, queer theory, and politics. P/NP or letter grading.

**119 Racial Violence and Law.** (4) Lecture, three hours. Requisite: course 10. Through feminist, anti-colonial, and anti-racist framework, exploration of racial violence and appropriate anti-violence strategies. Offers theoretical approach for understanding racial violence. Consideration of what is racial violence and ra-

cial terror; how feminists should respond to racial violence; connection between historical moments of extraordinary racial violence and our everyday world; how we understand violence at specific sites, e.g., carceral sites, schools, streets, borders, and in different historical contexts; how individuals come to participate in, remain indifferent to, or approve of violence; role of hegemonic masculinity and femininity in these processes; and how violence is sexualized. Exploration of these broad questions through consideration of anti-indigenous/colonial violence, anti-Black and anti-Mexican violence, racial violence underpinning anti-migrant and anti-refugee movements, torture, terror, and state violence. P/NP or letter grading.

**120SL. Feminist Praxis: Community-Based Learning.** (4) Seminar, three hours; fieldwork, four hours. Preparation: at least two gender studies core courses. Requisites: course 10 and one course from 102, 103, or 104. Service-learning course combining seminar with practical experience working on gender issues and connecting these experiences to methodological and theoretical themes explored in gender studies core courses. Community partners selected in advance by instructor in consultation with Center for Community Learning. Letter grading.

**M121. Topics in Gender and Disabilities.** (4) (Same as Disability Studies M121.) Lecture, three and one half hours. Limited to juniors/seniors. Ways in which issues of disability are affected by gender, with particular attention to various roles, positions, and concerns of women with disabilities. Approach is intersectional, exploring how social categories of class, race, ethnicity, religion, age, sexuality, nationality, and citizenship affect and are affected by gender and disability. Topics may include law (civil rights, nondiscrimination), representation (arts, literature), education, public policy, health. May be repeated for credit with topic and instructor change. P/NP or letter grading.

**122. Masculinities.** (4) Lecture, three hours. Enforced requisite: course 10. Masculinity as theorized by feminists and shaped by race, class, age, and nation. Topics include feminist theories of masculinity, male body, childhood and adolescent socialization, sport, male violence, homophobia, black masculinity, globalization and masculinity, and men's movements in 1970s and beyond. Special emphasis on social sciences approaches and methodologies. P/NP or letter grading.

**123. Gender, Race, and Class in Latin American Literature and Film, 1850 to 1950.** (4) Seminar, three hours. Requisite: course 10. Readings and discussion in English. Comparative survey of cultural expression in Latin America, with emphasis on works produced or set in late-19th and early-20th centuries. Historical and social circumstances of women in different Latin American cultural contexts, with particular concentration on how gender, sexuality, race, and class are absorbed and reflected in literature and film. Within this genealogy, examination of how cultural production sustains or interrogates categories used to construct social, political, and cultural hierarchies. Topics include questions of authorship and authority such as women's participation in formation of national cultures, engagement with artistic movements, and strategies of self-figuration. P/NP or letter grading.

**M124. Sex, Race, and Difference in Transnational Film.** (6) (Same as Film and Television M124.) Lecture, three hours; discussion, one hour. Drawing on feminist media studies, training of students in media literacy so they acquire necessary skills to critically interrogate film as medium of communication and to appreciate how film provides lens to examine some of most critical issues of our time. Development of understanding of transnationality to examine how circulations of capital, labor, and commodities transect, render problematic, and sometimes reinforce national borders. Examination of role of film in both exemplifying and representing these conditions of transnationality. How films enable understanding of historical and contemporary relationships between mobility, coercion, and migration; colonialism and settler colonialism; Orientalism, geopolitics, and sexuality; cultural identity and diaspora; transnational conceptions of sexual desire and

embodiment; immigration and religious difference; and criminalization of racial difference. P/NP or letter grading.

**125. Perspectives on Women's Health. (4)** Lecture/discussion, three hours. Requisite: course 10. Examination in depth of various ways women provide healthcare in both paid and unpaid capacities and of political, economic, and social factors affecting women as recipients of healthcare. P/NP or letter grading.

**M126. Feminist and Queer Theory. (5)** (Same as English M126 and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M126.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: English Composition 3. Recommended: one course from 102, 103, 104, English 120, or 121. Investigation of key concepts and debates in study of gender, sexuality, and kinship, with focus on their interrelated significance for making of culture. Readings to be interdisciplinary, with possible emphasis on impact of changing ideas of gender and sexuality on specific historical cultures. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M127. Women in Russian Literature. (4)** (Same as Russian M127.) Lecture, three hours. Designed for juniors/seniors. Lectures and readings in English. Introduction to alternative tradition of women's writings in Russia and Soviet Union. Emphasis on images of women expressed in this tradition as compared with those found in works of contemporary male writers. P/NP or letter grading.

**M128. Roots of Patriarchy: Ancient Goddesses and Heroines. (4)** (Same as Honors Collegium M118.) Lecture, three hours. Examination of ancient goddesses and heroines—European, Neolithic, Near Eastern, Celtic, Scandinavian, Balto-Slavic, Indo-Iranian, and Greco-Roman—using translations of ancient texts, archaeological evidence, and feminist methodology in order to discover implications of ancient patriarchy on modern society. P/NP or letter grading.

**129. Women and Gender in Caribbean. (4)** Seminar, three hours. Requisite: course 10. Exploration of way in which gender discourses have been central to making of Caribbean history and to some most enduring experiments in European empire, capitalist development, and coercive labor. Emphasis on women who lived through slavery and indentured servitude and who continue to live under systems of globalization and neoliberal exploitation. How Caribbean women have historically empowered themselves and their communities, working in various ways to survive, radicalize, and transform their worlds. Ways in which ideas about gender and sexuality have shaped emergence of new nations and national cultures in Caribbean, and consideration of some dominant images of women in public space and popular culture. Exploration of complicated ways in which gender, race, class, sexuality, and national identity intersect in different Caribbean contexts. P/NP or letter grading.

**130. Women of Color in the U.S. (4)** Lecture/discussion, three hours. Requisite: course 10. Exploration of experiences of African American, Asian American, Chicana, and Native American women in order to assess intersections of race, ethnicity, class, and gender. Contemporary and/or historical and/or theoretical perspectives on racism and its relation to feminism as defined by women of color. P/NP or letter grading.

**131. Feminist Politics in Korea and Diaspora. (4)** Lecture, three hours. Examination of gender, religion, and social movements in Korea and Korean diaspora through interdisciplinary feminist and critical area studies approach. Use of postcolonial, anti-racist, and intersectional feminist lens to discuss Korea and Korean diaspora as site of inquiry and field of knowledge. Close examination of several contemporary political issues, focusing on salient political ideologies and oppositional social movements mobilized by religious groups, and wide range of ideas, institutions, and practices that are animated by complex politics of gender, sexuality, and religion. Topics include Korean and transnational diasporic activism concerning war, imperialism, and militarism; anticommunism and xenophobia; pro-democracy movements and labor organizing; Catholic and Buddhist solidarity and sanctuary

geographies; heteropatriarchy and urban megachurches; faith-based pacifism and conscientious objection to military conscription. P/NP or letter grading.

**CM132A. Chicana Feminism. (4)** (Same as Chicana/o and Central American Studies CM110.) Lecture, four hours. Enforced requisite: course 10 or Chicana/o and Central American Studies 10A. Examination of theories and practices of women who identify as Chicana feminist. Analysis of writings of Chicanas who do not identify as feminist but whose practices attend to gender inequities faced by Chicanas both within Chicana/Chicano community and dominant society. Attention to Anglo-European and Third World women. Concurrently scheduled with course CM232A. P/NP or letter grading.

**M132B. Contemporary Issues among Chicanas. (4)** (Same as Chicana/o and Central American Studies M154.) Lecture, two and one half hours. Requisite: course 10. Overview of conditions facing Chicanas in U.S., including issues on family, immigration, reproduction, employment conditions. Comparative analysis with other Latinas. P/NP or letter grading.

**M133. Chicana Lesbian Literature. (4)** (Same as Chicana/o and Central American Studies M133 and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M133.) Lecture, four hours. Exploration of intersection of radical First and Third World feminist politics, lesbian sexuality and its relationship to Chicana identity, representation of lesbianism in Chicana literature, meaning of *familia* in Chicana lesbian lives, and impact of Chicana lesbian theory on Chicana/Chicano studies. Letter grading.

**M133A-M133B. History of Women in Europe. (4-4)** (Same as History M133A-M133B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of social, political, and cultural roles of women in Western Europe from early Middle Ages to present. P/NP or letter grading. **M133A.** 800 to 1715; **M133B.** 1715 to Present.

**M133C. History of Prostitution. (4)** (Same as History M133C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of prostitution from ancient times to present. Topics include toleration in medieval Europe, impact of syphilis, birth of courtesan, regulation in 19th-century Europe, white slavery scare, and contemporary global sex trade. Readings include novels, primary sources, and testimony by sex workers. P/NP or letter grading.

**134. Gender, Science, and Theory. (4)** Lecture, three hours. Requisite: course 10. Examination of differing theoretical perspectives on relation between ideologies of gender and conceptualization and practice of science and medicine. Study of relations among gender, race, class, and sexual orientation and production and legitimization of scientific knowledge. Applications of theoretical critiques to research design, practice, and interpretation. Letter grading.

**M135C. Bilingual Writing Workshop. (4)** (Same as Chicana/o and Central American Studies CM135 and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M135.) Seminar, four hours. Limited to juniors/seniors. Writing sample required; access to course web page mandatory; need not be bilingual to enroll. Technical instruction, analysis, and theoretical discussion of bilingual creative expression through genre of short fiction. Bilingualism as both politics and aesthetics to be central theme. Discussion and analysis of Chicana/Chicano and Latina/Latino short story collections. Peer critique of weekly writing assignments. Emphasis on narrative techniques such as characterization, plot, conflict, setting, point of view, and dialogue, and magical realism as prevailing Chicanesque/Latinesque style. Some attention to process of manuscript preparation, public reading, and publication. Letter grading.

**M136. Music and Gender. (5)** (Same as Musicology M136.) Lecture, four hours; discussion, one hour. Analysis of gender ideologies in several musical cultures; representations of gender, body, and sexuality by both male and female musicians; contributions of women to Western art and popular musics; methods in feminist and gay/lesbian theory and criticism. Letter grading.

**M137E. Work Behavior of Women and Men. (4)** (Same as Psychology M137E.) Lecture, two and one half hours. Requisite: course 10 or Psychology 10. Designed for seniors. Examination of work behavior of women and men. Topics include antecedents of career choice, job findings, leadership, performance evaluation, discrimination and evaluation bias, job satisfaction, and interdependence of work and family roles. P/NP or letter grading.

**138. Gender and Popular Culture. (5)** Lecture, three hours; screenings, two hours. Limited to juniors/seniors. Conceptual tools and critical skills necessary to rigorously interrogate gender politics of popular culture in the U.S. context. Consideration of theories of popular culture and exploration of distinctive power and ideological force exerted by popular culture in American public life. Examination of specific representations of male and female bodies to understand visual vocabulary of gender in popular culture, as well as relationship between visual stereotypes and regimes of power. Consideration of debates concerning transformative potential of pop culture and exploration of capacity and limits of popular culture as agent of social change. Letter grading.

**139. Women and Art in Contemporary U.S. (4)** Lecture/discussion, three hours. Requisite: course 10. Exploration of some significant cultural issues of contemporary American women's art movement. Representation, resistance, and critical intervention in relation to gender, race, and class. Emphasis on visual and performance arts as these reflect various perspectives of feminism. Letter grading.

**M140C. Class and Gender in Care Work. (4)** (Same as Asian American Studies M162, Chicana/o and Central American Studies M128B, and Labor Studies M143.) Lecture, three hours; discussion, one hour. Examination of how gender, race, class, and citizenship status shape domestic labor in U.S. Examination of domestic worker experiences through film, fiction, and traditional scholarship. Investigation of why domestic work is in high demand, who employs domestic workers, and why immigrants and women of color make up large percentage of this workforce. Exploration of how domestic workers navigate pay and working conditions, and how they build community and family networks in shadows of their privileged employers. P/NP or letter grading.

**141. Gender, Culture, and Capitalism. (4)** Lecture, three hours. Dynamic investigation of culture as terrain of production—and reproduction—of and resistance to gendered, racialized, and classed inequalities through active analysis of advertisements, television serials, Disney fairy tales, and performative forms like fortunetelling. Focus on relationships between gender, culture, and capitalism through lenses of transnational feminist and queer cultural studies to explore gendered processes of production and consumption of culture under capitalism. P/NP or letter grading.

**142. Race, Gender, and Punishment. (4)** Seminar, three hours. Enforced requisite: course 10. Examination of what crisis scholars have called prison industrial complex. U.S. has largest prison population in world. How and why is this? Who is imprisoned? What historical conditions and ideologies gave rise to this massive explosion in prisoner population? Does prison function as regime? How have politicians used imprisonment as response to economic transformations and social disorders? How is current crisis analogous to or distinct from regimes of racialized punishment in prior historical moments? How do prisons change environments? How have people mobilized to reduce U.S. prison population? Why do some activists argue for reform and others for abolition? Examination of key topics, including policing and racial profiling, immigrant detention, privatization, spatial transformations, gender violence, prison spending, and political imprisonment. P/NP or letter grading.

**CM143XP. Healing, Ritual, and Transformation. (4)** (Formerly numbered CM143.) (Same as World Arts and Cultures CM140XP.) Lecture, four hours. Designed for juniors/seniors. Examination of how various cultures think of health and wellness, not only individually but collectively. Exploration of structural inequalities within health care and medical sciences. Students are required to contribute weekly to service learning

component, working with individuals and organizations in fields of health and wellness including healers, non-profits, and organizations working for social justice. May be concurrently scheduled with CM243XP. Letter grading.

**M144. Women's Movement in Latin America. (4)** (Same as Chicana/o and Central American Studies M144 and Labor Studies M144.) Lecture, four hours. Course on women's movements and feminism in Latin America and Caribbean to examine diverse social movements and locations from which women have launched political and gender struggles. Discussion of forms of feminism and women's consciousness that have emerged out of indigenous rights movements, environmental struggles, labor movements, Christian-based communities, peasant and rural organizing, and new social movements that are concerned with race, sexuality, feminism, and human rights. Through comparative study of women's movements in diversity of political systems as well as national and transnational arenas, students gain understanding of historical contexts and political conditions that give rise to women's resistance, as well as major debates in field of study. P/NP or letter grading.

**145. African American Women's History. (4)** Seminar, three hours. Enforced prerequisite: course 10. Historical examination of black women's experiences in U.S. from antebellum era to present. By situating their experiences within major historical transitions in American history, exploration of key themes, including gender formation, sexuality, labor and class, collective action, gender and sexual violence, reproduction, and role of law. How have intersecting forms of oppression impacted black women's historical lives? How is difference constructed through interrelated and overlapping ideologies of race and gender? How do historians uncover their historical lives and what are challenges to such discoveries? Examination of their individual and collective struggles for freedom from racism, sexism, and heteropatriarchy as well as their participation in and challenge to social movements, including suffrage, women's liberation, civil rights, and black power. P/NP or letter grading.

**M146. Feminist Geography. (4)** (Same as Geography M144.) Lecture, three hours; discussion, one hour. Critical engagement of gender as concept of geographic inquiry. Gender as spatial process, analysis of feminist geographic theory and methods, landscapes of gender, challenges of representing gender. Spaces of femininity, masculinity, and sexuality. P/NP or letter grading.

**M147A. Psychology of Lesbian Experience. (4)** (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M147A and Psychology M147A.) Lecture, two hours; discussion, one hour. Prerequisite: course 10 or M114 or Psychology 10. Designed for juniors/seniors. Review of research and theory in psychology and gender studies to examine various aspects of lesbian experience, impact of heterosexism/stigma, gender role socialization, minority status of women and lesbians, identity development within a multicultural society, changes in psychological theories about lesbians in sociohistorical context. P/NP or letter grading.

**M147B. History of Women in Colonial British America and Early U.S., 1600 to 1860. (4)** (Same as History M147C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to major themes in history of early American women from initial confrontation of English and American Indian cultures in early 17th century to rise of women's rights movement in mid-19th century. P/NP or letter grading.

**M147C. Transnational Women's Organizing in Americas. (4)** (Same as Chicana/o and Central American Studies CM147.) Lecture, four hours. Feminist theories of transnational organizing. Examination of gender and race as central to processes of globalization and essential to economic and political struggles encompassed in transnational power relations. Exploration of how questions of race and gender influence global economic policies and impact local actors and their communities. In time when people, capital, cultures, and technologies cross national borders with growing frequency, discussion of process of acceler-

ated globalization has been linked to feminization of labor and migration, environmental degradation, questions of diaspora, sexuality, and cultural displacement, as well as growing global militarization. Problems and issues created by globalization and cultural, social, and political responses envisioned by transnational organizing. P/NP or letter grading.

**M147D. History of Women in U.S., 1860 to 1980. (4)** (Same as History M147D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to major themes in history of American women from abolition of slavery and Civil War to rise and consequences of second-wave feminism. P/NP or letter grading.

**M149. Media: Gender, Race, Class, and Sexuality. (5)** (Same as Communication M149 and Labor Studies M149.) Lecture, four hours; activity, one hour. Limited to junior/senior Communication and Gender Studies majors and Labor Studies minors. Examination of manner in which media culture induces people to perceive various dominant and dominated and/or colonized groups of people. Ways in which women, gay, lesbian, bisexual, transgendered, racial, and ethnic marginalized peoples, class relations, and other subaltern or subordinated groups are presented and often misrepresented in media. Investigation and employment of practical applications of communications and feminist theories for understanding ideological nature of stereotyping and politics of representation through use of media, guest presentations, lectures, class discussions, and readings. Introduction to theory and practice of cultural studies. Letter grading.

**152. Gender, Disability, and Education. (4)** Lecture, three hours. Drawing on critical theory, study engages intersections of disability as it is theorized, constructed, and lived as post/neocolonial condition. Study bridges disability scholarship between global North and South, as well as interdisciplinary fields of feminist disability studies—which assumes disability is always inextricably linked to other social markers, such as gender, race, sexuality, and social class—and indigenous studies—which studies complex and diverse cultures and histories, and their impacts on society. Study locates relationship to disability, gender, and education through decolonial lens and explores topics of phenomenology of lived body and relations to land. P/NP or letter grading.

**153. Gender and Comics. (4)** Seminar, three hours. Study of cultural politics of comics—broadly defined to include comic books, cartoons, graphic novels, manga, manhwa, graphic memoirs, documentary comics, etc.—with focus on feminist genealogies and transnational dynamics. Introduction to comics as form of graphic storytelling and sequential art, beginning with primer on basic terminology for reading, discussing, and making comics. For historical context, consideration of gendered youth culture, superheroes, Cold War geopolitics, and comics industry in U.S. and beyond. Examination of comics written for kids and young adults as well as for mature audiences and critical readers, including comics that range from funny and heartwarming to seriously dark, irreverent, and even risqué. These include alternative comics, underground comix, and feminist and queer comics that circulated through alternative newspapers and small presses before rise of graphic novels. Examination also of graphic memoirs, comics journalism, etc. P/NP or letter grading.

**M154P. Marriage, Family, and Kinship. (4)** (Same as Anthropology M145P.) Lecture, three hours. Prerequisite: Anthropology 3. Examination of understandings of kinship in cross-cultural perspective and impact of kinship on interpersonal relationships, gender roles, and sociocultural systems. Readings from popular materials and formal ethnographic accounts. P/NP or letter grading.

**M154Q. Selected Topics in Gender Systems. (4)** (Same as Anthropology M145Q.) Lecture, three hours. Recommended preparation: prior anthropology or gender studies courses. Designed for junior/senior social sciences majors. Comparative study of women's lives and gender systems and cultures from anthropological perspective. Critical review of relevant theoretical issues using ethnography, case study, and pre-

sentations. Consult Schedule of Classes for topics and instructors. May be repeated for credit with topic change. P/NP or letter grading.

**M154R. Women and Social Movements. (4)** (Same as Anthropology M145R.) Lecture/discussion, three hours. Recommended preparation: prior gender studies or anthropology courses. Comparative studies of social movements (e.g., nationalist, socialist, liberal/reform), beginning with Russia and China and including Cuba, Algeria, Guinea-Bissau, Mozambique, Nicaragua, and Iran. Analysis of women's participation in social transformations and the centrality of gender interests. P/NP or letter grading.

**M154T. Women's Voices: Their Critique of Anthropology of Japan. (4)** (Same as Anthropology M145T.) Lecture, three hours. Preparation: introductory socio-cultural anthropology course. The anthropology of Japan has long viewed Japan as a homogeneous whole. Restoration of diversity and contradiction in it by listening to voices of Japanese women in various historical contexts. P/NP or letter grading.

**156A. History of Women in the U.S.: Rebellious Women of 20th Century. (4)** Lecture, three hours. Limited to juniors/seniors. Introduction to major and minor figures and movements for social change in the U.S., including themes from politics, sports, civil rebellions, and body. Examination of dramatic challenges to gender roles over course of the 20th century through actions of rebellious women who led way for myriad of changes in women's lives. Offered in summer only. P/NP or letter grading.

**M157. Chicana Historiography. (4)** (Same as Chicana/o and Central American Studies M158 and History M151D.) Lecture, four hours. Examination of Chicana historiography, looking closely at how practice of writing of history has placed Chicanas into particular narratives. Using Chicana feminist approaches to study of history, revisiting of specific historical periods and moments such as Spanish Conquest, Mexican Period, American Conquest, Mexican Revolution, and Chicano Movement to excavate untold stories about women's participation in and contribution to making of Chicana and Chicano history. P/NP or letter grading.

**M158. Women, Gender, and Sexuality in Italian Culture. (4)** (Same as Italian M158.) Lecture, three hours; discussion, one hour. Analysis of gender roles, images of femininity and masculinity, patriarchy, myths of Madonna and Latin lover, condition of women in Italian society through history, politics, literature, film, and other media. Italian majors required to read texts in Italian. P/NP or letter grading.

**160. Sporting Bodies. (4)** Lecture, three hours. Recommended prerequisite: course 10. From Don Imus' 2007 "nappy-headed hos" comment to controversies about transgender athletes or athletes with prosthetics; from covers of magazines to violence in Dodger's Stadium parking lot; footballers not standing during national anthem, college men's teams rating women's teams in terms of sexual positions, unionization of athletes—discourses of sport draw heavily upon extant ideologies of race, gender, sexuality, and class. Introduction to critical analyses of social categories and how they are represented and reproduced in various sports and media. Critical examination of historical social values and how they are reproduced through sport. P/NP or letter grading.

**M161. Sports, Normativity, and Body. (4)** (Same as Disability Studies M161.) Lecture, four hours. Since creation of International Olympic Committee in 1894, athletes with disabilities have had, and been denied, formal opportunities to compete with able-bodied athletes. Overview of some major topics of discussion concerning intersections of athletic competition and disability, addressing variety of perspectives and themes on disability and sport, such as passing, sports integration, competition versus charity, and masculinity. Sources include readings, film, television, and biographical writings that address sports, body and disability generally, and Special Olympics specifically. P/NP or letter grading.

**M162. Sociology of Gender. (5)** (Same as Sociology M162.) Lecture, three hours; discussion, one hour. Enforced prerequisite: course 10 or Sociology 1. Examination of processes by which gender is socially constructed. Topics include distinction between biological



sex and sociological gender, causes and consequences of gender inequality, and recent changes in gender relations in modern industrial societies. P/NP or letter grading.

**M163. Gender and Work. (4)** (Same as Sociology M163.) Lecture, three hours. Requisite: course 10 or Sociology 1. Exploration of relationship of gender to work, concentrating on the U.S. experience but also including some comparative material. Particular emphasis on analysis of causes and consequences of job segregation by gender and of wage inequality. P/NP or letter grading.

**M164. Politics of Reproduction and Everyday Life. (4)** (Same as Sociology M164.) Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Social and human reproduction is global policy issue. Government efforts to influence reproduction are important feature of modern state: political intervention into private life, intimacy, and sexuality. Exploration of politics of reproduction—intersection between politics and life cycle or between public sphere and private lives—and coverage of broad range of issues addressing prevention and promotion of reproduction from historical-comparative approach. Reading, discussion, and development of culminating project. P/NP or letter grading.

**M164A. Women, Violence, Globalization: India, Philippines, Singapore, Vietnam. (4)** (Same as Asian American Studies M164.) Lecture, four hours. Study of various forms of violence done on women not only in and of themselves but in light of larger systems of oppression, with focus on Pilipino, Vietnamese, Singaporean, and South Asian cultures. Letter grading.

**M165. Psychology of Gender. (4)** (Same as Psychology M165.) Lecture, three hours. Consideration of psychological literature relevant to understanding contemporary sex differences. Topics include sex-role development and role conflict, physiological and personality differences between men and women, sex differences in intellectual abilities and achievement, and impact of gender on social interaction. P/NP or letter grading.

**M167. Contested Sexualities. (4)** (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M167.) Lecture, three hours; discussion, one hour. Sociological perspectives on formation, control, and resistance of lesbian, gay, bisexual, and transgendered people. Variable topics include identity and community; age, class, gender, and racial diversity; and analysis of contemporary issues affecting contested sexualities. Letter grading.

**168. Feminist Economics in Globalizing World. (4)** Lecture, four hours. Preparation: satisfaction of Letters and Science Writing II requirement. Requisite: course 10. Designed for juniors/seniors. Overview of field of feminist economics, with emphasis on development experiences in globalizing world economy. Overview of gender inequalities such as gender division of labor in paid and unpaid work, patterns of employment and unemployment, and wage gaps between men and women in different world economy regions; feminist critiques of economics and of theoretical debates within gender and development field on topics such as structural adjustment, feminization of labor force, and poverty; examination of efforts and proposals by governments, international policy-making institutions, and civil society organizations to make economic policies and structures gender-equitable. P/NP or letter grading.

**M169. Common Thread: Garment Workers Past, Present, Future. (4)** (Same as Chicana/o and Central American Studies M128C and Labor Studies M108.) Lecture, three hours. Study blends frameworks from economics, labor history, and ethnic studies to offer in-depth exploration of lives and experiences of garment industry workers from early 19th century to present. In contrast to traditional narratives, study locates garment workers—majority of whom are immigrant women—at vanguard of U.S. labor movement, showing how they pioneered new forms of worker education and other social welfare programs, and became leaders in fight for women's, civil, and immigrant rights. Exploration of garment work relationship to American culture, tracing how sweatshop became symbol of worker exploitation, how popular culture

and fashion trends impacted lived realities of workers in those shops, and how racial and gendered expectations shaped public perceptions of garment workers. By doing so, study reveals garment work to be central thread that ties together histories of global trade, industrialization, gender and sexuality, immigration, radicalism, unionization, and American imperialism. P/NP or letter grading.

**CM170. Alternate Traditions: In Search of Female Voices in Contemporary Literature. (5)** (Same as Comparative Literature CM170.) Seminar, three hours. Designed for upper-division literature majors. Investigation of narrative texts by contemporary French, German, English, American, Spanish American, African, and Asian women writers from cross-cultural perspective. Common themes, problems, and techniques. Concurrently scheduled with course CM270. P/NP or letter grading.

**M170C. History of Women in China, AD 1000 to Present. (4)** (Same as History M170C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Topics include women and family, women in Confucian ideology, women in literati culture, feminist movement, and women and communist revolution. P/NP or letter grading.

**171A. Women, Gender, and Law: Jurisprudence of Sexual Equality. (4)** Lecture, four hours. Enforced requisite: course 10. Recommended: course 102 or 103 or 104. Exploration of models of equality described and/or advocated by legal theorists primarily in U.S.—equality of opportunity, equality of outcome, equality of respect, etc.—using specific problems of women (e.g., sexual harassment, pregnancy leave policy, access to safe and effective reproductive control technologies) for purposes of comparison and critique. Specific focus may vary by instructor (e.g., consideration of sexual equality theories to issues of gender equity, legal status of women in countries outside U.S. or from perspectives of international human rights). May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M172. Afro-American Woman in U.S. (4)** (Same as African American Studies M172 and Psychology M172.) Lecture, two and one half hours. Designed for juniors/seniors. Impact of social, psychological, political, and economic forces which impact on interpersonal relationships of Afro-American women as members of large society and as members of their biological and ethnic group. P/NP or letter grading.

**M173B. Women in 20th-Century Japan. (4)** (Same as History M173B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Japanese women in Japanese and world history through state documents, autobiographical voices, contemporary television, and other varying historical sources, including topics such as women and new political order (1900 to 1930), women, war, and empire (1930 to 1945), and women in consumer society (1980s to 1990s). P/NP or letter grading.

**M174. Sociology of Family. (4)** (Same as Sociology M174.) Lecture, three hours; discussion, one hour. Theory and research dealing with modern family, its structure, and functions, including historical changes, variant family patterns, family as institution, and influence of contemporary society on family. P/NP or letter grading.

**M175. Women and Cities. (4)** (Same as Urban Planning M175.) Lecture, three hours. Limited to juniors/seniors. Examination of relationship between women and cities: (1) how cities have affected women's opportunities for economic and social equality, (2) women's contributions to development of U.S. cities, and (3) contemporary strategies and efforts to create urban environments that reflect women's needs and interests. P/NP or letter grading.

**CM178. Critical Media Literacy and Politics of Gender: Theory and Production. (4)** (Same as Education CM178.) Seminar, three hours. Corequisite: course CM178L. Use of range of pedagogical approaches to theory and practice of critical media literacy that necessarily involves understanding of new technologies and media forms. Study of both theory and production techniques to inform student analysis of media and critical media literacy projects. Concurrently scheduled with course CM278. Letter grading.

**CM178L. Critical Media Literacy and Politics of Gender: Laboratory. (2)** (Same as Education CM178L.) Laboratory, two hours. Corequisite: course CM178. Hands-on production experience as integral component of course CM178. Concurrently scheduled with course CM278L. Letter grading.

**M180B. Historical Perspectives on Gender and Science. (4)** (Same as History M180B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Historical cases illustrating how gender enters practices and concepts of science. Topics include gendered conceptions of nature, persona of man of science, role of women in scientific revolution, scientific investigations of women and feminine. P/NP or letter grading.

**185. Special Topics in Gender Studies. (4)** Lecture, three hours. Preparation: one prior gender studies course. Designed for juniors/seniors. Specialized or advanced study in one area within gender studies. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

**M185A. Special Topics in American Indian and Gender Studies. (4)** (Same as American Indian Studies M187A.) Lecture, three hours. Variable topics in American Indian and gender studies. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

**M186A. Women and Gender, Prehistory to 1792. (4)** (Same as History M186A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of history of women, gender, and sexuality from prehistory to 1792. First half deals with period before written history and asks when did gender appear? How and why did patriarchy develop? Topics include evolution of women's bodies, appearance of gender, women's contribution to Neolithic revolution, significance of Goddess artifacts, creation myths, and women and sexuality in different religions. Consideration of effects of European conquest on Mesoamerican women, women's power in monarchies, gender dimensions of Atlantic slavery, and first manifestations of feminist consciousness in second half. Objects or texts created by women examined or read throughout. P/NP or letter grading.

**M186B. Global Feminism, 1850 to Present. (4)** (Same as History M186B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to movements for women's rights (educational, political, economic, sexual, and reproductive) around world and over one and one half centuries. P/NP or letter grading.

**187. Senior Research Seminar: Gender Studies. (4)** Seminar, three hours. Requisites: courses 10, 102, 103, 104. Designed for advanced junior/senior Gender Studies majors or minors. In-depth study of major theme in feminist research. Themes vary by instructor and term. Students pursue independent research related to course theme, with guidance from instructor, then share and critique other student works in progress. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**M191D. Topics in Queer Literatures and Cultures. (5)** (Same as English M191D and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M191D.) Seminar, three or four hours. Enforced requisite: English Composition 3. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M191E. Topics in Gender and Sexuality. (5)** (Same as English M191E and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M191E.) Seminar, three or four hours. Enforced requisite: English Composition 3. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M191F. Topics in Gender and Disability. (5)** (Same as Disability Studies M191F.) Seminar, three hours. In-depth study of major themes in disability studies and gender studies. Themes vary by instructor and term. Students pursue independent research related to course theme, with guidance from instructor, then share and critique other student works in progress. May be repeated for credit with topic change. Letter grading.

**195. Community or Corporate Internships in Gender Studies. (2 or 4)** Tutorial, eight hours. Requisites: course 102 or 103 or 104, or two upper-division gender studies courses not in 189 to 199 series. Limited to juniors/seniors. Internship in supervised setting in community agency, organization, or business approved by program. Content of student work must apply gender analysis or be focused on some aspect of gender studies. Students meet on regular basis with instructor, provide periodic reports on their experience on-site, and submit final report. Must be taken for 4 letter-graded units to be applied toward Gender Studies major or minor. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195CE. Comparative Approaches to Community and Corporate Internships. (4)** (Same as African American Studies M195CE, American Indian Studies M195CE, Asian American Studies M195CE, and Chicana/o and Central American Studies M195CE.) Tutorial, one hour; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Comparative study of race, gender, and indigeneity in relation to contemporary workplace dynamics. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Gender Studies. (4)** Tutorial, four hours. Preparation: at least two upper-division gender studies courses. Requisite: course 102 or 103 or 104. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Content may include themes in feminist discourse, application of feminist theoretical perspectives to disciplinary field, or emerging areas of inquiry. Assigned reading and

tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. Letter grading.

**198A-198B-198C. Honors Research in Gender Studies. (4-4-4)** Tutorial, four hours. Limited to junior/senior gender studies honors program students. Three-term sequence to research and write honors thesis under direct supervision of faculty sponsor and in consultation with faculty cosponsor. Individual contract required. **198A.** Requisite: course 187. Letter grading. **198B.** Enforced requisite: course 198A. In Progress grading (credit to be given only on completion of course 198C). **198C.** Enforced requisites: courses 198A, 198B. Letter grading.

**199. Directed Research in Gender Studies. (2 or 4)** Tutorial, to be arranged. Preparation: at least two upper-division gender studies courses, minimum 3.0 grade-point average. Requisite: course 102 or 103 or 104. Limited to junior/senior Gender Studies majors and minors. Supervised individual research or investigation under guidance of faculty mentor on specific topic within gender studies. Culminating paper or project required. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**201. Introduction to Interdisciplinary Methods in Gender Studies. (4)** Seminar, three hours. Presentation by faculty members of approaches to interdisciplinary studies and discussion of their own research. Demystification of methods, particularly of interdisciplinary sort, to introduce students to wide range of faculty research and to incorporate questions of ethics. Focus on interdisciplinary gender research that intervenes in knowledge production. Particular issues include approaches to interdisciplinary methods of research, introduction to feminist intersectional and queer theories, effective use of reflexivity and positionality in research and writing, and incorporating ethics into research design, conduct, and teaching. May be repeated once for credit with instructor change. Letter grading.

**202. Key Theories and Concepts in Gender Studies. (4)** Lecture/discussion, three hours. Relationship of debates in field to key intellectual and social movements (such as Marxism, poststructuralism, critical race studies, queer studies, indigenous studies, and postcolonial and transnational studies) that have elicited feminist critiques and contributed to development in feminist thought. Issues include analysis of central theoretical works in field and survey of key methodologies, examination of key concepts and debates in gender studies, and identification of debates that have generated key analytics in feminist analysis and gender studies scholarship. May be repeated once for credit with instructor change. Letter grading.

**203. Epistemologies of Gender. (4)** Lecture/discussion, three hours. Focus on debates concerning methods of inquiry in gender and sexuality studies and exploration of intersections of feminist studies, masculinity studies, and queer studies. Debates and interventions concern interdisciplinary, intersectional feminist methods and changing boundaries of field over time. Exploration of critical tools to utilize and interrogate existing methodologies. Issues include examination of how feminisms have shaped and been shaped by processes of knowledge-production within and across disciplinary boundaries, cultures, and paradigms, and importance of intersectional, standpoint, and queer theory as critical research tools and as responses to issues of power, domination, oppression, and other loci of identities and difference. May be repeated once for credit with instructor change. Letter grading.

**204. Research Design and Professional Development. (4)** Seminar, three hours. Required of third-year gender studies graduate students. To be taken after all other coursework is complete; primarily geared toward proposal writing for dissertations and outside grants. Process of constructing dissertation proposals by providing structured process with incremental steps toward writing of dissertation proposal draft. Professional development for students as they prepare to enter academia or other professions. Help in

preparation for fall grant-writing season, exploration of job/interview process, development of materials to assist in teaching, and analysis of various job markets. May be repeated once for credit with instructor change. Letter grading.

**205. Subfields in Gender Studies. (4)** Seminar, three hours. Departmental topics course that offers in-depth aspects of field. Limits of investigation set by individual instructor. S/U or letter grading.

**210. Topics in Women and Public Policy. (4)** Lecture, four hours. Designed for graduate gender studies students. Introduction to background, decision-making processes, and current debates over public policy directly affecting women in one or more major spheres of public life (e.g., work, family, political system, healthcare, legal regulation). Topics may focus on public health, political science, medicine, workplace studies, and social welfare. May be repeated for credit with topic or instructor change. Letter grading.

**215. Topics in Study of Sexuality and Gender. (4)** Seminar, three to four hours. Designed for graduate students. Multidisciplinary studies on aspects of sexual orientation, gender identity, queer and transgender theory, interdisciplinary research on minority sexualities, and social construction/deconstruction of gender. May be repeated for credit with topic or instructor change. Letter grading.

**220. Cultural Studies in Gender, Race, and Sexuality. (4)** Seminar, three hours. Designed for graduate students. In-depth study of representations of gender and sexuality in literature and performance culture, with special attention to race. Topics include flow of artistic cultural production across national borders, theorizing femineer as diasporic or multicultural formation. Letter grading.

**CM232A. Chicana Feminism. (4)** (Same as Chicana/o and Central American Studies CM214.) Lecture, four hours. Enforced requisite: course 10 or Chicana/o and Central American Studies 10A. Examination of theories and practices of women who identify as Chicana feminist. Analysis of writings of Chicanas who do not identify as feminist but whose practices attend to gender inequities faced by Chicanas both within Chicana/Chicano community and dominant society. Attention to Anglo-European and Third World women. Concurrently scheduled with course CM132A. S/U or letter grading.

**M238. Sociology of Gender and Sexuality. (4)** (Same as Sociology M238.) Seminar, three hours. Designed for graduate students. Analysis of current American feminist theory relevant to sociologists. Exploration of critiques of second wave feminism by working class feminists and/or feminists of color, feminist scholars from other countries, and recent so-called antifeminist feminists. Discussion of directions for future feminist sociology. Letter grading.

**CM243XP. Healing, Ritual, and Transformation. (4)** (Formerly numbered CM243.) (Same as World Arts and Cultures CM240XP.) Lecture, four hours. Designed for graduate students. Examination of how various cultures think of health and wellness, not only individually but collectively. Exploration of structural inequalities within health care and medical sciences. Students are required to contribute weekly to service learning component, working with individuals and organizations in fields of health and wellness including healers, non-profits, and organizations working for social justice. May be concurrently scheduled with CM143XP. Letter grading.

**M252. Selected Topics in Sociology of Gender. (4)** (Same as Sociology M252.) Lecture, two hours; discussion, two hours. Designed for graduate students. Seminar on selected topics in sociology of gender. May be repeated for credit. Letter grading.

**M253A. Seminar: Current Problems in Comparative Education. (4)** (Same as Education M253A.) Seminar, four hours. Examination of some of most influential critical theorists, including Marx, Nietzsche, Freud, Marcuse, Foucault, Fanon, and de Beauvoir and their contributions to critique of contemporary education, society, and politics. S/U or letter grading.

**M255. Cross-Cultural Perspectives on Gender. (4)** (Same as Sociology M255.) Seminar, three hours. How does gender manifest itself in lives of different groups of women in U.S. and abroad? Are universal analytical categories or united feminist movements possible or is gender too different cross-culturally? S/U or letter grading.

**M259A-M259B. History of Women. (4-4)** (Same as History M259A-M259B.) Seminar, three hours. Course M259A is requisite to M259B. History of women's social and political issues seen in U.S. and comparative context. In Progress (M259A) and letter (M259B) grading.

**M261. Gender and Music in Cross-Cultural Perspective. (4)** (Same as Ethnomusicology M261.) Seminar, three hours. Designed to foster in-depth understanding of gender in study of music as culture. Topics range from ethnography of gender and sexuality, (de)codification of messages of resistance, and gender representation to gendered politics via musical production. S/U or letter grading.

**M263. Gender Systems. (4)** (Same as Anthropology M243.) Seminar, three hours. Current theoretical developments in understanding gender systems cross-culturally, with emphasis on relationship between systems of gender, economy, ideational systems, and social inequality. Selection of ethnographic cases from recent literature. S/U or letter grading.

**M266. Feminist Theory and Social Sciences Research. (4)** (Same as Education M266.) Lecture, four hours. Examination of how diverse feminist social theories of last quarter century have both challenged and strengthened conventional social sciences theories and their methodologies. Introduction especially to feminist standpoint theory, distinctive critical theory methodology now widely used in social sciences. Letter grading.

**CM270. Alternate Traditions: In Search of Female Voices in Contemporary Literature. (5)** (Same as Comparative Literature CM270.) Seminar, four hours. Designed for graduate students. Investigation of narrative texts by contemporary French, German, English, American, Spanish American, African, and Asian women writers from cross-cultural perspective. Common themes, problems, and techniques. Concurrently scheduled with course CM170. S/U or letter grading.

**CM278. Critical Media Literacy and Politics of Gender: Theory and Production. (4)** (Same as Education CM278.) Seminar, three hours. Corequisite: course CM278L. Use of range of pedagogical approaches to theory and practice of critical media literacy that necessarily involves understanding of new technologies and media forms. Study of both theory and production techniques to inform student analysis of media and critical media literacy projects. Concurrently scheduled with course CM178. Letter grading.

**CM278L. Critical Media Literacy and Politics of Gender: Laboratory. (2)** (Same as Education CM278L.) Laboratory, two hours. Corequisite: course CM278. Hands-on production experience as integral component of course CM278. Concurrently scheduled with course CM178L. Letter grading.

**285. Special Topics in Women's Studies. (4)** Lecture/discussion, four hours. Designed for graduate students. Selected topics or special problems. In-depth study of aspects of feminist theory or research methods or gender analysis within disciplinary studies in social sciences, humanities, health sciences, arts, or professional programs. May be repeated for credit with topic or instructor change. Letter grading.

296. Doctoral Roundtable. (2) Research group meeting, two hours. Preparation: satisfactory completion of PhD program first year. Requisites: at least two courses from 201, 202, 203, 210. Limited to program PhD students. Interactive seminar with focus on disciplinary and interdisciplinary issues, feminist scholarship, research presentation, and professional development. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Requisite or corequisite: course 495. Teaching apprenticeship under active guidance and

supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Feminist Pedagogy. (2)** Seminar, two hours. Preparation: appointment as teaching assistant in department. Introduction to feminist methods of teaching, with emphasis on reciprocity and dialogue and de-emphasis on hierarchy. Required of students while serving as teaching assistants (first time only) in undergraduate gender studies courses. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 12)** Tutorial, to be arranged. Requisites: courses 201, 202, 203. Directed individual research and study in area related to women's studies/gender studies, arranged individually by student with instructor. May be repeated for credit. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (2 to 12)** Tutorial, eight hours. Limited to graduate gender studies students. Reading and preparation for written MA comprehensive examination or PhD qualifying field examinations. May be repeated for a maximum of 12 units. S/U grading.

**598. Research for MA Thesis. (2 to 12)** Tutorial, to be arranged. Requisites: courses 201, 202, 203. Research for and writing of MA thesis under direction of thesis committee chair. May be repeated for credit. S/U grading.

**599. Research for PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Research for and writing of PhD dissertation under direction of dissertation committee chair. May be repeated for credit. S/U grading.

## GEOGRAPHY

*College of Letters and Science*

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Geography  
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Gregory S. Okin, PhD, Chair

## Faculty Roster

### Professors

John A. Agnew, PhD  
Stephen A. Bell, PhD  
Kyle C. Cavanaugh, PhD  
Jared M. Diamond, PhD  
C. Cindy Fan, PhD  
Thomas W. Gillespie, PhD  
Susanna B. Hecht, PhD  
Dennis P. Lettenmaier, PhD  
Glen M. MacDonald, PhD (*Professor of California and the American West*)  
Adam D. Moore, PhD  
Gregory S. Okin, PhD  
Marilyn N. Raphael, PhD  
Ananya Roy, PhD (*Meyer and Renee Luskin Professor of Inequality and Democracy*)  
Yongwei Sheng, PhD  
Michael E. Shin, PhD  
Michael C. Storper, PhD  
A. Park Williams, PhD  
Yongkang Xue, PhD

### Professors Emeriti

Charles F. Bennett, Jr., PhD  
Judith A. Carney, PhD  
William A.V. Clark, PhD

Michael R. Curry, PhD  
J. Nicholas Entriokin, PhD  
Helga M. Leitner, PhD  
David L. Rigby, PhD  
Melissa Savage, PhD  
Allen J. Scott, PhD  
Eric S. Sheppard, PhD (*Alexander von Humboldt Endowed Professor Emeritus of Geography*)  
Laurence C. Smith, PhD  
Werner H. Terjung, PhD  
Stanley W. Trimble, PhD  
Hartmut S. Walter, PhD

### Associate Professors

Lieba B. Faier, PhD  
Jamie M. Goodwin-White, PhD  
Juan C. Herrera, PhD  
Kelly A. Kay, PhD  
V. Kelly Turner, PhD

### Assistant Professor

Shaina S. Potts, PhD

## Overview

Geography is the study of the natural world and how humans have changed it. It examines the physical Earth and life on it, looking at the world's diverse cultures, economies, and the environmental problems they produce.

Geography addresses many issues about the contemporary world. Some are local, such as documenting the development of ethnic neighborhoods within Los Angeles. Others are regional, such as determining the best locations for nature reserves in California. Many are global, such as the study of greenhouse gases and how they affect climates, culture and resource issues in developing countries, and the impact of information technologies on people in different places.

The work of geographers often takes them out of the classroom into the field to collect information on topics that range from the settlement of new immigrants to the distribution of endangered species, the erosion of shorelines, and the location of high-tech businesses. On other occasions, geographers work in laboratories, using techniques such as computer analysis of satellite photographs to look for changes in river courses and computer modeling of shifts in global vegetation patterns and the distribution of human populations. Research is also conducted in libraries and archives, probing documentary sources on human interaction with the natural world and how that world is imagined.

## Career Prospects

Department of Geography graduates have a wide variety of career opportunities because of their combination of geographical/environmental perspectives and technical skills. UCLA geography students have gone on to become university scholars, school teachers, members of governmental and nongovernmental planning, development, and conservation agencies, business executives, lawyers, and specialists in geographical information analysis for government and private business. Because of its so-

phisticated focus on the relationship of the global to the local, geography is particularly useful for those who wish to pursue careers with an international focus.

## Undergraduate Majors

### Geography BA

The Geography major allows students to combine a broad background in the field with more specific interests and career goals. Students can select classes in several areas of geography such as urban, economic, cultural, environmental, physical, or biogeography. They should consult with the undergraduate adviser to plan a program suitable to their personal objectives.

### Learning Outcomes

The Geography major has the following learning outcomes:

- Comprehensive knowledge of the main strands of physical and human geography, including familiarity with major theoretical perspectives
- Command of various geographical methods and techniques such as remote sensing, cartography, and field methods
- Skills in collecting and analyzing geographical data
- Proficiency in written arguments drawing on appropriate sources and methods in the geographical literature

### Entry to the Major

#### Admission

To declare the major, students must have completed two geography courses with a grade-point average of 2.0 or better.

#### Transfer Students

Transfer applicants to the Geography major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one physical geography or biogeography course, one cultural geography or economic geography course, and one statistics course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Three courses (15 units) as follows: Geography 1 or 2, 3 or 4 or 6, and Statistics 12.

#### The Major

*Required:* Eleven upper-division geography courses (44 units minimum).

#### Honors Program

The departmental honors program is designed for Geography majors who are interested in completing a research project that culminates in an honors thesis.

To qualify for graduation with departmental honors, students must have a cumulative

grade-point average (GPA) of 3.5 or better in all upper-division geography courses and a 3.0 overall GPA. They must enroll in Geography 198A and 198B in two consecutive terms and earn grades of A– or better. They may elect to work with one or two faculty sponsors. Students are awarded highest honors, honors, or no honors based on an evaluation of the thesis by the faculty sponsor(s), and meeting GPA requirements. Contact the department advising office for more information.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade.

#### The Major

Each course must be taken for a letter grade.

All geography upper-division courses numbered 100 and higher may be applied toward the major, with a few exceptions. Contact the advising office for more information.

## Geography/Environmental Studies BA

The major in Geography/Environmental Studies develops and deepens students' understanding of environmental issues; it explores problem-solving approaches from an interactive people/nature viewpoint and involves analysis of social, physical, and biotic environmental systems. The major's uniqueness lies in its emphasis on its geographical perspective of human impacts on natural systems, as well as of implications of global change on local and regional human systems.

### Learning Outcomes

The Geography/Environmental Studies major has the following learning outcomes:

- Comprehensive knowledge of the main strands of physical and human geography, including familiarity with major theoretical perspectives
- Command of various geographical methods and techniques such as remote sensing, cartography, and field methods
- Familiarity with a range of environmental problems at different geographical scales, their analysis, modeling, and various policy responses to them
- Skills in collecting and analyzing geographical data
- Proficiency in written arguments drawing on appropriate sources and methods in the geographical literature

### Entry to the Major

#### Admission

To declare the major, students must have completed two geography courses with a grade-point average of 2.0 or better.

#### Transfer Students

Transfer applicants to the Geography/Environmental Studies major with 90 or more units must complete as many of the following intro-

ductory courses as possible prior to admission to UCLA: one physical geography or biogeography course, one cultural geography or economic geography course, one people and ecosystems course, and one statistics course.

Geography 7 must be taken at UCLA in order to fulfill the preparation for the major requirement, and, as the enforced requisite for courses 180, 181A, and 182A, Geography 7 must be taken prior to enrolling in these courses. Students taking this course as a requisite only may take it as P/NP grading.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Geography 1 or 2, 3 or 4 or 6, 5, 7, and Statistics 12.

#### The Major

*Required:* Eleven upper-division geography courses, each taken for a letter grade, that must be distributed as follows: (1) *environmental studies and natural systems core*—six courses from 101, M102, M103, 106, 107, 108, 109, M110, 116, 117, M118, 120, M125, M126, M127, 130, M131, 133, 135, 136, 138, 139B, 139C; (2) *human systems core*—two courses from 140, 141, M142, M144, 145, 148, 150, 151, M153, 158, 159, 160, 161, 162, 169A, 173A; (3) *procedures*—two courses from 180, 181A, 181B, 181C, 182A, 182B, 182C, 184, 185, M186; and (4) *regions*—one course from 145, 171A, 171B, 171C, 172A, 172C, 173A, 174A, 175A, 175B, or 176A.

#### Honors Program

The departmental honors program is designed for Geography/Environmental Studies majors who are interested in completing a research project that culminates in an honors thesis.

To qualify for graduation with departmental honors, students must have a cumulative grade-point average (GPA) of 3.5 or better in all upper-division geography courses and a 3.0 overall GPA. They must enroll in Geography 198A and 198B in two consecutive terms and earn grades of A– or better. They may elect to work with one or two faculty sponsors. Students are awarded highest honors, honors, or no honors based on an evaluation of the thesis by the faculty sponsor(s), and meeting GPA requirements. Contact the department advising office for more information.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade.

Students are strongly advised to complete all preparation for the major courses before beginning upper-division work in the major.

#### The Major

Each course must be taken for a letter grade.

Geography/Environmental Studies majors are advised to complete the required courses in the



human systems core before taking courses in the environmental studies and natural systems core.

## Undergraduate Minors

### Geography Minor

The Geography minor is designed for students who wish to deepen and/or broaden their major program of study with a distinctive yet flexible program of courses encompassing the relationship between environment and society. The minor allows students to develop a coherent strategy for understanding and explaining the manner in which people and the Earth interact. Students have the opportunity to explore the origins, development, morphology, and processes of landscapes inherited from nature, as well as those institutions and cultural, economic, political, and social patterns associated with the human development, occupancy, organization, perception, and use of these landscapes.

#### Admission

To enter the minor, students must have completed at least one geography course at UCLA with a grade of C or better, have an overall grade-point average of 2.0 or better, and file a petition in the Geography Department Advising Office, 1255 Bunche Hall.

#### The Minor

*Required Lower-Division Courses (10 units):* Two courses from Geography 1, 2, 3, 4, 6.

*Required Upper-Division Courses (20 units):* Any five upper-division geography courses, with a few exceptions. Contact the advising office for more information.

#### Policies

It is recommended that students take the lower-division courses before attempting upper-division courses.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least three of the five upper-division courses must be taken in residence at UCLA. Transfer credit for any of the above is subject to departmental approval.

Each minor course must be taken for a letter grade. Successful completion of the minor is indicated on the transcript and diploma.

### Geography/Environmental Studies Minor

The Geography/Environmental Studies minor is intended for students interested in environmental issues and emphasizes a systems approach to gaining a causal understanding of major environmental problems facing our society and the world at large. The uniqueness of the minor lies in its geographical perspective on the impact, at various geographical scales, of human activity on natural systems and on the implications of global environmental change on local, regional, and global human systems.

#### Admission

To enter the minor, students must have completed at least one geography course at UCLA with a grade of C or better, have an overall grade-point average of 2.0 or better, and file a petition in the Geography Department Advising Office, 1255 Bunche Hall.

#### The Minor

*Required Lower-Division Courses (10 units):* Geography 5 and one course from 1, 2, 3, 4, or 6.

*Required Upper-Division Courses (20 units):* Three courses from the environmental studies cluster specified within the major and two geography courses from outside the environmental studies cluster.

#### Policies

It is recommended that students take these courses before attempting upper-division courses.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least three of the five upper-division courses must be taken in residence at UCLA. Transfer credit for any of the above is subject to departmental approval.

Each minor course must be taken for a letter grade. Successful completion of the minor is indicated on the transcript and diploma.

### Geospatial Information Systems and Technologies Minor

The Geospatial Information Systems and Technologies minor is designed to provide students with a strong background in the use, application, and development of geospatial/environmental research techniques and methods.

#### Admission

To enter the minor, students must have completed Geography 7 with a grade of B or better, have an overall grade-point average of 2.0 or better, and file a petition in the Geography Department Advising Office, 1255 Bunche Hall. For majors in Geography or Geography/Environmental Studies, only two upper-division courses may overlap between the major and this minor.

#### The Minor

*Required Lower-Division Courses (10 units):* Geography 7, Statistics 12.

*Required Upper-Division Courses (24 units minimum):* Geography 180, 181A, 181B, 182A, and any two courses selected from 181C, 182B, 184, M186, and 199 (4 units with approval of the faculty adviser).

#### Policies

Each upper-division course must be completed with a grade of C or better.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least three of the five upper-division courses must be taken in residence at UCLA. With the exception of Statistics 12, transfer credit is not accepted toward this minor except on rare occasions.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Geography MA, CPhil, PhD

The department offers the PhD degree in Geography (an MA degree may be earned in the process of completing PhD requirements). Student research projects are conducted in collaboration with a faculty adviser and advisory committee. Graduate students work in most major areas of geography and on projects around the world. Graduate alumni of the department have teaching positions at many leading universities in the U.S. and abroad.

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Applied Geospatial Information Systems and Technologies

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Geography

### Lower-Division Courses

**1. Earth's Physical Environment. (5)** Lecture, three hours; laboratory, two hours. Study of Earth's physical environment, with particular reference to nature and distribution of landforms and climate and their significance to people. P/NP or letter grading.

**2. Biodiversity in Changing World. (5)** Lecture, three hours; discussion, two hours. Biogeographic exploration of plant and animal diversity and conservation issues on continents and islands around world. Study of physical, biotic, and human factors responsible for evolution, persistence, and extinction of species and ecological communities. Analysis of effects of human activity. P/NP or letter grading.



**3. Cultural Geography. (5)** Lecture, three hours; discussion, two hours. Introduction to cultural geography of modern world, with examination of key concepts of space, place, and landscape as these have shaped and been shaped by connections between societies and their natural environments. Examples from variety of landscapes and places since 1800 and especially from Los Angeles region. P/NP or letter grading.

**4. Globalization: Regional Development and World Economy. (5)** Lecture, three hours; discussion, two hours. Economic geography explores spatial distribution of all forms of human productive activity at number of geographical scales—local, regional, national, and global. Key theme is impact of increasingly powerful global economic forces on organization of production. P/NP or letter grading.

**5. People and Earth's Ecosystems. (5)** Lecture, three hours; laboratory, two hours. Exploration of ways in which human activity impacts natural environment and how modification of environment can eventually have significant consequences for human activity. Examination, using case studies, of real environmental problems that confront us today. P/NP or letter grading.

**6. World Regions: Concepts and Contemporary Issues. (5)** Lecture, three hours; discussion, two hours. Interdisciplinary and historical approach to modern peoples, their differences in wealth or poverty, and their local origins of food production. Brief introduction to physical geography and biogeography of each region. Discussion of each region's peoples, languages, foods, prehistories, and histories. Letter grading.

**7. Introduction to Geographic Information Systems. (5)** Lecture, three hours; laboratory, two hours. Designed for freshmen/sophomores. Introduction to fundamental principles and concepts necessary to carry out sound geographic analysis with geographic information systems (GIS). Reinforcement of key issues in GIS, such as geographic coordinate systems, map projections, spatial analysis, and visualization of spatial data. Laboratory exercises use database query, manipulation, and spatial analysis to address real-world problems. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**88A-88Z. Lower-Division Seminars: Geography. (4 each)** Discussion, three hours; reading period, one hour. Seminars designed to explore various themes and issues pertinent to environment and people. Seminar topics advertised in department during previous term. P/NP or letter grading.

**88GE. Seminar Sequence: Special Topics in Geography. (5)** Seminar, three hours. Enforced prerequisite: course 5. Designed for sophomores/juniors. Exploration of aspects of lecture topic through readings, images, and discussions. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

### Environmental Studies and Natural Systems

**101. Principles of Geomorphology. (4)** (Formerly numbered 100.) Lecture, three hours; reading period, one hour. Prerequisite: course 1. Study of processes that shape world's landforms, with emphasis on weathering, mass movement and fluvial erosion, transport, deposition; energy and material transfers; space and time considerations. P/NP or letter grading.

**M102. Soils and Environment. (4)** (Formerly numbered M127.) (Same as Ecology and Evolutionary Biology M127 and Environment M102.) Lecture, three hours; discussion, one hour; field trips. General treatment of soils and environmental implications: soil development, morphology, and worldwide distribution of soil orders; physical, chemical, hydrologic, and biological properties; water use, erosion, and pollution; management of soils as related to plant growth and distribution. P/NP or letter grading.

**M102L. Soils and Environment: Field. (1)** (Formerly numbered M127L.) (Same as Ecology and Evolutionary Biology M127L and Environment M102L.) Laboratory, one hour; field excursions. Corequisite: course M102. Investigations and demonstrations supporting material in course M102, including excavating, describing, and naming soils in field, soil forming processes, geomorphology, and soils. P/NP or letter grading.

**M103. Soil and Water Conservation. (4)** (Formerly numbered M107.) (Same as Environment M103.) Lecture, three hours; discussion, one hour. Enforced prerequisite: one course from course 1, 2, Environment 10, Life Sciences 7B. Designed for juniors/seniors. Systematic study of processes of and hazards posed by erosion, sedimentation, development, and pollution and techniques needed to conserve soil and maintain environmental quality. Scope includes agriculture, forestry, mining, and other rural uses of land. P/NP or letter grading.

**106. World Vegetation. (4)** (Formerly numbered 107.) Lecture, three hours; reading period, one hour. Limited to juniors/seniors. Characteristics, distribution, environmental and cultural relationships of world's principal vegetation patterns. P/NP or letter grading.

**107. Forest Ecosystems. (4)** (Formerly numbered 111.) Lecture, three hours; field trips. Prerequisite: course 2 or Life Sciences 7B. Designed for juniors/seniors. Evaluation of ecological principles as they apply to forests. Emphasis on constraints of physical environment, biotic interactions, succession, disturbances, and long-term environmental change. P/NP or letter grading.

**108. Analytical Animal Geography. (4)** (Formerly numbered 112.) Lecture, three hours. Prerequisites: courses 1, 2 or Life Sciences 7B, Statistics 12. Designed for juniors/seniors. Analysis of processes of expanding and contracting distribution areas. Focus on island biogeography and its implications for biodiversity trends in natural and anthropogenic environments. P/NP or letter grading.

**109. Biogeography of Plant and Animal Invasions. (4)** (Formerly numbered 116.) Lecture, three hours; reading period, one hour. Prerequisite: course 1 or 2 or 5. Examination of theories and examples of invasion of new environments by plants and animals introduced through natural processes or by human activity. P/NP or letter grading.

**M110. Ecosystem Ecology. (4)** (Formerly numbered M117.) (Same as Ecology and Evolutionary Biology M131.) Lecture, three hours; field trips. Prerequisite: course 1 or Life Sciences 7B. Designed for juniors/seniors. Development of principles of ecosystem ecology, with focus on understanding links between ecosystem structure and function. Emphasis on energy and water balances, nutrient cycling, plant-soil-microbe interactions, landscape heterogeneity, and human disturbance to ecosystems. P/NP or letter grading.

**116. Climatology. (4)** (Formerly numbered 104.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Examination of many relations between climate and world of man. Application of basic

energy budget concepts to microclimates of relevance to ecosystems of agriculture, animals, man, and urban places. P/NP or letter grading.

**117. Tropical Climatology. (4)** (Formerly numbered 102.) Lecture, three hours. In-depth exploration of development of tropical climate, with special reference to hurricanes, ENSO, and monsoons. Examination of human interaction with tropical climate processes and human-induced climate change in tropics. Use of climatological information to foster sound environmental management of climate-related resources in tropics. P/NP or letter grading.

**M118. Applied Climatology: Principles of Climate Impact on Natural Environment. (4)** (Formerly numbered M106.) (Same as Atmospheric and Oceanic Sciences M106.) Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Exploration of knowledge and tools to solve complex problems in contemporary applied climatology, including current practices, influence of climate on environment, and human influence on changing climates. P/NP or letter grading.

**119. Global Climatology and Climate Change. (4)** Lecture, three hours. Prerequisite: course 1. Survey of Earth's climate system and factors that cause globe's climate to change. Study of most important properties of climate, and how they vary and connect geographically and over time. Explanation of physical laws governing climate variations and interconnections to build basic-level understanding of natural climate phenomena and impacts of human industrial and agricultural activities. Explanation of source of Earth's heat energy, determinants of temperature near surface and throughout atmosphere, and how observed seasonal and spatial variations are created. Introduction to various motion systems in atmosphere and ocean and their governing physical laws. Exploration of nature and causes of past changes in global climate evident in paleorecords. Survey of current understanding of ongoing human-caused climate change event, and how climate models are used to develop projections of future climate change. P/NP or letter grading.

**120. Hydrology. (4)** (Formerly numbered 105.) Lecture, three hours. Prerequisites: course 116, Statistics 12. Role of water in geographic systems: hydrologic phenomena in relation to climate, landforms, soils, vegetation, and cultural processes and impacts on landscape. Field projects required. P/NP or letter grading.

**M125. Environmentalism: Past, Present, and Future. (4)** (Formerly numbered M115.) (Same as Environment M125 and Urban Planning M165.) Lecture, three hours; discussion, one hour. Exploration of history and origin of major environmental ideas, movements or countermovements they spawned, and new and changing nature of modern environmentalism. Introduction to early ideas of environment, how rise of modern sciences reshaped environmental thought, and how this was later transformed by 19th-century ideas and rise of American conservation movements. Review of politics of American environmental thought and contemporary environmental questions as they relate to broader set of questions about nature of development, sustainability, and equity in environmental debate. Exploration of issues in broad context, including global climate change, rise of pandemics, deforestation, and environmental justice impacts of war. Letter grading.

**M126. Environmental Change. (4)** (Formerly numbered M131.) (Same as Environment M126.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Examination of natural forces producing environmental changes over past two million years. How present landscape reflects past conditions. Effects of environmental change on people. Increasing importance of human activity in environmental modification. Focus on impact of natural and anthropogenic changes on forests. P/NP or letter grading.

**M127. Global Environment and Development: Problems and Issues. (4)** (Formerly numbered M128.) (Same as Urban Planning CM166.) Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Questions of population, resource use, Third World poverty, and environment. Analysis of global economic restructuring and its connections to

changing organization of production and resulting environmental impacts. Case studies from Africa, Latin America, Asia, and U.S. P/NP or letter grading.

**130. Food and Environment. (4)** (Formerly numbered 132.) Lecture, three hours. Designed for juniors/seniors. Thematic orientation to food systems and their role in environmental and cultural transformations. P/NP or letter grading.

**M131. Human Impact on Biophysical Environment. (4)** (Formerly numbered M109.) (Same as Environment M131.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Examination of history, mechanisms, and consequences of interactions between humans and environment. Exploration in depth of three thematic topics (deforestation, desertification, and greenhouse gas increase and ozone depletion) and four major subjects (soil, biodiversity, water, and landforms). P/NP or letter grading.

**133. Humid Tropics. (4)** (Formerly numbered 113.) Lecture, three hours. Requisite: course 2 or 5 or Life Sciences 7B. Designed for juniors/seniors. Examination of humid tropics, with emphasis on rainforests, their ecological principles, and forms of land use. Letter grading.

**135. Africa and African Diaspora in Americas. (4)** (Formerly numbered 114.) Lecture, three hours. Designed for juniors/seniors. Historical-geographical examination of Africa's role in Americas, with emphasis on environment, agriculture, food systems, and medicinal crops. P/NP or letter grading.

**136. Health and Global Environment. (4)** (Formerly numbered 125.) Lecture, three hours; reading period, one hour. Impact of environment and lifestyle on individual health examined from geographical perspective, with examples from both developed and developing countries. P/NP or letter grading.

**138. Wildlife Conservation in Eastern and Southern Africa. (4)** (Formerly numbered 122.) Lecture, three hours; reading period, one hour. Requisite: course 5. Designed for juniors/seniors. Analysis of tropical ecosystems of eastern Africa, including wildlife communities, vegetation, climate, and human impact. Discussion of national park systems and their natural and anthropogenic ecological dynamics. P/NP or letter grading.

**139B-139C. Problems in Geography. (4-4)** (Formerly numbered 159E-159C.) Seminar, three hours; reading period, one hour. Preparation: completion of three courses in one concentration. Limited to seniors. Seminar course in which students carry out intensive research projects developed from courses within one concentration. P/NP or letter grading. **139B.** Biogeography; **139C.** Culture and Environment in Modern World.

## Human Systems

**140. Social Geography. (4)** (Formerly numbered 147.) Lecture, three hours; discussion, one hour. Study of spatiality of social differences such as race, class, gender, age, sexuality, location. Critical explorations of identity, social categories, and spatial structures. Importance of space and place in social life. P/NP or letter grading.

**141. Cultural Geography of Modern World. (4)** (Formerly numbered 133.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors and graduate students. Historical and structural approach to cultural geography of modern world system, with particular emphasis on structure and functioning of its core, semi-periphery, and periphery. P/NP or letter grading.

**M142. (When) Do Leaders Make Differences? (5)** (Formerly numbered M153.) (Same as Anthropology M148 and Honors Collegium M152.) Lecture, two hours; discussion, two hours. Examination of leaders who did or did not succeed in effecting change, as background to understanding conditions under which leaders can make differences. Comparison of political leaders, business chief executive officers, sports coaches, and religious leaders. Letter grading.

**M144. Feminist Geography. (4)** (Formerly numbered M146.) (Same as Gender Studies M146.) Lecture, three hours; discussion, one hour. Critical engagement of gender as concept of geographic inquiry. Gender as spatial process, analysis of feminist geographic theory

and methods, landscapes of gender, challenges of representing gender. Spaces of femininity, masculinity, and sexuality. P/NP or letter grading.

**145. Slavery and Human Trafficking. (4)** Lecture, three hours; discussion, two hours (when scheduled); reading period, one hour. Offered either as 4-unit course without discussion sessions or 5-unit course with discussion sessions. Requisite: one course from 3, 4, Anthropology 3, Gender Studies 10, or Sociology 1. Limited to juniors/seniors. Exploration of how, why, and to what ends human trafficking has been conceptualized as global problem that warrants international response. Examination of recent activist, governmental, scholarly, and media responses, and reflection on what is and is not accomplished by them. Questions of human trafficking are implicitly geographical, requiring consideration of ways freedom is spatially defined and how movement across borders is encouraged and regulated. How questions of labor, migration, sexuality, rights, ethics, embodiment, representation, and governance pertain to human trafficking. What people mean when they speak of human trafficking as slavery. Meanings of slavery and freedom in world today using examples from U.S. and Europe, with focus on Philippines as case study for exploring both contemporary examples and historical forms of enslavement. P/NP or letter grading.

**146. Environmental Justice and Climate Change. (4)** Lecture, three hours. Designed for juniors/seniors. Examination of environmental quality and social justice. Premise that all people have right to live in clean environment and access resources to sustain health and livelihood. Investigation of under what conditions some people are denied this basic right and how some have fought back. Consideration of how certain groups of people experience effects of pollution or environmental hazards more than others, or lack basic resources; what social relations of production and power that contribute to these outcomes are; and how people have organized to demand environmental justice. P/NP or letter grading.

**147. Environmental Politics and Policy. (4)** Lecture, three hours. Requisite: course 5. Covers some of major recent debates within fields of environmental studies and environmental geography. Definition of key terms and exploration of history and evolution of environmental policymaking, with focus mainly on U.S. Focus on current hot topics in field including Anthropocene, clean energy transitions, and Green New Deal. Students delve deeper into topic of interest by working with group to put together final presentation. P/NP or letter grading.

**148. Political Geography. (4)** (Formerly numbered 140.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Spatiality of political activity, spatial constitution of political power, control over space as central component to political struggles. Studies at local, national, state, and global scales. P/NP or letter grading.

**149. Border Studies: Globalization, Nation, Identity. (4)** (Formerly numbered 134.) Lecture, three hours; discussion, one hour (when scheduled). Analysis of history, production, and functions of contemporary borders. Designed to broaden understanding of and challenge dominant narratives about many physical, political, and conceptual borders that shape our daily lives, from national boundaries to security fences to discoveries about race and gender. P/NP or letter grading.

**150. Economic Geography. (4)** (Formerly numbered 148.) Lecture, three hours; reading period, one hour. Requisite: course 4. Designed for juniors/seniors. Geographical aspects of economic production and growth. General theory of space-economy. Land-use processes. Location of industry. Regional development. P/NP or letter grading.

**151. Uneven Development Geographies: Prosperity and Impoverishment in Third World. (4)** (Formerly numbered 141.) Lecture, three hours; discussion, two hours (when scheduled). Geographical perspective on part of globe commonly called Third World (global South). How development has shaped livelihood possibilities and practices, by global processes stretching back centuries, and transformative possibilities of Third World agency. World societies seek to transform

Third World into their own image through theories and practices of colonialism, development, and globalization. Study of those theories and Third World alternatives to examine how they have shaped livelihood possibilities. Social differences between stagnant livelihood possibilities for Third World majority and minorities that prosper massively, as well as geographical differences (culturally, environmentally, and socially) across Third World. Examination of possibilities of Third World agency, ranging from interstate collaboration to village activism, asking whether such agency and alternative imaginaries can enable Third World residents to break with First World developmentalism. P/NP or letter grading.

**M153. Transportation Geography. (4)** (Formerly numbered M149.) (Same as Urban Planning M150.) Lecture, three hours. Requisite: course 3 or 4. Designed for juniors/seniors. Study of geographical aspects of transportation, with focus on characteristics and functions of various modes and on complexities of intra-urban transport. P/NP or letter grading.

**158. Population Geography. (4)** (Formerly numbered 142.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Study of social and behavioral perspectives influencing people in their patterns of demographic change, migration, and mobility, with special emphasis on spatial relationships and selected case studies. P/NP or letter grading.

**159. Population in Interacting World. (4)** (Formerly numbered 143.) Lecture, three hours. Provides multidisciplinary understanding of and appreciation for human population phenomena and problems in different parts of world and at different geographical scales—from local to global. Particular emphasis on understanding and critically reflecting on (1) contemporary population problems at global, national, and local scale, including both dramatic decline and persistence of high levels of fertility in parts of developing world, record low fertility and population aging in highly industrialized countries, increasing levels of international migration, refugee crises, massive rural to urban migrations, and creation of mega-cities in less developed world, (2) policies adopted to address these problems, such as family planning policies to reduce fertility, immigration policies, and so on, and (3) gender dimension of contemporary population problems and policies. P/NP or letter grading.

**160. Urban Geography. (4)** (Formerly numbered 150.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Analysis of development, functions, spatial patterns, and geographic problems of cities. P/NP or letter grading.

**161. Cities and Social Difference. (4)** (Formerly numbered 151.) Lecture, three hours; discussion, one hour. City landscapes embody best and worst of U.S. society: diversity and poverty, opportunity and violence. Study of urban spaces, social differences, inequality, and conflicts over uses and meanings of city space. Social urban geography. P/NP or letter grading.

**162. Ethnicity in American Cities. (4)** (Formerly numbered 144.) Lecture, three hours; reading period, two hours. Limited to juniors/seniors. Designed to encourage and facilitate critical thinking about geographical aspects of ethnicity in contemporary America. Use of comparative perspective to explain changing distribution, social, economic, and political behavior, and adjustment problems ethnic groups face in contemporary American cities. P/NP or letter grading.

**169A. Problems in Geography: Urban and Regional Development Studies. (4)** (Formerly numbered 159A.) Seminar, three hours; reading period, one hour. Preparation: completion of three courses in one concentration. Limited to seniors. Seminar course in which students carry out intensive research projects developed from courses within one concentration. P/NP or letter grading.

## Regions

**171A. North America. (4)** (Formerly numbered 180.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Delimitation and analysis of principal geographic regions of U.S. and Canada. P/NP or letter grading.

**171B. California. (4)** (Formerly numbered 184.) Lecture, three hours; reading period, one hour. Limited to juniors/seniors. Systematic and regional treatment of geography of California, including physical, cultural, and economic aspects and detailed studies of various regions. P/NP or letter grading.

**171C. Metropolitan Los Angeles. (4)** (Formerly numbered 156.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Study of origins, growth processes, internal structure and pattern, interactions, environmental and spatial problems of Los Angeles metropolitan area. P/NP or letter grading.

**172A. Spanish South America. (4)** (Formerly numbered 182A.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Study of geographic factors, physical and cultural, that are basic to understanding historical development of Spanish South America and contemporary economic and cultural geography of individual Spanish-speaking countries. P/NP or letter grading.

**172B. Central America. (4)** (Formerly numbered 181.) Seminar, two and one half hours. Located at center of American continent, Central America is central player in production of many important crops for world, and epicenter of massive migration waves. Exploration of Central America to understand way region has been defined by both European colonization and more modern interventions led by neocolonial relations with U.S. Consideration of role of racialization in producing specific racial/spatial dynamics in region. Fundamental exploration of how transnational migration has created expansive Central American diaspora that produces effects in isthmus and abroad. Letter grading.

**172C. Brazil. (4)** (Formerly numbered 182B.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Study of geographic factors, physical and cultural, that are basic to understanding historical development of Portuguese South America and contemporary economic and cultural geography of Brazil. P/NP or letter grading.

**173A. Cities of Europe. (4)** (Formerly numbered 152.) Lecture, three hours; reading period, one hour. Limited to juniors/seniors. Urbanization of Europe, growth of city systems and internal spatial structure, functions, and geographic problems of contemporary European cities. Particular attention to historical development and landscapes of capital cities such as Rome, Paris, and Berlin. P/NP or letter grading.

**174A. The Mediterranean World. (4)** (Formerly numbered 183.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Study of geographic factors, physical and cultural, that are basic to understanding historical development of Mediterranean region, with emphasis on 1500s to present. Introduction to great disputes in history and ecology centered on this region and character of two shores of Mediterranean basin. P/NP or letter grading.

**175A. Japan in World: Culture, Place, and Global Connections. (4)** (Formerly numbered 139.) Lecture, three hours; reading period, one hour. Focus on questions of culture and place in Japan. Exploration of ways that these questions—and Japan itself—have been shaped by historical and contemporary interactions involving people in both Japan and other parts of world. P/NP or letter grading.

**175B. Contemporary China. (4)** (Formerly numbered 186.) Lecture, three hours; reading period, one hour. Designed for juniors/seniors. Systematic geographic analysis of elements of landscape, resources, population, and socioeconomic characteristics of People's Republic of China. Dynamics that have led to China's major role in East Asian and international scene, with special attention to China-Japan and Sino-American relations and their geographic bases. P/NP or letter grading.

**176A. Southeast Asia. (4)** (Formerly numbered 185.) Lecture, three hours; reading period, one hour. Limited to juniors/seniors. Regional synthesis with varying emphasis on people of South or Southeast Asia in their physical, biotic, and cultural environment and its dynamic transformation. P/NP or letter grading.

## Procedures

**178. Conservation Geography Field and Professional Practices. (3)** Fieldwork, eight hours; research group meeting, three hours; one-, three-, and four-day field trips. Limited to senior Geography and Geography/Environmental Studies majors. Enrollment by application. Field focus on California vegetation and its response to current and future climate change. Students learn to collect field data, and to conduct field vegetation research. Students learn to work as professional research consultants in teams, develop consulting research proposals, consultant assessment reports, and present those reports orally and in written format to clients. Field trips to Mojave Desert, Great Basin Desert, pinyon pine woodland, pine-fire forest, alpine treeline, White Mountains, Sierra Nevada, and coastal pine and redwood forests. P/NP or letter grading.

**180. Cartography. (4)** (Formerly numbered 167.) Lecture, two hours; laboratory, four hours. Enforced requisite: course 7. Designed for juniors/seniors. Survey of field of cartography. Theory and construction of map projections, compilation procedures, principles of generalization, symbolization, terrain representation, lettering, drafting and scribing, and map reproduction methods. P/NP or letter grading.

**181A. Intermediate Geographic Information Systems. (4)** (Formerly numbered 168.) Lecture, two hours; laboratory, two hours. Enforced requisite: course 7. Extension of basic concepts presented in course 7. How geographic and spatial analyses inform, integrate, and extend scientific inquiry in physical, life, and social sciences. Discussion of range of decisions and critical judgments necessary to carry out sound spatial analyses. Development of technical proficiency within geographic information systems (GIS) environment. P/NP or letter grading.

**181B. Advanced Geographic Information Systems. (4)** (Formerly numbered 170.) Lecture, three hours; discussion, one hour. Enforced requisite: course 181A. Introduction to full geographic information systems (GIS) functionality, using ARC/INFO on UNIX workstations. Spatial manipulation, query, and computation of datasets carried out in project-oriented approach. P/NP or letter grading.

**181C. Geographic Information Systems Programming and Development. (4)** (Formerly numbered 173.) Lecture, two hours; laboratory, two hours. Enforced requisite: course 181A. Introduction to fundamental concepts and architecture of programming objects in widely used geographic information systems (GIS), and programming in GIS environment. Topics include GIS customization and development using variety of programming languages. Lectures followed by laboratory exercises. P/NP or letter grading.

**182A. Introduction to Remote Sensing. (4)** (Formerly numbered 169.) Lecture, two hours; laboratory, one hour. Enforced requisite: course 7. Introduction to fast-growing field of environmental monitoring from space. Application of Landsat, radar, Global Positioning System (GPS), and Earth Observing System satellites to land-use change, oceanography, meteorology, and environmental monitoring. Introduction to digital image-processing and imaging geographic information systems (GIS) software. P/NP or letter grading.

**182B. Remote Sensing: Digital Image Processing and Analysis. (4)** (Formerly numbered 172.) Lecture, three hours; laboratory, one hour. Enforced requisite: course 182A. Digital processing methods for manipulating and analyzing image data. Topics include statistical description, geometric and radiometric correction, classification, image enhancement and filtering, and change detection schemes. Reinforcement of procedures presented in lecture with laboratory exercises and student project. P/NP or letter grading.

**182C. Advanced Remote Sensing. (5)** (Formerly numbered 174.) Lecture, three hours; laboratory, two hours. Requisite: course 182A. Remote sensing in visible and infrared wavelength regions to understand basic concepts of radiation propagation and interaction with matter, how digital remote sensing images are acquired, and constraints on available data and data analysis. P/NP or letter grading.

**184. Environmental Modeling. (4)** (Formerly numbered 166.) Lecture, one hour; laboratory, two hours. Presentation of basic concepts related to computer modeling of biogeochemical cycles, geomorphic processes, and other phenomena relevant to changing Earth and its inhabitants. Laboratory exercises include building basic computer models and working with existing models. P/NP or letter grading.

**185. Field Methods in Physical Geography. (5)** (Formerly numbered 177.) Lecture, three hours; laboratory, three hours. Enforced requisite: course 182A. Examination of field procedures and concepts used in observation, measurement, analysis, and interpretation of physical phenomena pertinent to natural and built environment. Topics vary from year to year and may include soils, geomorphology, and field methods in geographic information science. May be repeated for credit with topic change. P/NP or letter grading.

**M186. Introduction to Spatial Statistics. (4)** (Formerly numbered M171.) (Same as Statistics M171.) Lecture, three hours; laboratory, one hour. Requisite: one course from Statistics 10, 12, 13. Introduction to methods of measurement and interpretation of geographic distributions and associations. P/NP or letter grading.

**187. Research and Writing in Human Geography. (4)** (Formerly numbered 161.) Seminar, three hours. Limited to seniors. Writing and research are two key aspects of what human geographers do. Students improve writing through proposing and conducting self-directed research project. Students should come with idea of topic of interest. Students learn process of doing geography research, including how to ask good research questions, how to search for relevant sources, how to construct argument, how to build literature review, and how to properly cite and incorporate academic sources. Culminating final paper on topic of choice. Weekly class workshops offer opportunity to exchange work with peers, giving useful feedback and opportunity to learn how to offer feedback and how to incorporate feedback into editing their work. Letter grading.

## Special Studies

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Geography.** (4) Seminar, three hours. Research seminars on selected topics in geography. Some sections may require prior coursework. Consult Schedule of Classes for topics and instructors. May be repeated for credit and may be applied as elective units toward departmental majors and minors. P/NP or letter grading.

**195. Community or Corporate Internships in Geography.** (4) Tutorial, four hours. Limited to juniors/seniors. Internship of eight to 10 hours per week in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP grading.

**198A-198B. Honors Research in Geography I, II.** (4-4) Tutorial, to be arranged. Preparation: 3.25 grade-point average overall, at least five upper-division geography courses with 3.5 grade-point average. Limited to juniors/seniors. Development and completion of honors thesis or comprehensive research project under direct supervision of one or two faculty members. May be repeated for maximum of 16 units. Individual contract required. Letter grading.

**199. Special Studies.** (2 to 8) Tutorial, to be arranged. Limited to juniors with B average in major or seniors. May be repeated for maximum of 16 units. P/NP or letter grading.

## Graduate Courses

### Core

**200A. History and Structure of Modern Geography.** (4) Lecture, three hours; reading period, one hour. Evolution of field of geography in 19th and 20th centuries, with emphasis on professionalization of geography and its emergence as modern academic discipline. S/U or letter grading.

**200B. Seminar: Geographical Inquiry.** (1) Seminar, one hour. Discussion of geographical research within context of philosophical debates concerning nature of scientific inquiry. S/U grading.

### Methods

**201. Research Design in Geography.** (4) Lecture, four hours. Introduction to logic of geographic inquiry. Topics include questions surrounding philosophy of science, research design issues, and range of methodologies available to and implemented by geographers to enable students to evaluate geographic literature critically. S/U or letter grading.

**202. Qualitative Methods and Methodology.** (4) Seminar, three hours; laboratory, two hours. Examination of definition and use of qualitative methodology and methods in social-cultural geographic research. Exploration of relationship between methodology and epistemology; review of range of research methods and techniques, including interviewing and focus groups, observation, action research, ethnography, and interpretation of material culture, and consideration of ethical and practical issues of conducting qualitative research. S/U or letter grading.

**204. Statistical Methods for Geographic Research.** (4) Lecture, three hours; laboratory, two hours. Requisite: course M171. Use of linear models, discriminant functions, and factor analysis to analyze problems in geography. S/U or letter grading.

**M205. Spatial Statistics.** (4) (Same as Statistics M222 and Urban Planning M215.) Lecture, three hours. Designed for graduate students. Survey of modern methods used in analysis of spatial data. Implementation of various techniques using real data sets from diverse fields, including neuroimaging, geography, seismology, demography, and environmental sciences. S/U or letter grading.

**M206. Introduction to Biophysical Modeling of Land Surface Processes and Land/Atmosphere Interactions.** (4) (Same as Atmospheric and Oceanic Sciences M206.) Lecture, two hours; laboratory, one hour; reading period, one hour. Designed for graduate students. Presentation of introductory knowledge for graduate students to understand nature, principles, and scope of biophysical modeling of land surface processes, including ideal canopy model, radiation,

heat and CO<sub>2</sub> fluxes transfer, and satellite data application. Laboratory sessions included. S/U or letter grading.

## Geospatial Information Systems

**208. Geographic Data Visualization and Analysis.** (4) Lecture, three hours; laboratory, two hours. Requisites: course 168, Statistics 12. Development of broad base of knowledge and set of skills that foster conduct of high-quality geographic data analysis. S/U or letter grading.

**211. Remote Sensing of Environment.** (4) Laboratory, three hours; independent study, two hours. Requisite: course 167. Study of aerial photographs and other remote sensing images as tools for geographical research. Particular attention to analysis of landscapes and interpretation of interrelationships of individual features in their physical and cultural complex. S/U or letter grading.

## Remote Sensing

**212. Physical, Mathematical, and Computational Basis of Remote Sensing.** (5) Lecture, three hours; laboratory, two hours. Intensive review and analysis of fundamental physics, mathematics, and computer science that underlie modern remote sensing and application of this knowledge to modern geographical problems. May be repeated for credit with topic change. S/U or letter grading.

**214. Advanced Projects in Geographic Information Systems (GIS)/Remote Sensing.** (4) Lecture, one hour; laboratory, three hours. Recommended requisite: course 169 or 170 or Earth, Planetary, and Space Sciences 150. Familiarity with GIS or image processing package expected. Individualized research projects conducted on UNIX platforms within structured course environment. All aspects of modest but original project, including data acquisition, ingestion, and analysis; interpretation of results and presentation in publication-style format. Letter grading.

**215. Advanced Field and Laboratory Methods in Biophysical Geography.** (4) Laboratory, five hours; fieldwork, five hours. Examination of advanced field and laboratory procedures used in contemporary biophysical geography research. May be repeated for credit with instructor change. S/U or letter grading.

**216. Advanced Field Analysis: Biogeography.** (8) Fieldwork, 10 hours. Observation, measurement, and analysis of biogeographic phenomena, including identification and evaluation of biotic populations and communities and their modifications resulting from impact of human activity. S/U or letter grading.

**218. Advanced Medical Geography.** (4) Lecture, two hours; discussion, one hour; reading period, one hour. Requisite: course 118. In-depth study of selected topics in medical geography and intense review of recent research. S/U or letter grading.

## Human Geography

**M224. International Migration.** (4) (Same as Sociology M236B.) Lecture, three hours. Further exploration of key current theoretical debates in study of international migration, with emphasis on exploring both theoretical debates of field and empirical data and case studies on which those debates hinge, to encourage students to undertake research in field. S/U or letter grading.

**M229A. Development Theory.** (4) (Same as Urban Planning M234A.) Lecture, three hours. Review of basic literature and schools of thought on development theory through analysis of impact of mercantilism, colonialism, capitalism, and socialism on various urban and rural social and economic structures in Third World. Presentation, through evaluation of theoretical writings and case studies, of complexity and diversity of developing countries. Emphasis on linkages between policy and rural and urban impacts. Gives students important background for courses M229B, M229C, and many other planning courses addressing Third World issues. Letter grading.

**M229B. Ecological Issues in Planning.** (4) (Same as Urban Planning M234B.) Lecture, three hours. Recommended preparation: Urban Planning M265. Science and politics of modern environmentalism and planning

in light of transformations inherent in global change, including how to address these questions in ways that go beyond green consumerism and bifurcation of wild, ecological, and human environments. American environmentalism has become dominant model for many conservation practices. Informed by Muirist model of idea of untrammeled nature with people-less set-asides for spiritual and scientific contemplation of nature; this approach used in environmental policy and as key idea in conservation and fragment biology. At opposite end is environmental planning devoted to infrastructure in hyper-human habitats (cities). Exploration of these competing models and many reasons to be skeptical of both in 21st century. Letter grading.

**M229C. Resource-Based Development.** (4) (Same as Urban Planning M234C.) Lecture, three hours. Recommended preparation: course M229A. Some major issues associated with development of specific natural resources. Topics include nature of particular resource (or region associated with it), its previous management, involvement of state, corporations, and local groups, and environmental and social impact of its development. Letter grading.

**M230A. Theories of Regional Economic Development I.** (4) (Same as Public Policy M240 and Urban Planning M236A.) Lecture, three hours; discussion, one hour. Introduction to theories of location of economic activity, trade, and other forms of contact between regions, process of regional growth and decline, reasons for different levels of economic development, relations between more and less developed regions. Letter grading.

**M230B. Globalization and Regional Development.** (4) (Same as Urban Planning M236B.) Lecture, three hours. Requisite: course M230A. Application of theories of regional economic development, location, and trade learned in course M230A to contemporary process known as globalization. Examination of nature and effects of globalization on development, employment, and social structure, along with implications for policy. Letter grading.

**235. Seminar: Social Geography.** (4) Seminar, three hours; reading period, one hour. Process of doing social/cultural geography entails conceptualizing, adapting, and reformulating social and critical theories of space, subject, and power. Examination of this process by considering theoretical themes that shape concepts of social space and social research. Theoretical discussions of recent research in social/cultural geography, particularly around topics of gender, race sexuality, subjects and spatiality resistance and agenda, and social difference and identity. S/U or letter grading.

**236. Seminar: Cultural Geography.** (4) Seminar, three hours; reading period, two hours. Discussions on particular topics in cultural geography. Content may vary from year to year. May be repeated for credit. S/U or letter grading.

**237. Seminar: Historical Geography.** (4) Seminar, three hours; reading period, two hours. Theory and practice of historical geography in North America and Europe. May be repeated for credit. S/U or letter grading.

**238. Seminar: Urban Geography.** (4) Seminar, three hours; reading period, two hours. Requisite: course 250. Related research projects growing out of course 250. May be repeated for credit. S/U or letter grading.

**240. Seminar: Geographic Thought.** (4) Seminar, three hours; reading period, two hours. Designed for graduate students. Discussion and study of topics significant to growth of modern philosophy of geography. S/U or letter grading.

## Human Geography Advanced

**245. Advanced Political Geography: Geopolitics.** (4) Lecture, two hours; discussion, one hour; reading period, one hour. Intensive study of theories and principles of geopolitics. Selected regions used as examples of differing techniques of study in geopolitics. S/U or letter grading.



**247. Advanced Topics in Cultural Geography. (4)** Seminar, two hours; discussion, one hour; reading period, one hour. Requisite: course 133. Lectures and discussions around specific aspects of development of cultural landscape in different geographic environments. S/U or letter grading.

**248. Advanced Topics in Economic Geography. (4)** Seminar, three hours; reading period, three hours. Designed for graduate students. Advanced study of economic theories and principles S/U or letter grading.

**249. Advanced Population Geography. (4)** Lecture, three hours; reading period, one hour. Requisite: course 142. Study of population dynamics and migration, spatial variation in population composition, and population resource problems, diffusion, and epidemiology. S/U or letter grading.

**250. Advanced Topics in Urban Geography. (4)** Seminar, two hours; discussion, one hour; reading period, one hour. General study of hierarchy of urban places, including diffusion within urban hierarchy and theories to account for location and size distribution of cities. S/U or letter grading.

## Physical Geography

**255. Physical Basis of Geography. (4)** Lecture, three hours; reading period, one hour. Critical evaluation of formative influences, paradigm shifts, and present challenges of physical geography, illustrated from historical developments and changing research frontiers in geomorphology, climatology, oceanography, hydrology, and soils. S/U or letter grading.

**256. Regional Climate and Terrestrial Surface Processes. (4)** Seminar, three hours. Designed for graduate students. Physical concepts and basic principles of land-surface/atmosphere interactions. Exploration of topics in terms of regional and global perspective and implications. Human activities cause changes in land cover, which in turn affect regional climate. Some regions, in particular, appear to be hot spots. Regions to be studied in detail. S/U or letter grading.

**257. Land Degradation. (4)** Seminar, three hours. Discussion on impact of human activities and institutions on terrestrial ecosystems and goods and services they provide. Topics vary from year to year. May be repeated for credit with topic change. S/U or letter grading.

**258. Human Security and Environmental Change. (4)** Seminar, three hours. Discussion of impact of environmental change on food, water, and physical security of human populations and societies' adaptations to environmental change. Topics vary from year to year. S/U or letter grading.

**260. Evolution, Ecology, Environmentalism, and Roots of Modern American Geography. (4)** Seminar, three hours; reading period, one hour. Discussion of how contemporaneous development of modern concepts of evolution, ecology, and environmentalism influenced, and were influenced by, development of modern geography as academic discipline. S/U or letter grading.

**M265. Environmentalisms: Climate Dimensions and Politics, Past, Present, Future. (4)** Lecture, three hours; discussion, one hour. Review of environmental theories and their practices in dynamic U.S. and international contexts. Issues of climate change, scenario planning, and matrix ecology and its implications in both urban and rural settings. Exploration of problematics of increasing internationalization (or international implications) of environmental practices as part of both green and black economies. What does integrated environmental planning look like in this century? Letter grading.

**M270A-M270B-M270C. Seminars: Climate Dynamics. (2 to 4 each)** (Same as Atmospheric and Oceanic Sciences M272A-M272B-M272C and Earth, Planetary, and Space Sciences M270A-M270B-M270C.) Seminar, two hours. Archaeological, geochemical, micropaleontological, and stratigraphic evidence for climate change throughout geological past. Rheology and dynamics of climatic subsystems: atmosphere and oceans, ice sheets and marine ice, lithosphere and mantle. Climate of other planets. Modeling, simu-

lation, and prediction of modern climate on monthly, seasonal, and interannual time scale. May be repeated for credit. S/U or letter grading.

**271. Seminar: Climatology. (4)** Seminar, three hours; reading period, one hour. Requisite: course 280. Selected topics. May be repeated for credit. S/U or letter grading.

**272. Seminar: Biogeography. (4)** Seminar, three hours; reading period, two hours. Requisite: course 281. Related research projects growing out of course 281. May be repeated for credit. S/U or letter grading.

**274. Seminar: Humid Tropics. (4)** Seminar, three hours; reading period, two hours. Designed for graduate students. Selected topics. Biophysical and cultural complexes of humid tropics, with emphasis on problems related to human settlement and livelihood. May be repeated for credit. S/U or letter grading.

**277. Coastal Geography. (4)** Seminar, three hours. Discussion of various coastal topics from biophysical, ecological, and human perspectives. Content may vary from year to year. May be repeated for credit. S/U or letter grading.

## Physical Geography Advanced

**280. Advanced Climatology. (4)** Lecture, three hours; laboratory, one hour. Preparation: first year of calculus and acquaintance with Fortran IV. Introduction to tools and concepts of environmental physics of relevance to natural and man-made landscapes. Such basic intellectual, mathematical, and computer programming tools are of special concern to physical geographers, ecologists, and architects. S/U or letter grading.

**281. Advanced Topics in Biogeography. (4)** Lecture, two hours; discussion, one hour; reading period, one hour. Requisites: courses 108, and 110 or 116. Intensive review and analysis of physical and cultural factors influencing plant distributions. S/U or letter grading.

**283. Advanced Topics in Geomorphology. (4)** Lecture, two hours; discussion, one hour; reading period, eight hours. Preparation: two courses from 101, 105, M107. Requisite: course 100. Analysis of geomorphic theories since scientific revolution, with emphasis on catastrophism, uniformitarianism, glacial theories, isostasy and eustasy, evolution and cyclicity, thermodynamics and mechanics, quantification, and current paradigms. View of each theme in its contemporary milieu. S/U or letter grading.

**286. Advanced Topics in Environmental Change. (4)** Seminar, three hours; reading period, two hours; fieldwork, three hours. Preparation: one course from 271, 280, 283, or one appropriate graduate course in atmospheric and oceanic sciences or Earth, planetary, and space sciences. Analysis of changing physical environment of Quaternary period. May be repeated for credit. S/U or letter grading.

## Regional Geography

**290. South America. (4)** Seminar, three hours; reading period, two hours. Introduction to main issues in geography of South America, with focus mainly on cultural/historical geographical perspectives on national period; themes and periods can be adapted to individual interests. S/U or letter grading.

**291. Geography of Contemporary China. (4)** Seminar, three hours; reading period, two hours. Designed for graduate students. May be repeated for credit. S/U or letter grading.

**M292. Seminar: Political Geography of Italy. (4)** (Same as Italian M241.) Seminar, three hours; reading period, two hours. Themes in political geography with particular emphasis on Italy. May be repeated for credit. S/U or letter grading.

**298. Advanced Regional Geography: Selected Regions. (4)** Lecture, three hours; discussion, one hour. Preparation: appropriate upper-division regional course. Lecture series devoted to one specific region at discretion of instructor. May be repeated for credit. S/U or letter grading.

## Required Colloquia

**299A. Research Group Seminars: Issues in Human Geography. (1)** Seminar, one hour. Bimonthly seminar to discuss current research in human geography. Topics vary from year to year. May be repeated for credit. S/U grading.

**299B. Research Group Seminars: Issues in Biophysical Geography. (1)** (Formerly numbered C299B.) Seminar, one hour. Bimonthly seminar to discuss current research in biophysical geography. Topics vary from year to year. May be repeated for credit. S/U grading.

**299C. Cultural Geography Methods Workshop. (1)** Seminar, two hours. Biweekly forum for presentation and discussion of new concepts, theories, and methods at juncture of geography, humanities, and environmental study. Principal focus on landscape, but scope of cultural study within geography also embraced. S/U grading.

**299D. Political Geography Working Group. (1)** Seminar, two hours. Limited to graduate students. Biweekly forum for analysis of current geopolitics, with emphasis on geographic impacts of recent global events. S/U grading.

**299E. Agriculture and Food Studies Colloquium. (1)** Seminar, one hour. Current scholarly debates surrounding topics on agriculture and food. Interdisciplinary discussion, with focus on research that explores confluence of production and consumption studies vis-à-vis agriculture and food. Group discussion of recently published work, works-in-progress by participants, and distinguished guest speakers. S/U grading.

## Special Studies

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

## Master of Applied Geospatial Information Systems and Technologies

**401. Applied Geospatial Data Science. (4)** Lecture, two hours; laboratory, two hours. Project-based exploration of essential methods and techniques in geographic information systems (GIS) and geospatial technology with focus on modeling, spatial analysis and geoprocessing, spatial data manipulation, geo-computation, and data visualization. Students apply advanced geospatial analysis and data visualization methods to addressing real-world problems and answering geographic research questions. Topics include research design, automation, and multi-step geospatial analysis methodology. Letter grading.

**410. Geospatial Databases and Data Management. (4)** Lecture, two hours; laboratory, two hours. Requisite: course 401 (may be taken concurrently). Design, development, and management of geospatial databases, including databases used in shared and scalable enterprise geographic information systems (GIS) platforms. Introduction of relational database theory and design, database performance, and user access considerations. Students learn to develop and work with enterprise database systems that support large datasets and simultaneous access by many users. Introduction of enterprise GIS systems and techniques facilitating concurrent editing of shared spatial databases. Letter grading.

**411. Geospatial Imagery Analysis. (4)** Lecture, two hours; laboratory, two hours. Requisite: course 401. Introduction to field of remote sensing and image analysis, primarily involving environmental monitoring and Earth observation from space. Core concepts in remote sensing, processes by which images are captured by sensors mounted on remote platforms including satellites and airplanes, and key characteristics of captured imagery. Project-based instruction in techniques for processing, analyzing, and visualizing

remotely sensed imagery and raster data with proprietary, open-source, and cloud-based remote sensing and image analysis platforms. Letter grading.

**412. Programming for Geospatial Data Science I. (4)** Lecture, two hours; laboratory, two hours. Requisite: course 401. Conceptual and practical instruction in use of scripting, automation, and computer programming within geospatial sciences. Students use Python programming language to develop geospatial processing scripts and applications, making use of popular geospatial data manipulation libraries. Introduction of computer programming concepts and theory in practical context. Letter grading.

**413. Applied Geospatial Statistics. (4)** Lecture, two hours; laboratory, two hours. Requisite: course 401. Concepts and techniques fundamental to spatial statistics and analysis and visualization of data with geographic dimension. Introduction to statistical computing and tabular data processing and analysis techniques. Students learn to apply common spatial analysis methods in practical context. Emphasis on essential concepts in spatial statistics, including spatial relationships, spatial autocorrelation analysis, cluster analysis, spatial regression analysis, point-pattern analysis, and space-time modeling. Letter grading.

**414. Programming for Geospatial Data Science II. (4)** Lecture, two hours; laboratory, two hours. Requisite: course 401. Introduction to technologies and techniques that support growing field of interactive Web-based geographic information systems and mapping. Study of theory and concepts underlying this rapidly growing field. Applied training is provided in Web map design, development, and programming. Students learn to develop sophisticated interactive Web maps and applications both by using existing Web mapping platforms and also by coding custom Web maps integrating HTML, CSS, JavaScript programming language, and Web mapping code libraries. Letter grading.

**415. Geospatial Data Science Futures. (4)** Seminar, two hours; laboratory, two hours. Requisite: course 401. Applied exploration of emerging technologies and methods in geospatial technology with focus on learning state-of-art geospatial data analysis and management techniques. Topics of interest introduced in seminar format by subject matter experts and faculty. Through discussions and biweekly applied project work, geospatial research methods are situated in their broader context. Application of innovative geospatial research methods to better understanding spatial dimension of data. Letter grading.

**498. Capstone I: Geospatial Research Methods. (4)** Seminar, two hours; laboratory, two hours. Requisite: course 401. Instruction in core geospatial project management and research design techniques, as well as geospatial technology research methods. Structured environment for students to propose and begin capstone project. Includes study of appropriate and ethical application of geospatial methods and technology. Projects proposed should be original analyses of geospatial data that solve pressing problem, optionally developed in conjunction with university or industry partner. Letter grading.

**499. Capstone II: Geospatial Capstone Project. (4)** Laboratory, four hours. Requisites: courses 401, 498. Completion of required capstone research project. Students meet weekly with faculty adviser to discuss progress, learn technical writing skills, and chart goals for timely completion of project. Successful completion and approval of capstone project is required for satisfactory completion of course. May be repeated for credit. Letter grading required to meet MAGIST program requirements. S/U or letter grading.

## Special Studies

**495. Teaching College Geography. (2)** Seminar, one hour; laboratory, three hours. Classroom practice in teaching, with individual and group instruction on related educational methods, materials, and evaluation. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. Independent study. May be repeated for credit. S/U grading.

**598. Research for and Preparation of MA Thesis. (2 to 8)** Tutorial, to be arranged. Independent study. May be repeated for credit. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Independent study. May be repeated for credit. S/U grading.

# GERONTOLOGY

## Interdisciplinary Minor

*Meyer and Renee Luskin School of Public Affairs*

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## Gerontology

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## E-mail contact

Lené F. Levy-Storms, MPH, PhD, *Chair*

## Faculty Committee

Laura S. Abrams, PhD (*Social Welfare*)

Michael R. Irwin, MD (*Psychiatry and Biobehavioral Sciences, Psychology*)

Lené F. Levy-Storms, MPH, PhD (*Social Welfare*)

Theodore F. Robles, PhD (*Psychology*)

Teresa E. Seeman, MD (*Epidemiology, Medicine—Geriatrics*)

## Overview

The worldwide expansion of the older adult population ensures that issues regarding aging will dominate our environmental, economic, social, political, psychological, and medical concerns and endeavors well into the twenty-first century. The undergraduate minor in Gerontology provides students with a foundation understanding of the current state of science related to human aging, enables students to assess longevity's potential contribution and challenge to contemporary society, and provides students with an appreciation of opportunities to contribute, personally and professionally, to a diverse aging society.

## Undergraduate Minor

### Gerontology Minor

#### Admission

To enter the Gerontology minor, students must have an overall grade-point average of 2.0 or better and a grade of B or better in Gerontology M108.

#### The Minor

*Required Upper-Division Courses (28 to 32 units):* (1) Gerontology M108, (2) four courses from Gerontology M104C, M104D, M119O, M119X, M142XP, M150, M165, Psychology 124C, 150, (3) two terms of Gerontology 195 or 199.

## Policies

Students who have completed Clusters 80A with a grade of B or better, and have an overall grade-point average of 2.0 or better, do not need to take Gerontology M108. Successful completion of this cluster sequence (Clusters 80A, 80BX, 80CW) counts for M108 and one elective course.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Gerontology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M104C. Diversity in Aging: Roles of Gender and Ethnicity. (4)** (Same as Chicana/o and Central American Studies M106B, Gender Studies M104C, Public Affairs M131, and Social Welfare M104C.) Lecture, four hours. Exploration of complexity of variables related to diversity of aging population and variability in aging process. Examination of gender and ethnicity within context of both physical and social aging, in multidisciplinary perspective utilizing faculty from variety of fields to address issues of diversity. Letter grading.

**M104D. Public Policy and Aging. (4)** (Same as Social Welfare M104D.) Lecture, four hours. Examination of theoretical models and concepts of policy process, with application to aging policy. Analysis of decision-making processes that affect aging policy. Description of history of contemporary aging policy. Exploration of current policy issues affecting elderly. P/NP or letter grading.

**M104E. Social Aspects of Aging. (4)** (Same as Social Welfare M104E.) Lecture, four hours. Topics include theories of aging, economic factors, changing roles, social relationships, and special populations. Weekly seminars organized around key aspect of social gerontology. P/NP or letter grading.

**M108. Biomedical, Social, and Policy Frontiers in Human Aging. (5)** (Same as Public Affairs M130 and Social Welfare M108.) Lecture, four hours. Limited to juniors/seniors. Course of human aging charted in ways that are based on variety of recent research frontiers. Use of conceptual frameworks to increase relevance of aging to students' lives and enhance their critical thinking—biopsychosocial approach that is based on recognition that aging is inherently interdisciplinary phenomenon, and life course perspective that is distinguished by analytical framework it provides for understanding interplay between human lives and changing social structures, and allows students to understand how events, successes, and losses at one stage of life can have important effects later in life. Focus on individuals as they age within one particular sociohistorical context. Letter grading.

**M119O. Psychology of Aging. (4)** (Same as Psychology M119O.) Lecture, four hours. Prerequisite: Psychology 115. Designed for juniors/seniors. Aging refers to developmental changes occurring at end stages of life. Some alterations that occur represent improvement, others are detrimental. Examination of impact of aging process on mental phenomena and exploration of ways in which positive changes can be maximally utilized and impact of detrimental alterations minimized. P/NP or letter grading.

**M119X. Biology and Behavioral Neuroscience of Aging. (4)** (Same as Psychology M119X.) Lecture, three hours. Designed for juniors/seniors. Biologic mechanisms of aging process and its terminal phase, death, have been increasingly studied in recent years. Establishment of what is known experimentally about biology and behavioral neuroscience of aging and evaluation of theories developed to account for this knowledge. P/NP or letter grading.

**120. Sex and Aging. (4)** Lecture, three hours. Sexuality in aging from psychological, psychobiological, physical, and psychosocial perspectives, with emphasis on differences between females and males concerning physical and social changes that occur with aging and how this impacts on emotional well-being and human sexual response. P/NP or letter grading.

**M142XP. Intergenerational Communication across Lifespan. (4)** (Formerly numbered M142SL.) (Same as Public Affairs M129XP and Social Welfare M142XP.) Lecture, three hours; fieldwork, one hour. Limited to juniors/seniors. What do you say to your parents in conversation? How do you talk to your grandparents? Does your family talk well to one another as group? How do you communicate well with boss who is 30 years older than you? Individuals of all ages interact with one another, and their interactions have significance throughout their lives. Introduction to psychological, interpersonal, and societal issues related to intergenerational communication across lifespan. Letter grading.

**M150. Sociology of Aging. (4)** (Same as Sociology M150.) Lecture, three hours; discussion, one hour. Study of sociological processes shaping definition, experience, and response to aging in contemporary society. Topics include race, class, and gender in aging over life course; interpersonal relations and social worlds of aged; caregiving relations and institutions; professions concerned with aged and aging. Letter grading.

**M165. Disability Policy and Services in Contemporary America. (4)** (Same as Disability Studies M130 and Social Welfare M165.) Lecture, three hours. Limited to juniors/seniors. Growing numbers of people of all ages with disabilities are leading active and productive lives in American communities. Many others are struggling to lead such lives. Who are people with disabilities in contemporary America? How has U.S. responded over time to various needs and aspirations of people with disabilities, young and old? What demands have been made over time by disability advocates? How has government addressed demands of advocates for various disability populations? What do we know about extent to which public policies and programs are responsive to people in need? How do demographics, economics, and politics continue to influence evolving public policy responses? P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Community or Corporate Internships in Gerontology. (2 to 4)** Tutorial, six to 12 hours. Prerequisite: course M108, or Clusters 80A and 80BX. Limited to juniors/seniors. Students propose their own ideas for internship project and petition for its approval. Approval of internship is contingent on position having relevance in field of gerontology. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**199. Directed Research or Senior Project in Gerontology. (4)** Tutorial, to be arranged. Prerequisites: course M108, or GE Clusters 80A and 80B. Limited to juniors/seniors. Supervised individual research under guidance of gerontology faculty mentor. Submission of weekly writing assignments and research paper at end of term. Eight units of 199 (or 195CE) required for successful completion of minor. Individual contract required. Information and contracts may be obtained from Gerontology Advising Office. Letter grading.

## GLOBAL HEALTH

*Interdisciplinary Minor  
College of Letters and Science*

10256 Bunche Hall  
Box 951487  
Los Angeles, CA 90095-1487

### Global Health

310-206-6571

### Minor e-mail

Ippolytos A. Kalofonos, MD, PhD, MPH,  
Chair

## Faculty Committee

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Dance*)  
Ippolytos A. Kalofonos, MD, PhD, MPH  
(*Anthropology, Psychiatry and Biobehavioral  
Sciences*)  
Michael F. Lofchie, PhD (*Political Science*)  
Anne W. Rimoin, PhD (*Epidemiology*)

## Overview

The Global Health minor allows students to develop an interdisciplinary understanding of health issues in a global context. Students take courses that provide opportunity to become familiar with approaches to global health from the perspective of the social sciences, arts, and humanities, as well as the physical and biological sciences. The minor is appropriate for students from all majors.

# Undergraduate Minor Global Health Minor

## Admission

To be admitted to the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

After satisfying these requirements, students may declare the minor in consultation with the academic counselor.

## The Minor

*Required Lower-Division Courses (10 units):* Two courses from Civil Engineering 58XP, Clusters 80A, 80BX, 80CW, Community Health Sciences 91, Global Studies 1, History 3D, Honors Collegium 1, 14, 26, International and Area Studies 1, Molecular, Cell, and Developmental Biology 60, Nursing 50, Statistics 13, World Arts and Cultures 2, 33.

*Required Upper-Division Courses (20 to 25 units):* Global Health 100 and four courses from the following theme areas, with a maximum of two courses from any single area:

Art: World Arts and Cultures 144, C158, C159, 160.

*Community Health:* Community Health Sciences 100, 161, CM170, 187A, 187B, 195, Health Policy and Management 140, Psychiatry and Biobehavioral Sciences 175, Psychology 150.

*Environmental Health:* Environment 166, M167, Environmental Health Sciences 100, C185A, C185B.

*Genetics:* Honors Collegium 141, Society and Genetics 162, 163.

*Globalization and Development:* Community Health Sciences 132, International Development Studies 110, Nursing C155.

*Health Humanities and Communication:* English Composition 131C, History 179A, 179B.

*Policy:* Community Engagement and Social Change M175SL, Economics 130, 131, Gerontology M108, Health Policy and Management 100, Honors Collegium 105, Sociology M164.

*Society and Cultural Health:* American Indian Studies C121, CM168, American Sign Language M115, Asian American Studies M129, 140XP, Chicana/o and Central American Studies CM106, Disability Studies 101W, M121, Gender Studies 104, 105, 125, CM143XP, Honors Collegium 124, Psychology 129C, Sociology 138, 143, 170.

*Statistics and Modeling:* Biomathematics 170A, Biostatistics 100A, 100B, Sociology 116, Statistics 130.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall



grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Global Health

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Global Health and Development. (4)** Lecture, three hours; discussion, one hour (when scheduled). Interdisciplinary examination of key issues in area of global health, with focus on developing world. Provides basis for understanding current debates that frame global health problems and actions in and across nations with strikingly different political-economic contexts. Discussion of how local and international communities attempt to address challenges of global health problems and how interventions play out through range of policy and programmatic approaches. P/NP or letter grading.

**110A-110B. Field Studies in Global Health. (4-4)** Seminar, three hours. Enforced corequisite for course 110A: course 110B. Exploration of issues regarding global health in important locations around world. Hands-on experiential courses offered for students participating in UCLA Travel Study Program. Field trips included to gain first-hand experience. May be repeated with topic and/or location change. Offered in summer only. P/NP or letter grading.

**140. Equity-Focused Program Evaluation in Global Health: Theory and Practice. (4)** Lecture, three hours; discussion, one hour. Requisite: course 100. Interdisciplinary approach to provide solid understanding of equity-focused evaluation theories and practices. Discussions are guided by principles of equity and human rights-based approach to global health. Focus on evaluation of policies, programs, and equitable delivery of health services for most vulnerable and marginalized populations. Case studies to learn about equity-focused research and evaluation concepts and methodology. Case study topics include impact of COVID-19 pandemic and response to it in relation to our students. For instance, COVID-19 has had greater impact on African American, Latin American, and indigenous communities than on white populations, and it has unmasked disparities in access to health care, education, and technology, which often reflect in student performance. Students are encouraged to examine relevance of class discussions in their own

communities and in terms of their aspirations for creating better, more equitable, and healthier world. P/NP or letter grading.

**150. Migration and Health. (4)** Lecture, three hours; discussion, one hour. Introduction to history, current status, and future of migration and health using social determinants of health model to foster multidisciplinary analysis of status of migrant health around world. Exploration of social determinants of health affecting migrating populations, including gender, race, ethnicity, socioeconomic status, poverty, religion, politics, governance, and environment. Letter grading.

**160. Selected Topics in Global Health. (4)** Lecture, three hours; discussion, one hour (when scheduled). Examination of one or more topics related to global health. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Senior Research Seminar: Global Health. (4)** Seminar, three hours. Requisite: course 100. Designed for Global Health minors. Research seminar on selected topics in Global Health. Reading, discussion, and development of culminating project. Consult Schedule of Classes for topic to be offered in specific term. May be repeated for credit with topic change. Letter grading.

**199. Directed Research in Global Health. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper required. May be applied toward requirements via petition. May be repeated for credit. Individual contract required. Letter grading.

## GLOBAL JAZZ STUDIES

*Interdepartmental Program  
Herb Alpert School of Music*

2520 Schoenberg Music Building  
Box 951657  
Los Angeles, CA 90095-1657

**Global Jazz Studies**  
310-825-8381

Steven J. Loza, PhD, *Chair*

### Faculty Committee

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Steven J. Loza, PhD (*Ethnomusicology*)  
Arturo O'Farrill, MM (*Music*)  
Shana L. Redmond, PhD (*Musicology*)

## Faculty Roster

### Professors

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Robin D.G. Kelley, PhD (*Gary B. Nash  
Endowed Professor of U.S. History*)  
Arturo O'Farrill, MM

### Professors Emeriti

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Duane C. Benjamin  
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### Adjunct Professors

Mark F. Turner, BM  
Michele A. Weir, MA

### Adjunct Associate Professors

Alison S. Deane, MM  
Roberto Miranda, MM  
Ruth Price

## Overview

The Bachelor of Arts (BA) degree in Global Jazz Studies is a capstone major designed to provide students with an interdisciplinary education that draws from various areas of the UCLA Herb Alpert School of Music, as well as from the arts and social sciences. The curriculum is designed around three major areas: (1) performance courses designed to advanced students' skills individually and playing in small combos and larger ensembles; (2) musicianship and music theory courses in which students master improvisation, basics of music theory, arranging, and composition; and (3) broad understanding of the historical and societal context of the development and advancement of jazz in the United States and globally.

## Undergraduate Major

### Global Jazz Studies BA

#### Capstone Major

The Global Jazz Studies major is a designated capstone major. The capstone project, usually done in the senior year, is tailored to each student and includes a seminar class (course 186A) and a capstone presentation such as a recital, lecture-demonstration, or lecture-recital (186B). The capstone experience provides an appropriate vehicle for the faculty to assess the students' accomplishments during their tenure in the program.

## Learning Outcomes

The Global Jazz Studies major has the following learning outcomes:

- Advanced-level performance of multiple jazz styles across historical periods and contemporary jazz performance practices
- Demonstrated proficiency in styles representative of Africa, the African diaspora, and at least one other world musical culture
- Demonstrated advanced skill and understanding in improvisation, musical structure and instrumentation, composition, arranging, timbre, and expression
- Demonstrated basic proficiency in areas of programming, recording, and/or post-production
- Demonstrated interdisciplinary knowledge of global jazz as text and method
- Interrogation of the concerns of jazz as a comprehensive practice, including its capacity to transform the musical, political, and socioeconomic world it engages

## Entry to the Major

### Admission

Applicants are reviewed individually, based on a questionnaire, grade-point average, test scores, a personal statement of purpose, and an on-campus audition. Applicants who are unable to travel to UCLA have the option of submitting a video audition in place of the on-campus audition.

### Transfer Students

Transfer applicants to the Global Jazz Studies major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one to two years of jazz studio instruction (equivalent to Global Jazz Studies 71A through 71I) and one year of musicianship (equivalent to Ethnomusicology M6A, M6B, M6C).

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Ethnomusicology 20B or 20C (5 units), 4 units from 91E and/or 91P, 4 units from 68A through 68O and/or 91A through 91Z (except 91E and 91P); Global Jazz Studies M110A, M110B (10 units), 12 units from 71A through 71I (students must enroll in a studio each quarter); and Music M6A, M6B, M6C (6 units).

### The Major

*Required:* 72 units from the areas below.

*Performance (24 units)*—12 units of studio coursework from Global Jazz Studies 171A through 171I, 4 units of small jazz combo (Global Jazz Studies 175), 8 units of large jazz ensemble (Global Jazz Studies 176A through 176G). Students must enroll in a studio class and at least one combo or ensemble each quarter.

*Musicianship and theory (24 units)*—Global Jazz Studies 122A, 122B, 122C, 127A, 127B, 127C, 129A, 129B, 129C.

*Scholarly foundations (20 units)*—Global Jazz Studies 101, 125; one course (at least 4 units) selected from each of the following three subject areas: African American Studies 108, M150D, M158C, Global Jazz Studies M109, M119, M130, M131, 165, 188, 199, Music Industry 102, 104A, 107A, 115.

*Capstone seminar and project (4 units)*—Global Jazz Studies 186A, 186B.

## Policies

### Preparation for the Major

All entering first years are required to take the Music Theory Assessment Examination either during New Student Sessions or during zero week of fall quarter. The examination score is used to determine eligibility and placement in first-year music core courses (Music 3, M6A, M6B, M6C). Examination results may require enrollment in Music 3 as a requisite to course M6A. Entering transfer students with fewer than 15 units of prior music theory must take the Music Theory Assessment Examination.

Each course must be completed with a grade of C or better.

### The Major

Each course must be taken for a letter grade and be completed with a grade of C or better. Students must have an overall grade-point average of 2.0 or better. No more than eight units from upper-division tutorials (195-199) may be applied toward the degree.

## Global Jazz Studies

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M25. Global Pop. (5)** (Same as Ethnomusicology M25.) Lecture, four hours; discussion, one hour. Development of world music or world beat, including its meaning and importance to contemporary culture as well as its history and impact. P/NP or letter grading.

**M35. Blues, Society, and American Culture. (5)** (Same as Ethnomusicology M35.) Lecture, four hours; discussion, one hour. Sociocultural history and survey of blues music tradition from its roots in West Africa to its emergence in African American oral culture, with emphasis on philosophical underpinnings and social and political impact of blues and its influence on development of country, jazz, gospel, rhythm and blues, rock, hip-hop music, and other mediums. P/NP or letter grading.

**M50A-M50B. Jazz in American Culture. (5-5)** (Same as Ethnomusicology M50A-M50B.) Lecture, four hours; discussion, one hour. Course M50A is not requisite to M50B. Survey of development of jazz in American culture. Discussion of different compositional/performance techniques and approaches that distinguish different sub-styles of jazz from one another, as well as key historical figures that shaped development of jazz from its early years through modern jazz. Important historical social issues (segregation, Depression, World War II, Civil Rights Movement) that intersect with history of U.S. and jazz music. P/NP or letter grading. **M50A.** Late 19th Century through 1940s; **M50B.** 1940s to Present.

**66. Global Jazz Studies Composition Studio. (2)** Studio, one hour per week to be arranged with instructor; outside study, five hours. Limited to Global Jazz Studies majors. One-on-one composition lessons with assignments and compositions tailored to student progress and level of achievement. Lessons address various, cross-cultural concepts in harmonic, melodic, and rhythmic construction, orchestration, analyses of global jazz masterworks, form, texture, style, notation, ornamentation, improvisation, and performance feasibility. May be repeated for credit. P/NP or letter grading.

**71A-71I. Instruction in Jazz Performance. (2 each)** Studio, one hour of individual instruction. Limited to Global Jazz Studies majors. Knowledge of jazz repertoire, concepts, and techniques gained through private lessons on specific instruments and voice. Students meet weekly with instructor to demonstrate their performance skills and receive assessment of their progress in learning material. May be repeated for maximum of 12 units. Letter grading. **71A.** Guitar; **71B.** Percussion; **71C.** Piano; **71D.** Saxophone; **71E.** String Bass; **71F.** Trombone; **71G.** Trumpet; **71I.** Voice.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Cross-Cultural Perspectives in Jazz. (4)** Lecture, four hours. Exploration of assimilation and retention of jazz from U.S. in various countries, with particular emphasis on cultural and social features that form basis for new jazz-ethnic music blends. Letter grading.

**M103. Creating Musical Community. (4)** (Same as Ethnomusicology M103, Music M103, and Musicology M103.) Seminar, four hours; discussion, one hour. Limited to school of music majors. Faculty and students make music together in different modes. Students learn certain repertoire, refine it, and bring it to concert performance. Students critically engage musical literacies and notion of social contract that forms basis of musical notation. Drawing from American music folk game traditions, highlights complex history of this country and way in which entire body is used as resource when instruments are unavailable. Letter grading.

**M109. Women in Jazz. (4)** (Same as African American Studies M109, Ethnomusicology M109, and Gender Studies M109.) Lecture, four hours; discussion, one hour. Sociocultural history of women in jazz and allied musical traditions from 1880s to present. Survey of women vocalists, instrumentalists, composers/arrangers, and producers and their impact on development of jazz. P/NP or letter grading.

**M110A-M110B. African American Musical Heritage. (5-5)** (Formerly numbered M12A-M12B.) (Same as African American Studies M116A-M116B and Ethnomusicology M110A-M110B.) Lecture, four hours; discussion, one hour. P/NP or letter grading. **M110A.** Sociocultural history and survey of African American music covering Africa and its impact on Americas; music of 17th through 19th centuries; minstrelsy and its impact on representation of blacks in film, television, and theater; religious music, including hymns, spirituals, and gospel; black music of Caribbean and Central and South America; and music of black Los Angeles. **M110B.** Sociocultural history and survey of African American music covering blues, pre-1947 jazz styles, rhythm 'n' blues, soul, funk, disco, hip-hop, and symbiotic relationship between recording industry and effects of cultural politics on black popular music productions.

**M111. Ellingtonia. (4)** (Same as African American Studies M111 and Ethnomusicology M111.) Lecture, three hours. Music of Duke Ellington, his life, and far-reaching influence of his efforts. Ellington's music, known as Ellingtonia, is one of largest and perhaps most important bodies of music ever produced in U.S. Covers many contributions of other artists who



worked with Ellington, such as composer Billy Strayhorn and musicians Johnny Hodges, Cootie Williams, and Mercer Ellington. P/NP or letter grading.

**M119. Cultural History of Rap. (5)** (Same as African American Studies M107 and Ethnomusicology M119.) Lecture, four hours; discussion, one hour. Introduction to development of rap music and hip-hop culture, with emphasis on musical and verbal qualities, philosophical and political ideologies, gender representation, and influences on cinema and popular culture. P/NP or letter grading.

**122A-122B-122C. Jazz Styles and Analysis. (4-4-4)** Lecture, four hours; outside study, eight hours. Limited to Global Jazz Studies majors or consent of instructor. In-depth analysis of jazz styles and repertoire intended for students with music backgrounds. Letter grading.

**122A.** Early Jazz to Swing Era; **122B.** Bebop to Avant-garde; **122C.** Jazz since Sixties.

**125. Jazz Arranging and Orchestration. (4)** Lecture, three hours. Limited to Global Jazz Studies majors. Study of specific instruments and their unique use and application in jazz (jazz notation and terminology, transposition, woodwind doublings, brass mutes, etc.). Analysis of different writing techniques and approaches that distinguish different sub-styles of jazz from one another. Assignments focus on writing for medium and large ensembles, with final project of arrangement to be read by UCLA Jazz Orchestra. P/NP or letter grading.

**127A-127B-127C. Jazz Keyboard Harmony I, II, III. (2-2-2)** Laboratory, two hours; outside study, four hours. Course 127A with grade of C or better is requisite to 127B; course 127B with grade of C or better is requisite to 127C. Study of jazz harmony through use of piano keyboard. Letter grading.

**M128. Exploration in Rhythms. (2)** (Same as Ethnomusicology M128.) Lecture, two hours; outside study, four hours. Preparation: ability to read melodic or rhythmic notation. Investigation and exploration of musical time and rhythm in 20th- and 21st-century classical, jazz, world, and popular music. Concepts explored include meter, pulse, rhythmic cycles, hemiolas, and polyrhythms. P/NP or Letter grading.

**129A-129B-129C. Jazz Theory and Improvisation I, II, III. (2-2-2)** Lecture, four hours; outside study, eight hours. Elements of jazz theory and improvisation. Letter grading. **129A.** Basic jazz harmonic constructions, as well as melodic, rhythmic, and harmonic concepts, and how to apply those elements to personal efforts in improvisations. **129B.** Requisite: course 129A with grade of C or better. Medium-level jazz harmonic constructions. **129C.** Requisite: course 129B with grade of C or better. Advanced-level jazz harmonic constructions.

**M130. Culture of Jazz Aesthetics. (4)** (Same as Anthropology M158 and Ethnomusicology M130.) Lecture, three hours. Recommended requisite: Anthropology 3 or 4 or Ethnomusicology 20A or 20B or 20C. Aesthetics of jazz from point of view of musicians who shaped jazz as art form in 20th century. Listening to and interacting with professional jazz musicians who answer questions and give musical demonstrations. Analytical resources and historical knowledge of musicians and ethnomusicologists combined with those interested in jazz as cultural tradition. P/NP or letter grading.

**M131. Development of Latin Jazz. (4)** (Same as Ethnomusicology M131 and Music M131.) Lecture, four hours; discussion, one hour. Survey of historical and stylistic development of musical style referred to today as Latin jazz. P/NP or letter grading.

**165. Selected Topics in Composition. (4)** Lecture, four hours; outside study, eight hours. Preparation: experience and accomplishment in composition. Evaluation of important musical concepts and approaches to enable students to develop greater compositional technique and understanding. Ways composers of jazz, European classical, and other musical genres have successfully approached use of extended compositional forms. Examination of way in which world music traditions have interfaced with jazz and other types of music to create new musical languages. Use of concepts, structural paradigms, and inspiration

from literature, visual arts, and other sources to develop student compositions. May be repeated once for credit. Letter grading.

**166. Global Jazz Studies Advanced Composition Studio. (2)** Studio, one hour; outside study, five hours. Limited to junior/senior Global Jazz Studies majors. One-on-one composition lessons. Focus on technologically informed, 21st-century tendency towards fluidity of mixing numerous compositional genres and techniques with broad array of cultural hybridity. Students create new extended composition based on their extrapolations from series of analyses covered during quarter. May be repeated for credit. P/NP or letter grading.

**171A-171I. Instruction in Advanced Jazz Performance. (2 each)** Studio, one hour of individual instruction; outside study, seven hours. Limited to junior/senior Global Jazz Studies majors. Study of jazz repertoire and techniques for specific instruments and voice. Grades are assigned by studio instructor in fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 12 units. Letter grading. **171A.** Guitar; **171B.** Percussion; **171C.** Piano; **171D.** Saxophone; **171E.** String Bass; **171F.** Trombone; **171G.** Trumpet; **171I.** Voice.

**175. Jazz Combo. (2)** Activity, two hours; laboratory, four hours. Preparation: audition. Exploration of composition and improvisation more intensely in smaller jazz combination groups of four to eight musicians. May be repeated for maximum of 12 units. Letter grading.

**176A-176G. Large Jazz Ensembles. (2 each)** Activity, two hours; outside practice, four hours. Preparation: audition. Enrollment by consent of instructor. Larger groups of students play in large ensembles, bands, or orchestras. May be repeated for credit without limitation. Letter grading. **176A.** Contemporary Jazz Ensemble; **176B.** Charles Mingus Ensemble; **176C.** UCLA Jazz Orchestra; **176D.** UCLA Afro Latin Jazz Orchestra. Activity, three hours; outside practice, three hours; **176E.** Ellingtonia Jazz Orchestra; **176F.** World Jazz and Intercultural Improvisation Ensemble; **176G.** Afro-Cuban Ensemble; **176H.** Commercial Music Studio Ensemble.

**186A. Capstone Seminar. (3)** Seminar, two hours; outside study, seven hours. Limited to senior Global Jazz Studies majors. With approval from faculty advisers, students develop and prepare one-hour recital consistent with global dimension of major, and reflect on process. In lieu of recital, students may develop research-based project, which includes comparable public event (e.g., lecture-demonstration or lecture-recital). Letter grading.

**186B. Capstone. (1)** Seminar, two hours; outside study, seven hours. Limited to senior Global Jazz Studies majors. With approval from faculty advisers, students perform (or have compositions performed in) one-hour recital consistent with global dimensions of major, contributing substantial program notes. Students who have developed alternative capstone projects present work in public event comparable to recital (e.g., lecture-demonstration or lecture-recital). Letter grading.

**188. Special Topics in Global Jazz Studies. (2 to 4)** Lecture, two to four hours; outside study, four to eight hours. Selected topics in global jazz studies. Consult Schedule of Classes for topics and instructors. May be repeated for credit. P/NP or letter grading.

**195. Community or Corporate Internships in Ethnomusicology. (4)** Tutorial, six to 12 hours. Limited to junior/senior Global Jazz Studies majors with minimum cumulative 3.0 grade-point average. Internship in supervised setting in community agency or private business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP grading.

**196. Jazz Teaching Practicum. (4)** Seminar, two hours; fieldwork, four hours; outside study, seven hours. Limited to junior/senior Global Jazz Studies majors. Integration of academic work and hands-on training in outreach program. Participation in theoretical discus-

sions of jazz education and application of these theories in elementary and secondary music and social studies classrooms. P/NP or letter grading.

**197. Individual Studies in Global Jazz Studies. (2 to 4)** Tutorial, one hour; outside study, five to 11 hours. Preparation: 3.0 grade-point average. Limited to senior Global Jazz Studies majors. Individual intensive study with scheduled meetings to be arranged between faculty member and student. Tangible evidence of mastery of subject matter resulting in final research project required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**199. Directed Research in Global Jazz Studies. (2 to 4)** Tutorial, to be arranged. Limited to junior/senior Global Jazz Studies majors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for maximum of 8 units. Individual contract required. Letter grading.

## GLOBAL STUDIES

*Interdepartmental Program  
College of Letters and Science*

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**Program e-mail**

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## Overview

The Global Studies Interdepartmental Program provides undergraduate students with a rigorous interdisciplinary education in the processes of globalization and their consequences. Housed in the UCLA [International Institute](#), Global Studies offers a research-oriented undergraduate major leading to a Bachelor of Arts (BA) degree, as well as an undergraduate minor. The curriculum features three thematic pillars that capture the principal dimensions of the unprecedented depth and breadth of interconnections among nation-states, ethnic and religious groups, and individuals. *Culture and society* courses concentrate on the tensions between local ways of life with deep historical, linguistic, ethnic, and religious roots; and today's pressures for transnational cultures and multiple identities, fueled by the communica-

tion of ideas and the movement of people all around the world. *Governance and conflict* courses focus on challenges to the nation-state from forms of governance above (regional and global forms of governance) and below (autonomy and secessionist movements); and from security threats beyond interstate warfare (ethnic conflict, terrorism, civil wars). *Markets and resources* courses address the interactions among global, regional, national, and subnational economic processes over resources and market dynamics; their effects on different societies with respect to economic growth, poverty, inequality, the environment; and the interactions among market forces, political institutions, and public policy.

The curriculum draws on insights from disciplines across the humanities and social sciences to give students the theoretical and methodological skills and knowledge base necessary to understand this complex and rapidly changing world.

## Undergraduate Major

### Global Studies BA

#### Capstone Major

The Global Studies major is a designated capstone major. As students progress through the major, they move from a set of broad themes, theories, and perspectives to a more specialized focus about which they develop a specific research expertise and write a thesis. In completing the capstone, students should demonstrate an appropriate mastery of a specialized area of global studies and a critical understanding of current scholarly concerns, literatures, and debates. They should also be able to identify and analyze primary sources and use those sources and appropriate scholarly literature to design and carry out a research project.

#### Learning Outcomes

The Global Studies major has the following learning outcomes:

- Critical thinking about basic political processes, institutions, and concepts as they operate in different national and cultural contexts
- Impartial evaluation of arguments
- Application of mathematical and logical reasoning to political processes
- Use and evaluation of statistical and other types of evidence in arguments
- Recognition of limits of quantitative and non-quantitative analysis
- Knowledge of diverse theories of politics acquired through critical engagement with texts, media, and contexts
- Location, evaluation, and use of information and scholarship to place political events in broader historical, cross-national, and theoretical contexts
- Employment of cultural, hermeneutical, normative, and historical approaches
- Written and oral arguments using appropriate evidence, with sensitivity to opposing per-

spectives, about significant political processes, events, and concepts

### Entry to the Major

#### Admission

Admission to the Global Studies major is by application only and is highly competitive, with only a limited number of students admitted each year. To be eligible to apply, UCLA students must have completed all nonlanguage preparation for the major courses and one modern foreign language equivalent to level 3 by the end of the term in which they are applying. Any remaining language courses may be completed after students have been accepted to the major. Each preparation for the major course must be taken for a letter grade, and the UC grade-point average for all preparation courses must be a minimum of 3.25. In addition, students must have earned a grade of B or better in Global Studies 1.

The application period is once per year, and students must apply no later than the end of fall quarter of their junior year.

Meeting the above minimums does not guarantee admission to the program. Admission is on a competitive basis, using the above qualifications as minimum standards for consideration.

#### Pre-major

Incoming first-year and transfer students may be admitted as Global Studies pre-majors on acceptance to UCLA. Pre-major students must apply for the major at the end of fall quarter of their junior year; they are not automatically accepted into the major.

#### Transfer Students

Transfer applicants to the Global Studies pre-major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one modern world history course, one major world region languages and cultures course, one international politics course, one macroeconomics or microeconomics course, one statistics course, and demonstrated proficiency equivalent to level 3 at UCLA in one modern foreign language. Transfer students must apply for the major by the end of fall quarter of their junior year.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Global Studies 1 with a grade of B or better; one methods course selected from Political Science 6, 6R, 30, Statistics 10, 12, or 13; demonstrated proficiency equivalent to level 6 at UCLA in one modern foreign language; and five additional courses as follows: (1) one *culture and society* course selected from Anthropology 3, 4, Comparative Literature 1C or 2CW, 1D or 2DW, 4CW or 4DW, Ethnomusicology M25, Gender Studies 10, Geography 3, 6, History 2B, World Arts and Cultures 20, or 33, (2) one *governance and conflict* course selected

from History 10B, 22, Political Science 10, 20, 50, 50R, or Sociology 1, and (3) one *markets and resources* course selected from Economics 1, 2, Environment 12, Clusters M1A, or Sociology 51. The remaining two courses, taken from two separate categories, may be selected from the three lists above. One course from the following list may be applied toward the *culture and society* category: Asian 70C, Asian American Studies 10, Chicana/o and Central American Studies 10B, French 14, 14W, History 8A, 9E, International and Area Studies 31, 33, 50, Italian 42A, 42B, 46, Middle Eastern Studies M50CW, Russian 90A, 90B, 90BW, Spanish 42, or 44.

#### The Major

*Required:* Global Studies 102, 103, 104, and six elective courses, two from each of the following categories:

*Culture and Society*—Anthropology 146, M148, Asian American Studies M130C, 170, M172A, 172C, Chicana/o and Central American Studies 120, 143, CM147, Comparative Literature 100, M148, English 130, 131, 133, 134, Film and Television 106C, 112, French 121, 142, Gender Studies 102, M147C, M162, Geography 141, 151, 175A, Global Studies 125, 140, Political Science M184A, Religion M107, Southeast Asian 157, Society and Genetics 134, Sociology 151, 152, 154, M162, 191F

*Governance and Conflict*—Asian American Studies 171A, M171D, 171E, Chicana/o and Central American Studies 151, Environment M125, Geography M131, 148, History 121E, 121F, 144, M186A, Honors Collegium 125, Political Science 120A, 120B, 121A, 122A, M122B, 123A, 123B, 125A, 126, 128A, 132A, M132B, 135, 137A, 138B, 169, Sociology 182

*Markets and Resources*—Anthropology 143, Chicana/o and Central American Studies M125, 176, Economics 121, 122, Environment 134, Geography M127, 150, Global Studies 120, 145, History 131A, 134C, International Development Studies M120, Political Science 124A, 151B, M167C, 167D, Spanish 135, Sociology 183.

*Required Summer Global Learning Institute:* After successful completion of two courses from Global Studies 102, 103, 104, students are expected to attend a summer Global Learning Institute at one of several locations around the world in which they enroll in Global Studies 110A and 110B.

*Required Capstone:* During their senior year, students must also take two capstone courses—Global Studies 191 and research/field experience practicum: International and Area Studies 195CE or Global Studies 199.

#### Honors Program

In addition to completing all courses required for the major, students must take courses 199A and 199B, in which they research and write an honors thesis.

#### Policies

##### Preparation for the Major

Courses must be completed with a grade-point average of 3.25 or better.

## Honors Program

Majors who have completed Global Studies 102, 103, 104, 191, and who have a 3.5 grade-point average (GPA) in all courses offered for the major are eligible to formally apply for the honors program.

To receive honors at graduation, students must have at least a 3.5 GPA in courses applied toward the major (including 199A and 199B) and an overall GPA of 3.25. Highest honors may be granted at the discretion of the faculty sponsor and the faculty committee to students demonstrating exceptional ability on the senior thesis.

## Undergraduate Minor

### Global Studies Minor

The Global Studies minor offers students a multidisciplinary curriculum in the humanities and social sciences through which they can explore the complex and multifaceted interconnections that characterize the contemporary world. The minor is designed to complement and enrich studies in their major.

### Admission

To enter the minor, students must (1) be in good academic standing (minimum 2.0 grade-point average) and (2) have completed Global Studies 1 and one course in two of the following three categories: (a) *culture and society*—Anthropology 3, 4, Asian 70C, Asian American Studies 10, Chicana/o and Central American Studies 10B, Comparative Literature 1C or 2CW, 1D or 2DW, 4CW or 4DW, Ethnomusicology M25, French 14, 14W, Gender Studies 10, Geography 3, 6, History 2B, 8A, International and Area Studies 31, Italian 42A, 42B, Middle Eastern Studies M50CW, Russian 90B, 90BW, Spanish 42, 44, World Arts and Cultures 20, or 33, (b) *governance and conflict*—History 10B, 22, Political Science 10, 20, 50, 50R, or Sociology 1, and (c) *markets and resources*—Economics 1, 2, Environment 12, Clusters M1A, or Sociology 51.

### The Minor

**Required Courses (22 to 25 units):** Five courses from the following categories with at least two from the core: (1) *core*—Global Studies 102, 103, 104; (2) *culture and society*—Anthropology 146, M148, Asian American Studies M130C, 170, M172A, 172C, Chicana/o and Central American Studies 120, 143, CM147, Comparative Literature 100, M148, English 130, 131, 133, 134, Film and Television 106C, 112, French 121, 142, Gender Studies 102, M147C, M162, Geography 141, 151, 175A, Global Studies 125, 140, Political Science M184A, Religion M107, Southeast Asian 157, Society and Genetics 134, Sociology 151, 152, 154, M162, or 191F; (3) *governance and conflict*—Asian American Studies 171A, M171D, 171E, Chicana/o and Central American Studies 151, Environment M125, Geography M131, 148, History 121E, 121F, 144, M186A, Honors Collegium 125, Political Science 120A, 120B, 121A, 122A, M122B, 123A, 123B, 125A, 126, 128A, 132A, M132B, 135, 137A, 138B, 169, or

Sociology 182; (4) *markets and resources*—Anthropology 143, Chicana/o and Central American Studies M125, 176, Economics 121, 122, Environment 134, Geography M127, 150, Global Studies 120, 145, History 131A, 134C, International Development Studies M120, Political Science 124A, 151B, M167C, 167D, Spanish 135, or Sociology 183.

After completing at least two courses from Global Studies 102, 103, 104, Global Studies minors are highly encouraged to participate in a summer Global Learning Institute at one of several locations around the world. The courses offered, Global Studies 110A and 110B, may be applied toward any two of the elective categories (*culture and society, governance and conflict, and markets*).

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Global Studies

### Lower-Division Courses

**1. Introduction to Globalization. (5)** Lecture, three hours; discussion, one hour. Introduction to concept and history of globalization, and to political, economic, social, and environmental dimensions of global integration today. Topics include finance and trade, colonialism, Industrial Revolution, urbanization, immigration, and climate change, among others. P/NP or letter grading.

**10. International Diplomacy and Foreign Affairs. (2)** Lecture, 15 hours; discussion, 15 hours. Limited to high school students participating in Model United Nations (UN) Summer Institute. One-week intensive summer course, including lectures in international relations and outside study. Development of position papers in simulation of United Nations and final presentation in respective UN committees. Particular emphasis on public speaking and cooperative debate. May be repeated for credit without limitation. Offered only as part of Summer Institute. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**102. Globalization: Markets and Resources. (5)** Lecture, three hours; discussion, one hour. Requisite: course 1. Examination of how domestic and international politics determine how global economy is governed. Topics include monetary and capital policy, trade, international investment, and migration. Letter grading.

**103. Globalization: Governance and Conflict. (5)** Lecture, three hours; discussion, one hour. Requisite: course 1. Exploration of globalization of governance and its effect on outbreak, management, and resolution of disputes, violence, and conflict. Review of international and regional institutions and their interaction with contemporary issues, which may include terrorism, human rights, climate change, and cybersecurity. Letter grading.

**104. Globalization: Culture and Society. (5)** Lecture, three hours; discussion, one hour. Requisite: course 1. Investigation of circulation of peoples, goods, and media to examine interactions of globalization with local culture and formation of global cultures through practices and processes of globalization. Letter grading.

**110A. Globalization in Context. (5)** Lecture, six hours. Requisite: course 100B. Corequisite: course 110B. Culture, economy, history, and politics of different locations around world and how they are affected by globalization. Field trips included to gain first-hand experience of these processes. Offered in summer only. P/NP or letter grading.

**110B. Globalization in Context Research Seminar. (5)** Seminar, six hours. Requisite: course 100B. Corequisite: course 110A. Individual research projects on different aspects of globalization process in locations around world. Offered in summer only. P/NP or letter grading.

**112AD. Globalization in Context: Markets and Resources. (5)** Lecture, six hours. Requisite: course 102. Corequisite: course 112BD. Examination of development of markets and businesses in globalized world. Field trips included to gain first-hand experience of these processes. Offered in summer only. P/NP or letter grading.

**112BD. Globalization in Context Seminar: World Markets and Resources. (5)** Seminar, six hours. Requisite: course 102. Corequisite: course 112AD. Examination of role of markets and businesses in globalized world. Offered in summer only. P/NP or letter grading.

**113AD. Globalization in Context: Governance and Conflict. (5)** Lecture, six hours. Requisite: course 103. Corequisite: course 113BD. History, politics, philosophy, and governance of global governance and how they are affected by globalization. Field trips included to gain first-hand experience of these processes. Offered in summer only. P/NP or letter grading.

**113BD. Globalization in Context Seminar: World Governance. (5)** Seminar, six hours. Requisite: course 103. Corequisite: course 113AD. History, politics, philosophy, and governance of global governance and how they are affected by globalization. Offered in summer only. P/NP or letter grading.

**114AD. Globalization in Context: Culture and Society. (5)** Lecture, six hours. Requisite: course 104. Corequisite: course 114BD. Culture, economy, history, and politics of race, gender, and religion and how they are affected by globalization. Field trips included to gain first-hand experience of these processes. Offered in summer only. P/NP or letter grading.

**114BD. Globalization in Context Seminar: World Culture and Society. (5)** Seminar, six hours. Requisite: course 104. Corequisite: course 114AD. Individual research projects on different aspects of globalization process in locations around world, including racial and gender identities. Offered in summer only. P/NP or letter grading.



# GRADUATE STUDENT PROFESSIONAL DEVELOPMENT

*Division of Graduate Education*

1255 Murphy Hall  
Box 952801  
Los Angeles, CA 90095-2801

**Graduate Education**

310-825-3819

## Overview

The Division of Graduate Education sponsors universitywide courses for the professional development of graduate students.

## Graduate Student Professional Development Graduate Courses

**495A. Teaching Assistant Pedagogy Seminar. (2)** Seminar, two hours. Overview of evidence-based pedagogical theories, strategies, and best practices geared towards preparing first-time teaching assistants to teach at UCLA. Discussion, development, and implementation of pedagogical techniques to promote inclusive teaching and support student learning outcomes. S/U grading.

**496A. Introduction to Evidence-Based Undergraduate Teaching. (2)** Seminar, 90 minutes. Designed for graduate students and postdoctoral scholars. Exploration and practice of fundamental principles of learning, backward design, assessment, active learning, and inclusive teaching. Lesson plan design with feedback. Meets associate level of CIRTL certification requirement. May be repeated once for credit. S/U grading.

**496B. Teaching as Research. (2)** Seminar, 90 minutes. Requisite: course 496A or equivalent. Students become reflective practitioner by applying systematic and reflective use of research methods to develop teaching practices in order to advance learning experiences and outcomes of students and teachers. Students produce proposal for TAR project. May be repeated once for credit. S/U grading.

**496C. Implementing and Communicating Teaching as Research Project. (2 to 4)** Tutorial, three to six hours; research group meeting, two to four hours. Requisite: course 496B. Implementation, data analysis, and communication of results of TAR project with feedback and approval of faculty-adviser mentor and peer support in learning community. Meets practitioner level of CIRTL certification requirement. S/U grading.

**497A. Introduction to Course Design. (2)** Seminar, three hours. Introduction to evidence-based strategies for course design that are effective for student learning and equitable across modalities of instruction. Participants apply principles of backward design and learner-centered design to articulate transparent learning objectives and align course goals with assessments and learning activities. Suitable for graduate student instructors designing courses from scratch and those modifying existing courses to teach during summer session. S/U grading.

**497B. Collegium of University Teaching Fellows Pedagogy Seminar. (2)** Seminar, three hours. Enrollment is limited to Collegium of University Teaching Fellows (CUTF) program students by consent of instructor. Advanced pedagogy seminar with focus on applying evidence-based pedagogies to refine syllabus and scaffolding assignments to support lower-

**120. Introduction to International Business. (4)** Lecture, three hours; discussion, one hour (when scheduled). Over last five decades, world has increasingly become globalized, presenting many new opportunities for businesses and entrepreneurs. However, recent world events have demonstrated volatile nature of globalization and pitfalls that can also manifest for firms doing business in global setting. Students gain understanding of dynamic environment of international business, and how firm managers navigate complex world of international business to capitalize upon opportunities and mitigate against risks. P/NP or letter grading.

**125. Los Angeles as Global City: Exporter and importer of Global Culture. (4)** Lecture, three hours; discussion, one hour. Study of phenomenon of globalization through prominent case of Los Angeles. Focus on how city produces global culture, including filmed entertainment and culture of celebrity and food; and how it absorbs cultural inputs from world over. Emphasis on interactive relationship between export and import of global culture. City's distinct cultural milieu influences nature of its cultural exports, but its viability as cultural capital depends on its ability to accommodate integrate diversity of cultures. Study creates immersive experience through films, guest speakers, and urban field trips. P/NP or letter grading.

**140. Hollywood and America's Global Image. (4)** Lecture, three hours; discussion, one hour (when scheduled). Hollywood movies and television shows are meant to unify global audiences by exporting stories and images that demonstrate our shared humanity. But they also reveal unpleasant truths about American attitudes towards foreign cultures as well as our own. Examination of critical aspects of Hollywood's role in shaping America's global image. Questioning of whether Hollywood can be more effective as America's cultural ambassador. P/NP or letter grading.

**145. Rethinking Global Capitalism: Race, Class, Gender, History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 1. Reconsideration of histories and geographies of global capitalism. Displacing industrial revolution from Britain out into colonial world, transatlantic slave trade, and attempted genocide of indigenous peoples in Americas, study of new map of global capitalism and new histories of globalization. Study covers capitalism; embodiment and gender; capitalism and environmental crisis; and new issues in digital capitalism, gig economy, and social media. Letter grading.

**160. Selected Topics in Global Studies. (4)** Lecture, three hours; discussion, one hour (when scheduled). Examination of one or more topics related to global studies. May be repeated for credit with topic change. P/NP or letter grading.

**M161. Special Topics in Global Studies and Public Policy. (4)** (Same as Public Policy CM191G.) Seminar, three hours. Examination of one or more topics related to public policy and global studies. May be repeated for credit with topic change. P/NP or letter grading.

**M177. Superfoods: Cultural and Global Perspectives. (4)** (Same as Food Studies M177 and International Development Studies M177.) Seminar, four hours. Exploration of superfoods, which are nutrient rich foods considered beneficial for well-being, health, and longevity, as they are high in minerals, vitamins, and antioxidants. While superfoods have been part of cultures' diets for centuries, in recent decades they have been researched in scientific and medical communities. Citizens globally have begun to increasingly demand and consume foods that are nutritious, organic, and sustainable. It is important also to address issues such as marketing, misinformation, and hyper about superfoods. Surge of interest in superfoods is increasingly important in context of ongoing global inequities with regards to food access and production. Study addresses paradox that communities cope simultaneously with malnutrition/hunger and obesity, and how farming practices for superfoods and staple crops are related. P/NP or letter grading.

**188A-188B. Special Studies in Global Studies. (4-4)** Seminar, three hours. Program-sponsored experimental or temporary courses, such as those taught by resident or visiting faculty members. May be repeated for credit with topic change. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Global Studies—Senior Seminar. (4)** Seminar, three hours. Enforced requisites: courses 110A, 110B. Limited to senior Global Studies majors. Organized on topics basis with readings, discussions, papers, and development of culminating project. May not be repeated for credit. Letter grading.

**192. Undergraduate Practicum in Global Studies. (2)** Seminar, two hours; practicum, to be arranged. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students to serve as undergraduate course assistants in global studies courses. Students assist in preparation and presentation of materials and development of innovative programs with guidance of faculty members. May not be applied toward major requirements. May be repeated for credit. P/NP grading.

**194. Research Group Seminars. (1)** Seminar, two hours. Designed to encourage participation and stimulate progress in specific research areas for undergraduate students who are part of departmental research group or internship. Discussion of research methods or current literature in field of global studies or of research of faculty members or students. May be repeated for credit. P/NP grading.

**199. Directed Research in Global Studies. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper required. May be applied toward requirements via petition. May be repeated for credit. Individual contract required. Letter grading.

**199A. Directed Research in Global Studies. (4)** Tutorial, to be arranged. Limited to senior Global Studies majors. Supervised individual research under guidance of faculty mentor. Culminating paper required or comprehensive outline if pursuing departmental honors. Individual contract required. Letter grading.

**199B. Directed Individual Research in Global Studies. (4)** Tutorial, one hour. Requisite: course 199A. Limited to senior Global Studies majors. Supervised individual research or investigation under guidance of faculty mentor. Final drafting and submission of senior thesis. Culminating paper of 35 to 50 pages required. Individual contract required. Letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

division students who may be new to field of inquiry and/or new to college-level research and writing. S/U grading.

**497C. Approaches to Community-Engaged Teaching. (4)** (Formerly numbered 495CE.) Seminar, two hours. Suitable for graduate students in any discipline. Introduction to best practices for community-engaged pedagogy and experiential learning, with emphasis on strategies for collaborating effectively with diverse communities of Los Angeles. S/U grading.

**497R. Integrating Writing and Research in Teaching Practice. (4)** (Formerly numbered 497R.) Seminar, two hours. Introduction to strategies for integrating writing and research in instruction, emphasizing research and information literacy skills instruction and UCLA's context. This course is suited Designed for teaching assistants from all departments, and does not require any prior knowledge or teaching experience. S/U grading.

## HEAD AND NECK SURGERY

*David Geffen School of Medicine*

62-132 Center for Health Sciences  
Box 951624  
Los Angeles, CA 90095-1624

### Head and Neck Surgery

310-206-3631

Maie St. John, MD, PhD, *Chair*

## Overview

The Department of Head and Neck Surgery academic programs consist of a nationally recognized residency program, medical school education, prestigious fellowships, and ongoing continuing medical education. A critical success factor in these academic efforts is the high level of clinical expertise demonstrated by all faculty members, which attracts outstanding applicants. Additionally, department faculty members have an active commitment to basic science and clinical research as an integral component of the program of instruction. These tenets not only ensure quality at every educational level, but also provide a superior milieu for the development of teacher-investigators.

The residency program is incorporated into the department patient care and research activities in six affiliated medical centers and exposes residents to all of the subspecialties during their training. Medical student teaching is a combined effort by faculty members, fellows, and residents, consisting of lectures, didactic learning, and hands-on experience in clinical and research settings. The department's one- and two-year fellowships are long-standing and sought after by graduate from the best residency programs in the country. Through the continuation of exceptional educational programs, the department accomplishes its commitment to maintain excellence in patient care, to achieve academically, and to advance research in the field.

For more details on the Department of [Head and Neck Surgery](#) and courses offered, see the department website.

[Head and Neck Surgery faculty](#) information is available from the department.

## HEALTH POLICY AND MANAGEMENT

*Jonathan and Karin Fielding School of Public Health*

31-269 Center for Health Sciences  
Box 951772  
Los Angeles, CA 90095-1772

### Health Policy and Management

310-825-2594

#### Department e-mail

Ninez A. Ponce, MPP, PhD, *Chair*

Beth A. Glenn-Mallouk, PhD, *Vice Chair*

## Faculty Roster

### Professors

Roshan Bastani, PhD  
Arturo Vargas Bustamante, MPP, PhD  
Warren S. Comulada, MPH, DrPH, *in Residence*  
Daniel Eisenberg, PhD  
Joann G. Elmore, MD, MPH (*Rosalinde and Arthur Gilbert Foundation Endowed Professor of Health Care Delivery*)  
Jose J. Escarce, MD, PhD  
Susan L. Ettner, PhD  
Jonathan E. Fielding, MD, PhD, *in Residence*  
Patricia A. Ganz, MD  
Lillian Gelberg, MD, MSPH  
Beth A. Glenn-Mallouk, PhD  
Neal Halfon, MD, MPH  
David E. Hayes-Bautista, PhD  
Ronald D. Hays, PhD  
S. Jody Heymann, MD, PhD  
Felicia S. Hodge, DrPH  
Moira Inkelas, MPH, PhD  
Clifford Y. Ko, MD (*Robert and Kelly Day Professor of Surgical Outcomes*)  
Mark S. Litwin, MD, MPH (*Fran and Ray Stark Foundation Professor of Urology*)  
James A. Macinko, PhD  
Carol M. Mangione, MD, MSHS (*Barbara A. Levey and Gerald S. Levey Endowed Professor*)  
Vickie M. Mays, MSPH, PhD  
Jack S. Needleman, PhD  
Michael Ong, MD, PhD, *in Residence*  
Ninez A. Ponce, MPP, PhD (*Fred W. and Pamela K. Wasserman Professor of Health Policy and Management*)  
Nadereh Pourat, MSPH, PhD, *in Residence*  
Thomas H. Rice, PhD  
Linda Rosenstock, MD, MPH  
Brennan M. Spiegel, MD, MSHS, *in Residence*  
Kenneth B. Wells, MD, MPH, *in Residence* (*David Weil Professor of Psychiatry and Biobehavioral Sciences*)  
Frederick J. Zimmerman, PhD

### Professors Emeriti

Emily K. Abel, PhD  
Ronald M. Andersen, PhD  
Barbara A. Berman, PhD

Diana W. Hilberman, DrPH  
Robert M. Kaplan, PhD  
Gerald F. Kominski, PhD  
William J. McCarthy, PhD

### Associate Professors

Corrina Moucheraud, ScD  
Yusuke Tsugawa, MD, MPH, PhD, *in Residence*  
Xi Zhu, PhD

### Assistant Professors

Kristen R. Choi, RN, PhD  
Lauren E. Wisk, PhD, *in Residence*  
Naomi Zewde, PhD

### Adjunct Professors

Pamela L. Davidson, MS, PhD, *Emerita*  
Laura S. Erskine, MBA, PhD  
Arlene Fink, PhD  
Deborah Freund, PhD  
Paul C. Fu, Jr., MD, MPH  
Michael Galper, MPH, CPA  
Alice A. Kuo, MD, PhD  
Annette E. Maxwell, DrPH, *Emerita*  
Thomas M. Priselac, MPH  
Anthony H. Schiff, JD, MPH  
Steven M. Teutsch, MD, MPH  
Leah J. Vriesman, MBA, MHA, PhD  
Elizabeth M. Yano, MSPH, PhD

### Adjunct Associate Professors

Sangeeta C. Ahluwalia, MPH, PhD  
Aria Fallah, MD, MSc, FRCS, FAANS  
Yvonne Flores, MPH, PhD  
Risha Gidwani-Marszowski, DrPH  
Z. John Lu, PhD  
Stephanie L. Taylor, PhD, MPH

### Adjunct Assistant Professors

Burton O. Cowgill, MPH, PhD  
Julie A. Elginer, DrPH  
Michelle S. Keller, MPH, PhD  
Peter V. Long, PhD  
Isomi M. Miake-Lye, PhD  
Lori S. Pelliccioni, JD, PhD

## Overview

The field of health policy and management examines the organization and financing of various health sector and wider social system activities to prevent and treat disease. This includes programs in both the public and private sectors at all levels—local, state, and federal.

Faculty members come from such diverse fields as economics, management, law, statistics, operations research, planning, medicine, history, sociology, and political science. These diverse disciplines are harmonized by their devotion to solving problems—through quantitative, qualitative, and mixed method analyses—in the financing and delivery of health policy and management, with a focus on populations rather than individual patients.

## Graduate Study

The Department of Health Policy and Management offers both practice-oriented and research-oriented graduate programs. The primary professional degree, the Master of Public



Health (MPH), includes training in various aspects of health administration such as policy formulation, health planning, organization, and management. For information on the MPH and concurrent degree programs, see the [Health Policy and Management Department](#) on the Graduate Education website.

For those interested in careers in research and teaching, the department offers Master of Science (MS) and Doctor of Philosophy (PhD) degrees in Health Policy and Management. These programs maintain close ties with related activities in the schools of dentistry and medicine, including the [UCLA National Clinician Scholars Program](#).

## Graduate Majors

### Executive Master of Public Health

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Health Policy and Management MS, PhD

Students have the opportunity to collaborate with the department's seven existing centers by actively engaging in progressive health services research across a wide breadth of topics, examining issues and finding solutions to critical health care problems locally, nationally, and globally. Graduates pursue careers in universities, as well as in public and private agencies involved in health services research and health policy analysis.

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Healthcare Administration

Students have the opportunity to collaborate with the department's seven existing centers by actively engaging in progressive health services research across a wide breadth of topics, examining issues and finding solutions to critical health care problems locally, nationally, and globally. Graduates pursue careers in universities, as well as in public and private agencies involved in health services research and health policy analysis.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Healthcare Administration Graduate Courses

**400. Field Studies. (4)** Fieldwork, to be arranged. Culmination of fieldwork process that takes approximately one year from internship search process, through actual field placement, to this integrative course. Deliberate consideration and reflection on relationship between summer practicum and principles and competencies of health-care management and policy learned during academic year. Students complete professional management or policy-related consulting report based on organizational problem or health policy issue on which students focused during summer. S/U or letter grading.

**401. Health Care Organization and Financing. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Healthcare Administration students. In-depth analysis of organization of health services systems in U.S., using relevant theories, concepts, and models. Discussion of various mechanisms for payment and insurance schemes. Letter grading.

**402. Management and Organizational Behavior in Health Systems. (4)** Lecture, three hours; discussion, one hour. Application of contemporary management and organization behavioral theory to systems that provide personal health-care services. Environmental characteristics, decision-making, structure and culture, and processes of health services organizations. Letter grading.

**403. Health-Care Information Systems and Technology. (4)** Lecture, three hours; discussion, one hour. Provides strong foundation in health information technology (HIT) for those working in health care, with emphasis on development of knowledge and skill to plan, manage, and implement HIT systems in health-care delivery organizations with clinical and business partners and evolving HIT spaces. Background and evolution of HIT; how it is planned, implemented, and managed; and how it can be productively used by health-care delivery organizations, external research organizations, regulatory organizations, providers, and patients/consumers. Fundamentals of technology, electronic medical records (EMR), electronic health records (EHR), personal health records (PHR), meaningful use, interoperability, and health information exchanges (HIE). Letter grading.

**404. Health-Care Strategy. (4)** Lecture, three hours; discussion, one hour. Conceptual, analytical, and technical aspects of environmental assessment and strategy formulation in health delivery organizations, biopharma, and medical technology. Special attention to structure and dynamics of competitive markets, corporate-level strategic planning and marketing, managerial ethics and values, organizational creativity/innovation. Letter grading.

**405. Leadership and Ethics. (4)** Lecture, three hours; discussion, one hour. Preparation: completion of immersion course 596. Examination of leaders and leadership in health care and other organizations to provide broad introduction to literature on skills, behaviors, and characteristics of organizational leaders. Relationship and importance of vision, values, change, strategy, and communication. Identification of characteristics of successful leaders. Students evaluate their own leadership style and identify opportunities to further develop their leadership abilities. Letter grading.

**406. Health-Care Marketing. (4)** Lecture, three hours; discussion, one hour. Introduction to concepts of health-care marketing. Exploration of principles of market-driven decision-making process. Examination

of development of key elements in annual marketing process and of consumer, competitor, company analysis, market segmentation, and target markets. Letter grading.

**407. Digital Health Transformation. (4)** Lecture, three hours; activity, one hour. Prepares students to lead digital health transformation by deepening knowledge of health technologies driving innovative health-care delivery. Ten learning modules build analytic and leadership competencies required to advance and accelerate digital health transformation in one's organization, whether it is startup or large, mature health system. Letter grading.

**408. Human Resource Management in Health Care. (4)** Lecture, three hours; activity, one hour. Management of human resources in health care system including human resource planning and staffing, training and development, performance appraisal, job design and analysis, and compensation. Letter grading.

**411. Microeconomic Theory for Health Sector. (4)** Lecture, three hours; discussion, one hour. Microeconomic aspects of health-care system, including health manpower substitution, choice of efficient modes of treatment, market efficiency, and competition. Letter grading.

**412. Statistics for Health Management Decision-Making. (4)** Lecture, three hours; discussion, one hour. Sampling situations, with special attention to those occurring in biological and social sciences. Topics include distributions, tests of hypotheses, estimation, types of error, significance and confidence levels, and sample size. Letter grading.

**413. Health Care Operations Management. (4)** Lecture, three hours; discussion, one hour. Development of skills in analyzing and improving health care systems and processes by integrating systems analysis, quality management, operations research techniques, exploratory data analytics, and data visualization. Emphasis on use of organizational data, especially time-stamp data, to study processes and outcomes of care, particularly as it relates to flow analysis and improving flow. Hands-on use of computer-based modeling tools, including spreadsheets and spreadsheet add-ins focus on formulating, designing, and constructing models; drawing conclusions from model results; and translating results into written end-user reports to support process improvement and quality improvement efforts. Letter grading.

**414. Health Care Financial Accounting. (4)** Lecture, three hours; discussion, one hour. Examination of purpose and methods of financial accounting (including for profit, not for profit, and governmental), function and organization of finance department, and special industry characteristics affecting financial management (to include third party payers, price or rate-setting and cost-shifting, taxation and health care incentives, and emerging health care organizations). Letter grading.

**415. Health Care Financial Management. (4)** Lecture, three hours; discussion, one hour. Concepts of financial management and managerial accounting as applied within health care industry. Builds managerial financial decision-making skills and key analytical methods used in applications of health care financial management. Students gain understanding and respond to financial recommendations of advisers, lenders, investors, and other stakeholders by applying concepts such as time value of money, financing approaches, capital planning, and budgeting. Letter grading.

**416. Quality Improvement and Performance Excellence. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Healthcare Administration students. In-depth analysis of organization of health services systems in U.S., using relevant theories, concepts, and models. Discussion of various mechanisms for payment and insurance schemes. Letter grading.

**417. Data Analytics and Visualization. (4)** Lecture, three hours; discussion, one hour. Exploration of data sources and uses in health care, e.g., electronic medical records, social media, wireless biosensors, system and facility data. Review of hands-on techniques including data management, development of indexes and metrics, choosing and implementing

analysis methods and visualizations. Discussion of role of data collection and processing within health care system. Elevates analytical skills and increases capabilities to leverage data to drive strong leadership decisions within management functions, health-care organizations, and health-care industry at large. Letter grading.

**418. Health Reform: Policy and Implementation. (4)** Lecture, three hours; activity, one hour. Examination of politics of health policy process and how problems are considered for governmental action, how solutions are identified, and how political forces act on them. Emphasis on both understanding how public policy is made, and how to influence process and how to understand formulation of policy in response to problems and political will of leaders. Covers how health policy is developed, adopted, and implemented; political, institutional, economic, social, and other factors that influence and shape process; and how health care managers can be engaged in policymaking or interpreting policy decisions they must comply with as health care leaders. Letter grading.

**596. Directed Individual Study or Research. (1 to 4)** Tutorial, to be arranged with MHA program faculty member. Limited to graduate students. Professional development seminars and workshops. Only 1 unit may be applied toward MHA minimum total course requirement. S/U or letter grading.

**597. Preparation for Master's Comprehensive Capstone Project. (1 to 4)** Tutorial, to be arranged. Limited to graduate students. Reading and preparation for master's comprehensive capstone project. Mandatory and supplemental topic lists approved by student advisory committee. Only 1 unit may be applied toward MHA minimum total course requirement. May be repeated for credit. S/U and letter grading.

## Health Policy and Management

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Health Care Systems and Health Policy. (4)** Lecture, four hours; discussion, one hour. Limited to nonmajors. Not open for credit to students with credit for course 120. Structure and function of U.S. health care system, health care policy, and issues and forces shaping its future. P/NP or letter grading.

**M110. Ethnic, Cultural, and Gender Issues in America's Healthcare Systems. (4)** (Same as Asian American Studies M161.) Lecture, three hours. Designed for juniors/seniors. Introduction to study of gender, ethnicity, and cultural diversity related to health status and healthcare delivery in U.S. Letter grading.

**120. Health Care Systems: Structures, Functions, and Policies. (5)** Lecture, four hours; discussion, one hour. Requisite: Public Health 50B. Limited to Public Health majors. Not open for credit to students with credit for course 100. Introduction to health policy and management focusing on basic concepts underlying health care organization, finance, and policy. Topics include development of U.S. health care system, comparisons to international health care systems, trends in health care spending, role of public and private insur-

ance, care delivery, disparities in health status and health care, and current landscape of health policy reform. Letter grading.

**C121. Tobacco: Prevention, Use, and Public Policy. (4)** Lecture, four hours. Designed for juniors/seniors. Study of tobacco use and its health consequences, including interplay of historical, biological, sociocultural, political, and economic forces with knowledge, attitudes, and behavior choices of individuals. Introduction to prevention interventions, cessation interventions, anti-tobacco efforts in U.S., and international trends in tobacco use. Concurrently scheduled with course C221. Letter grading.

**140. Foundations of Maternal and Child Health. (4)** Seminar, four hours. Introduction to field of maternal and child health, with focus on major issues affecting health and well-being of children and families over life course. Emphasis on health, prevention, and supportive programs at different stages of child's life; application of life course health development framework to understand health disparities and implications for policy and practice. Letter grading.

**M168. Healthcare for American Indians. (4)** (Same as American Indian Studies CM168.) Lecture, two hours; discussion, one hour. Identification of traditional health beliefs, health practices, and healthcare systems of American Indian tribes to understand role of U.S. government in healthcare services for Indian people. Description of health problems that have affected American Indian people and definition of contemporary health issues and measures taken to raise health status of American Indian people. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**197. Individual Studies in Health Services. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Health Policy and Management. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Entry-level research apprenticeship under guidance of faculty mentors. Collaboration with faculty mentors on their research in area related to health policy and management. May be repeated for credit. Individual contract required. Letter grading.

### Graduate Courses

**200A-200B. Health Systems Organization and Financing. (4-4)** Lecture, three hours; discussion, one hour. Limited to graduate health services students. In-depth analysis of health services systems in U.S., using relevant theories, concepts, and models. S/U or letter grading.

**M201. Topics in Theoretical Epidemiology. (4)** (Same as Epidemiology M203.) Lecture, three hours. Emphasis on methods that help to understand how systems operate and how to intervene on them. Exploration of how to characterize human-centered problems

that arise, and how to handle complexity as core design and development challenge. Examination of different traditions of studying and modeling (representing) systems, both conceptually and quantitatively, to address questions that arise in public health. Consideration of utility and limitations of these methods for providing insight to stakeholders who are addressing population health problem. S/U or letter grading.

**202. Introduction to Statistics and Research Methods for Health Services Research. (4)** Lecture, two hours; laboratory, two hours. Overview of statistical and research methods for health services research. Preparation for subsequent graduate coursework in statistics and leading independent research projects. Students learn to develop analytical skills involving distributions, probability, and descriptive statistics and how they can be applied to public health. S/U or letter grading.

**M203A. Microeconomic Analysis for Public Health and Policy. (4)** (Same as Public Policy M201A.) Lecture, four hours. Requisite: Mathematics 3A or 3B or 31A. Course M203A is requisite to M203B. Basic concepts of microeconomics, with emphasis on their application to actual situations and their use in problem solving and focus on theory of choice. Extensive use of differential calculus. Letter grading.

**M203B. Microeconomic Analysis for Public Health and Policy. (4)** (Same as Public Policy M204A.) Lecture, four hours. Requisites: course M203A, and one course from Mathematics 3A, 3B, or 31A. Basic concepts of microeconomics, with emphasis on their application to actual situations and their use in problem solving and focus on theories of firms and markets. Extensive use of differential calculus. Letter grading.

**M204A-M204B-M204C. Seminars: Pharmaceutical Economics and Policy. (1-1-2)** (Same as Economics M204L-M204M-M204N.) Seminar, three hours every other week. Requisite: course M236. Limited to graduate public health and economics students. Various topics in economics of pharmaceutical industry, including rates of innovation, drug regulation, and economic impact of pharmaceuticals. In Progress (M204A, M204B) and letter (M204C) grading.

**M205. Pharmaceutical Policy. (4)** (Formerly numbered 205.) (Same as Public Policy M265.) Lecture, three hours. Policy issues pertaining to pharmaceutical sector. Topics include determinants of expenditures on drugs, price setting in industry, health insurance coverage for pharmaceuticals, and research and development process. Letter grading.

**206. Healthcare for Vulnerable Populations. (4)** Lecture, three hours. Overview of health services issues associated with organization, financing, and delivery of healthcare services to vulnerable populations within domestic and international contexts to gain understanding of social, political, economic, and cultural issues that lead to disparities in access, quality, and cost of healthcare services that lead to vulnerability for particular population groups. Introduction to strategies that have been adopted to address these health disparities. Analysis and development of policy and management options that serve needs of vulnerable populations within healthcare system. Letter grading.

**214. Measurement of Effectiveness and Outcomes of Health Care. (4)** Lecture, three hours. Requisites: courses 200A, 200B, M422. Historical perspective for development of health status measures and their utilization in assessment of outcomes and effectiveness in medical care. Review of current methods in context of current research and practice. Letter grading.

**215A. Healthcare Quality and Performance Management. (4)** Lecture, four hours. Management and operations of individual units and organizations of American healthcare system. Exploration of ways in which they actually function and how to ensure their quality and effectiveness. Examination of roles, activities, and daily challenges of managers and how these challenges can best be met on day-to-day basis. Emphasis on applied practice with intent being improvement of student managerial competencies and on development of skills to manage operational processes in delivery of health services, primarily directed to improving effectiveness, efficiency, performance, and quality of healthcare services. Quality improvement

(QI) techniques such as performance measurement, rapid cycle testing, breakthrough series, and inter-organizational collaboration benefit quality and productivity. Letter grading.

**215B. Applied Methods for Improvement/Implementation Science. (4)** Lecture, four hours. Planning and management of improvement programs in current work of students and future roles as change agents and leaders of healthcare systems. Training in skills and analytic methods for applying improvement science in clinical settings and health systems. Completion of improvement projects that demonstrate student competence in improvement science. Emphasis on case studies and applications so students gain skills in improvement project design and implementation. Analyses of cases, individual improvement projects, and class discussions to allow students to apply this knowledge to organizational examples. Letter grading.

**216. Special Topics in Health Services: Quality Assessment and Assurance. (4)** Seminar, four hours. Fundamental issues in quality assessment, quality assurance, and measurement of health status. S/U or letter grading.

**217. Evidence-Based Medicine and Organizational Change. (4)** Lecture, three hours. Requisites: courses 200A, 200B, M422. Designed for graduate students in public health or other health sciences disciplines. Participation of students in critical review and discussion of selected papers dealing with course topics, including clinical trials, meta-analysis, small and large area variations in care, and development and implementation of clinical guidelines. Emphasis on implications for health policy. Letter grading.

**C221. Tobacco: Prevention, Use, and Public Policy. (4)** Lecture, four hours. Designed for juniors/seniors and graduate students. Study of tobacco use and its health consequences, including interplay of historical, biological, sociocultural, political, and economic forces with knowledge, attitudes, and behavior choices of individuals. Introduction to prevention interventions, cessation interventions, anti-tobacco efforts in U.S., and international trends in tobacco use. Concurrently scheduled with course C121. Letter grading.

**225A-225B. Health Services Research Design. (6-6)** Lecture, four hours; laboratory, two hours. Limited to departmental MS and PhD students. Letter grading.

**225A.** Introduction to scope of health services research, conceptualization and design of health services research, choice and assessment of measures for such research, and methods for studies involving direct data collection. Broad overview to conducting health services research, alternative research paradigms, building conceptual models of what students are trying to study, designing and testing measures, and direct data collection issues of survey and questionnaire design, sampling, community engagement, and research ethics. **225B.** Requisite: course 225A. Development of conceptual models for health services research, identification and use of secondary data sources, study design, and its operationalization through regression models.

**225C. Research Methods for Improvement/Implementation Science. (4)** Lecture, four hours. Enforced requisite: course 215A or 215B. Design and implementation of studies of dynamic interventions, including improvement initiatives and pragmatic clinical trials. Provides skills in research methods for improvement and implementation studies in clinical settings (including community-based settings) and health systems. Completion of improvement research projects that demonstrate student competence in design and implementation. Fundamentals in research design and methods for conducting rigorous inferential evaluation in real world of implementation science, with emphasis on methods for generalizing results of improvement and implementation studies involving dynamic testing. Emphasis on case studies and applications so students gain skills in design and implementation. Letter grading.

**226A-226B. Readings in Health Services Research. (2-2)** Seminar, two hours. Limited to departmental MS and PhD students. Introduction to research literature in health services research, including literature on key

conceptual models, classic empirical studies, and current research illustrating cutting-edge methods or findings. In Progress (226A) and S/U (226B) grading.

**227A. Special Topics in Health Services: Seminar Series. (2 to 4)** (Formerly numbered 227B.) Seminar, two hours. Designed for doctoral students. Presentation of proposed or ongoing research projects by faculty members and students, with discussion to determine relevant methodological and policy issues, as well as to offer constructive criticism. Letter grading.

**227B. Special Topics in Health Services: Current Research Issues. (2)** (Formerly numbered 227A.) Seminar, two hours. Designed for doctoral students. Review of articles in health services journals nominated as best published during previous year. Analysis of articles to determine contribution to theory, methods, and/or implications for management or policy in health services organizations or health services as field. May be repeated for credit with topic change. Letter grading.

**M228. Introduction to Mixed Methods Research. (4)** (Same as Community Health Sciences M228.) Seminar, three hours; discussion, one hour. Limited to graduate students. Highly recommended: courses 225A and 225B, or completion of coursework in basic research design and methods. Introduction to mixed methods research, with emphasis on its application to public health research. Equips students with skills to critique mixed method research designs and to design mixed methods research investigation for health issue of interest. Study of different mixed methods research designs commonly used in public health and health services research, including feasibility studies, convergent parallel design, sequential mixed methods, and multiphase studies. Use of combination of didactic and applied techniques. S/U or letter grading.

**230A-230B. Health Economics: Low- and Middle-Income Countries' Perspectives. (2-2)** Seminar, two hours; discussion, two hours. Development of student thinking on how microeconomic theories help us understand determinants of health and behaviors of consumers and providers in health sector. Offers critical framework in evaluating efficiency of health systems in improving health of populations. Health economics field provides public policy tools to evaluate distributional benefits/penalties of policies such as sin taxes, and to assess extent market failures motivate role of governments in financing, organization, and delivery of health care. Emphasis on low- and middle-income country (LMIC) settings. In Progress (230A) and S/U or letter (230B) grading.

**231. History of Public Health. (4)** Discussion, three hours. Designed for doctoral students. Emphasis on topics which illuminate current issues in public health policy. Discussion of historical perspectives on health-care providers, healthcare institutions, healthcare reform movements, public health activities, childbirth, and AIDS. S/U or letter grading.

**232. Leadership Capstone Seminar. (4)** Seminar, four hours. Preparation: completion of summer internship requirement. Designed for graduate students completing their master's training in health management and health policy. Examination of leaders and leadership in healthcare and other organizations to provide broad introduction to literature on skills, behaviors, and characteristics of organizational leaders. Relationship and importance of vision, values, change, strategy, and communication. Identification of characteristics of successful leaders. Students evaluate their own leadership style and identify opportunities to further develop their leadership abilities. Letter grading.

**M233. Health Policy Analysis. (4)** (Same as Community Health Sciences M252.) Lecture, three hours. Requisites: courses 200A, M236, M287. Conceptual and procedural tools for analysis of health policy, emphasizing role of analysis during various phases of lifecycle of public policy. Letter grading.

**234. Health Services Organization and Management Theory. (4)** Lecture, two hours; discussion, two hours. Preparation: two upper-division social sciences courses. Application of contemporary organization and management theory to systems that provide personal health-care services. Environmental characteristics, missions/goals, structure, and processes of health services organizations. S/U or letter grading.

**235. Law, Social Change, and Health Service Policy. (4)** Lecture, four hours. Preparation: two upper-division political science or sociology courses. Requisite: course 100. Legal issues affecting policy formulation for environmental, preventive, and curative health service programs. S/U or letter grading.

**M236. Microeconomic Theory of Health Sector. (4)** (Same as Public Policy M268.) Lecture, four hours; discussion, two hours. Preparation: intermediate microeconomics. Microeconomic aspects of health care system, including health manpower substitution, choice of efficient modes of treatment, market efficiency, and competition. Letter grading.

**237C. Issues in Health Services Methodologies. (6)** Lecture, four hours; discussion, two hours. Requisites: courses 237A, 237B, Biostatistics 200A, 200B (or 201). Designed for doctoral students. Intended to train students in statistical and economic methods used in health services research, with focus on practical application of advanced regression models. Letter grading.

**239A. Special Topics in Health Services: Introduction to Decision Analysis and Cost-Effectiveness Analysis. (4)** Lecture, four hours. Requisites: courses 200A and 200B, or M233. Techniques to assess broad spectrum of medical technologies: therapeutic and diagnostic tests and procedures, clinical practice patterns, public health interventions, and pharmaceuticals. Demonstration of how decision analysis provides basic framework for conducting various economic evaluations. May be repeated for credit with topic change. Letter grading.

**239B. Special Topics in Health Services: Advanced Topics in Decision Analysis and Cost-Effectiveness Analysis. (4)** Lecture, four hours. Requisite: course 239A. How to conduct uncertainty analyses, understand methods used to construct quality-adjusted life years (QALYs), conduct Markov analyses, critically analyze large-scale published cost-effectiveness analyses (CEAs), effectively present strengths and limitations of published CEAs to peers, and use advanced features of TreeAge software to construct and analyze CEA models, including Markov models. May be repeated for credit with topic change. Letter grading.

**240. Global Health Institutions, Policies, and Systems. (4)** Lecture, four hours. Introduction to global health, from health policy and management perspective. Examination of institutions, from global to local, through lenses including governance, financing, history, and agenda-setting. Discussion of major topics in global health systems, such as human resources and health IT. Through series of short assignments, students' work culminates in final presentation that examines these many dimensions of single topic in global health. S/U or letter grading.

**241. Economics of Health Policy. (4)** Lecture, four hours. Requisite: course M236 or doctoral standing. Second-level health economics course, with emphasis on health policy applications, designed to provide more nuanced view of health economics than does course M236. Provides more training for master's students interested in policy, as well as material and insights for doctoral students who may find it useful in thinking about dissertation topics. Emphasis on special characteristics of health and healthcare and how these characteristics can result in market failure and various policy tools that can be used to deal with these failures. Because U.S. is only developed country that has traditionally relied on private insurance, course goes into more detail on that topic. Alternative conceptual models to traditional market one, discussion of proposed U.S. reforms, and examination of systems in selected other countries. Letter grading.

**M242. Determinants of Health. (4)** (Same as Community Health Sciences M232.) Lecture, three hours; discussion, one hour. Designed for graduate students. Critical analysis of models for what determines health and evidence for social, economic, environmental, genetic, health system, and other factors that influence health of populations and defined subgroups. Letter grading.

**243. Population Health Approach to Autism Spectrum Disorder. (4)** Lecture, three hours. Overview of impact that Autism Spectrum Disorder has on individuals, families, and communities, including access to

services, ongoing therapies, and adult vocational and residential placement. Covers opportunities for research and national policy. S/U or letter grading.

**244. Telehealth and Technology. (4)** Lecture, four hours. Preparation: working knowledge of Excel, PowerPoint, Internet, and smartphone devices. Connects multiple aspects of Telehealth and how to deploy them in health-care operations setting. Exploration of new devices/technologies, connectivity in wireless world, delivery modalities, and user experience/interface (UX/UI) design. Study teaches ways to apply new technology to facilitate efficient health-care business operations. Students learn how to implement Telehealth interventions, understand its challenges, and optimize data visualization for decision making. S/U or letter grading.

**M248. Primary Health Care. (4)** (Same as Community Health Sciences M248.) Lecture, four hours. Strongly recommended prerequisite: Public Health 200A, 200B. Recommended prerequisite: course 240 or Community Health Sciences 200. Primary Health care (PHC) is considered to be foundation of all health systems and should be able to resolve 80 percent or more of population's health problems. Overview of organization, structure, and functions of primary health care with emphasis on low- and middle-income country settings. Study of history and origins of PHC, roles and functions of PHC in health systems, different organizational and managerial approaches to organizing and delivering health care within PHC framework, and tools for measuring how well PHC programs and services are functioning. Review and critical analysis of evidence-based on PHC effectiveness and impact and present detailed case studies of PHC programs in diverse settings around world. Letter grading.

**249. Advanced Research Topics in Health Policy and Management. (2 to 4)** Seminar, to be arranged. Limited to Public Health graduate students. Seminars may be organized in special topics. Advanced study and analysis of current topics in health policy and management. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit with topic change. S/U or letter grading.

**M249Q. Editorial Board Apprenticeship. (2)** (Same as Psychiatry M210.) Seminar, two hours. Designed for postdoctoral fellows and advanced PhD students. Participation in peer review process for academic journal, *Health Psychology*, with consideration of interface between behavioral science, health, and medicine. Reading and discussion of submissions and advising of editor on suitability for full review. S/U or letter grading.

**249S. Special Topics in Health Service: Introduction to Implementation Science. (4)** Seminar, four hours. Preparation: good grasp of social science research methods. Designed to provide basic understanding of science of implementing innovations and evidence-based approaches in real-world practice settings. Includes exposure to terminology, conceptual frameworks, research designs and methods, and their appropriate applications across various practice settings and populations. Interactive class discussion and guest lectures by experts in implementation science. S/U or letter grading.

**251. Project Management for Health-Care Organizations. (4)** Lecture, four hours. Exploration of opportunities for using project management, change management, and process improvement techniques to enhance execution of project and improvement initiatives within health-care organizations. Letter grading.

**M252. Medicare Reform. (4)** (Same as Public Policy M267.) Lecture, three hours; outside study, nine hours. Designed for graduate students. Analytical and managerial skills learned earlier to be used to analyze problems with existing Medicare program and to develop specific options for reforming features of program to accommodate coming pressures generated by retirement of baby-boom generation. Letter grading.

**253. Transforming Health System in U.S.: Where Have We Been, Where Are We Going, and How Can We Get There? (4)** Seminar, four hours. Systematic examination of requirements and opportunities to transform U.S. health care system to produce substantially better results and for significantly lower ex-

penditures. Inquiry assesses preconditions and infrastructure required to support transformation, and leading efforts underway in U.S. and globally. Students gain deeper understanding of current context, exposure to promising tools and approaches, and increased knowledge of key drivers of transformation. S/U or letter grading.

**M255. Obesity, Physical Activity, and Nutrition Seminar. (4)** (Same as Community Health Sciences M234.) Seminar, three hours; outside study, one hour. Designed for graduate students. Multidisciplinary introduction at graduate level to epidemiology, physiology, and current state of preventive and therapeutic interventions for obesity in adults and children, including public health policy approaches to healthy nutrition and physical activity promotion. S/U or letter grading.

**M259. Smoking, Drinking, Shooting, and Driving: Understanding Public Health Policy in U.S. (4)** (Same as Community Health Sciences M259.) Lecture, two hours; discussion, two hours. Recommended prerequisite: course 286. Overview of essential theories regarding development, implementation, and impact of public health policies in U.S. with emphasis on state and local governments. Students develop skills in public health policy research (laws, regulations, statutes, ordinances) and engage in critically analyzing evidence for different approaches currently used to address some of main causes of death and disability in U.S. including tobacco, alcohol, firearms, food and nutrition, and motor vehicle safety. Readings, case studies, exploration of public use data, group discussions, and directed individual research. Students engage in discussion and debate regarding contemporary challenges and emerging trends. S/U or letter grading.

**260. World Health. (4)** Lecture, two hours. Designed for graduate students. Overview of world health, with emphasis on healthcare outside U.S. Key areas include burden of infectious diseases, health economics, and impact of healthcare policy on healthcare delivery. Letter grading.

**265. Challenges in Clinical Health Services Research. (4)** Lecture, four hours. Requisites: courses 200A, 200B. Designed to prepare students for challenges involved in conducting health services research on clinical topics and populations. Topics include formulating appropriate questions, identifying sources, mechanism of conducting field studies, identifying funding sources, writing grants, and publishing findings. S/U or letter grading.

**266A-266B. Community-Based Participatory Health Research: Methods and Applications. (4-4)** Lecture, one hour; discussion, one hour; fieldwork, two hours. Limited to clinical scholars fellows. Mentoring of field experiences with introduction to critical issues in conducting research in community settings. Review of assignments, interventions, and evaluation designs for community settings and discussion of practical issues in partnering with communities. Letter grading.

**M269. Healthcare Policy and Finance. (4)** (Same as Public Policy M269.) Seminar, three hours; outside study, nine hours. Exploration of demand for health insurance, policies for public insurance (Medicaid and Medicare), uninsured, and health insurance reform. Examination of effects of managed care on health and costs, consumer protection movement, and rise of competitive healthcare markets. Letter grading.

**M274. Health Status and Health Behaviors of Racial and Ethnic Minority Populations. (4)** (Same as Psychology M274.) Lecture, two hours; discussion, one hour. Limited to graduate students. Overview of physical and mental health behaviors and status of major racial/ethnic groups in U.S. Where appropriate, discussion of international issues as well. S/U or letter grading.

**280. Health Reform: Policy, Research, and Implementation Issues. (4)** Seminar, three hours. Requisites: courses 200A, 200B. Limited to second-year MPH and doctoral students. Analysis of components of major federal healthcare reform legislative initiative to identify important policy, research, and implementation issues. Application of principles of stakeholder analysis to understand how and why this legislation was constructed and how it passed Congress. Conducting of policy analyses of selected components

through completion of written assignments. Examination of respective roles of federal and state government in implementing and administering various components. Identification of significant implementation and administrative challenges at federal and state levels and development of possible strategies for addressing those challenges. Letter grading.

**281. Policy Making amid Health, Economic, and Social Crises: Pandemics and Beyond. (4)** Seminar, four hours. Preparation: one year of graduate coursework. In past two decades there have been four respiratory pandemics. While COVID-19 led to most devastating health and economic consequences, threat it presented is not unique. Climate change and environmental degradation, increasing encroachment on animal habitats are together increasing rate of emerging disease outbreaks. In nearly every case, pandemics have highlighted and been worsened by underlying health, social, and economic inequalities. Focus on what can be done to address underlying inequalities, as well as what can be done to improve response to simultaneous health, economic, and social crises. Students learn comparative policy methods, analyze area of particular interest, and study what approaches states and countries have taken in the past and impact of these approaches. S/U or letter grading.

**284. Social Policy and Health: Case for Gender. (4)** Lecture, four hours. Preparation: completion of core MPH curriculum. Masters students in other degree programs should have completed their core requirements. Doctoral students should have completed at least one year of doctoral coursework. Focus on relationships among gender inequality, restrictive gender norms, and health. Examination of evidence pulled together by World Health Organization (WHO) Commission on social determinants of health and others on how gender inequality and restrictive gender norms impact health across sexes and genders. Examination of evidence on extent of gender inequality in other social determinants of health globally including education, work, and poverty. Focus on policies to improve health. Discussion of examples of policy and programmatic approaches to inequalities in education, work, family, and other spheres. Students have opportunity to dive deeper into area of choice. S/U or letter grading.

**M285. Ethical Theory and Applications in Public Health. (4)** (Same as Community Health Sciences M249L.) Lecture, four hours. Requisites: courses 200A, 200B. Introduction to ethical theories and critical ethical issues pertaining to healthcare policy and healthcare management. Research, writing, and discussion on variety of topics related to health and human rights to enhance professionalism, leadership, and systems thinking and improve student sensitivity to needs of patients, coworkers, and fiduciary shareholders. How ethics are foundation of leadership. Letter grading.

**286. American Political Institutions and Health Policy. (4)** Lecture, three hours; discussion, one hour. To effectively participate in policy process as analyst, policymaker, advocate, or citizen, it is necessary to understand institutional and political context within which policy is made. Introduction to federal and state policy-making, with focus on health policy. Discussion of federalism and constitutionalism. Examination of stakeholders, public, interest groups, and nature of issue space for health policy. Structure and process of political institutions at federal level, Congress, President, executive agencies, courts, and administrative law. State responsibilities and federal/state relations. How analysis enters policy process with examination of roles of federal analytic agencies and private research and advocacy groups. Letter grading.

**M287. Politics of Health Policy. (4)** (Same as Community Health Sciences M287 and Public Policy M266.) Lecture, three hours; discussion, one hour. Examination of politics of health policy process through analysis of case studies such as environmental protection, pandemic preparedness and response, preventive health services for women, and racial and income inequality and health. Examination of framework for assessing evidence-based policy making and ef-



fects of political structure and current political divisions, including efforts such as to repeal and dismantle Affordable Care Act. Letter grading.

**288. Role and Impact of Technology on Health Services.** (4) Lecture, four hours. Examination of role and impact of technology on health services in the U.S. from point of view of system itself. Exploration of various types of technologies for their policy, economic, and organizational impact. S/U or letter grading.

**289. Healthcare Disparities.** (4) Seminar, three hours. Limited to graduate students. Exploration of what constitutes and explains disparity in healthcare. Emphasis on understanding history of disparities in U.S. to understand current state of disparities, and on evaluating effectiveness of ongoing strategies to eliminate them, such as increasing insurance coverage and delivery of culturally competent healthcare. Examination of sociological models that explain disparities in healthcare and evaluation and expansion on these models. Letter grading.

**M290. Evolving Paradigms of Prevention: Interventions in Early Childhood.** (4) (Same as Community Health Sciences M237.) Seminar, three hours; fieldwork, one hour. Designed for graduate students. Introduction to use of early childhood interventions as means of preventing adverse health and developmental outcomes. Concepts of developmental vulnerability, approaches to assessment, models of service delivery, evaluation and cost-benefit issues, funding, and other policy issues. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Field Studies in Health Services.** (4) Fieldwork, to be arranged. Preparation: summer internship. Required of all graduating MPH students. Continuation of summer placement in organizations for delivery, financing, and evaluation of health services. Preparation of consulting report based on organizational problem or project from summer internship. Exposure to selected professional development issues. Letter grading.

**401. Public Health Informatics.** (4) Lecture, three hours. Preparation: general familiarity and understanding of basic information technologies. Recommended requisite: course 251. Introduction to field of public health informatics and examination of impact of information technology on practice of public health. Entire process, from systems conceptualization and design to project planning and development to system implementation and use. Letter grading.

**403. Healthcare Financial Accounting.** (4) Lecture, four hours. Introduction to basic concepts of accounting, providing basis for understanding of language of business. Letter grading.

**M411. Issues in Cancer Prevention and Control.** (4) (Same as Community Health Sciences M411.) Lecture, four hours. Designed for juniors/seniors and graduate students. Introduction to causes and characteristics of cancer epidemic, cancer control goals for nation, and interventions designed to encourage smoking cessation/prevention, cancer screening, and other dietary, psychosocial, and lifestyle changes. Letter grading.

**415. Organizational Analysis.** (4) Seminar, four hours. Introduction to important questions and perspectives relevant to understanding organizational behavior and change in healthcare and public health environments. Active paradigms in organizational theory, particularly perspectives important for understanding delivery system change. Examination of empirical research to clarify how important organizational constructs have been operationalized and to highlight methodology-related challenges of studying organizations in healthcare/public health. Letter grading.

**M420. Children with Special Healthcare Needs: Systems Perspective.** (4) (Same as Community Health Sciences M420 and Social Welfare M290I.) Lecture, three hours; fieldwork, one hour. Examination and evaluation of principles, policies, programs, and prac-

tices that have evolved to identify, assess, and meet special needs of infants, children, and adolescents with developmental disabilities or chronic illness and their families. Letter grading.

**M422. Practices of Evaluation in Health Services: Theory and Methodology.** (4) (Same as Sociology M402.) Lecture, four hours. Requisites: courses 200A, 200B. Introduction to evaluation of health services programs and policies. Exposure to basic theoretical concepts and specific evaluation methodologies and designs. Letter grading.

**423. Advanced Evaluation Theory and Methods for Health Services.** (4) Lecture, four hours. Designed for departmental MS and PhD students. Familiarity with current theoretical concepts in evaluation to gain skills in integrating theory into program implementation and evaluation design. Development of student ability to apply various evaluation methodologies most appropriate to variety of settings both within and outside health care and public health, and consideration of advantages and disadvantages of potential design. Examination of shift in field of evaluation over past decade from principal focus on program efficacy (i.e., internal validity) to more balanced approach considering efficacy in content of feasibility, reach, cost, and sustainability (i.e., external validity) and evaluation designs that have emerged (e.g., pragmatic and adaptive trials). Letter grading.

**424. Proposal Writing for Health Services Research.** (4) Seminar, four hours. Requisites: courses 225A, 225B. Designed for MS and PhD students. Introduction to conceptualizing and writing fundable research proposals. How review process—culture, structure, procedures, timetables, and outcomes—operates in different research environments. Application of grant writing principles and skills to develop research proposals following National Institutes of Health guidelines. S/U or letter grading.

**M428. Child and Family Health Program Community Leadership Seminar.** (2) (Same as Community Health Sciences M428.) Seminar, two hours. Designed for graduate students. Examination of characteristics of community-based organizations (CBOs) and role of leadership in decision-making process involved in major issues facing maternal and child health in Los Angeles County. Focus on specific leadership competencies that are or should be employed by organizations effective in shaping maternal and child health programs and policies (or any population-level policies and programs). Leaders from CBOs in Los Angeles meet with students, comment on their practicum experiences, and underscore community leadership concepts demonstrated by those CBOs. S/U or letter grading.

**430. Healthcare Innovations and E-Health.** (4) Lecture, four hours. Introduction of new technologies in healthcare e-commerce/Internet/new media area, with emphasis on general background, review of applications, and discussion of organizational and managerial issues dealing with successful use and implementation of technologies. S/U or letter grading.

**431. Organizational Behavior and Human Resources in Healthcare Organizations.** (4) Lecture, four hours. Managerial skills and behaviors applied to components of organizations at several levels: individual, interpersonal, group, intergroup, and system. Core human resources skills required by managers. Unique features of health services organizations stressed as applications are presented. Letter grading.

**432. Management of Healthcare Delivery Organizations.** (4) Seminar, four hours. Preparation: summer internship, work experience in health services. Readings, case analyses, and term papers concerned with operations, performance management, and service quality of healthcare delivery institutions. S/U or letter grading.

**433. Health Care Strategy.** (4) Lecture, three hours; discussion, one hour. Enforced requisites: courses 200A, 200B, 234, M236, Management 403. Conceptual, analytical, and technical aspects of policy and strategy formulation in health services organizations. Special attention to structure and dynamics of competitive markets, corporate-level strategic planning and marketing, managerial ethics and values, organizational creativity/innovation. Letter grading.

**M434. Building Advocacy Skills: Reproductive Health Focus.** (4) (Same as Community Health Sciences M430.) Seminar, three hours. Recommended requisite: one prior health policy course such as Community Health Sciences 247 or Health Policy 235. Designed for School of Public Health graduate and doctoral students. Skills-building course to develop competency in assessing, developing, and implementing advocacy strategies for reproductive health initiatives. Introduction to legislative and community advocacy initiatives and to policymaking process, including policy analysis and development of resources necessary for legislative advocacy. Identification of advocacy goals and objectives, development of advocacy plan, coalition building, organizational capacity building, media relations, and message development for various audiences. Students learn about range of former and current reproductive health advocacy campaigns. Letter grading.

**435. Innovations and Current Trends in Ambulatory Care.** (4) Lecture, three hours. Requisites: courses 200A, 200B. Examination of U.S. ambulatory care delivery system, with focus on more recent trends that are highlighted under Patient Protection and Affordable Care Act of 2010. Structure of ambulatory care service delivery system, infrastructure challenges, financing and quality of care, role of healthcare reform in shaping future of ambulatory care, concepts of chronic care/disease management, medical home, and accountable care organizations, measurement, implementation, and impact of these models. Letter grading.

**436. Healthcare Financial Management.** (4) Lecture, four hours. Requisites: courses 234, 403. Designed to prepare students for financial management responsibilities in health care. Practical approach for identifying, analyzing, and making recommendations regarding fiscal issues facing health care organizations. Topics include revenue capture and cost classifications, break-even analysis under diverse payer scenarios, financial statement analytics, operational and capital budgeting, variance analysis, forecasting and pro forma, sensitivity analysis, FTE calculations, and utilization of financial dashboards. S/U or letter grading.

**437. Legal Environment of Health Services Management.** (2) Lecture, two hours. Requisites: courses 200A, 200B. General survey of legal aspects of health services management, including governance, agency, informed consent, medical malpractice, and contracts. S/U or letter grading.

**438. Issues and Problems of Local Health Administration.** (4) Lecture, three hours. Preparation: one health services course. Requisites: course 100, Epidemiology 100. Overview of administrative issues currently faced by local health departments, including providing public health programs during fiscal constraint, quality improvement, interagency relationships and partnerships, and political and public interactions. Letter grading.

**439. Data Software for Public Health Professionals.** (4) Lecture, two hours; activity, one hour. Development of software skills around data analytics (e.g., Excel), including use of formulas and functions, formatting and manipulating datasets, developing visualizations including charts and tables, using lookup and database functions, and implementing basic analytic methods. Letter grading.

**440A. Healthcare Information Systems and Technology.** (4) Lecture, four hours. Preparation: completion of summer internship. Provides strong foundation in health information technology (HIT) for those working in healthcare, with emphasis on development of knowledge and skill to plan, manage, and implement HIT systems in healthcare delivery organizations with clinical and business partners and evolving HIT spaces. Background and evolution of HIT; how it is planned, implemented, and managed; and how it can be productively used by healthcare delivery organizations, external research organizations, regulatory organizations, providers, and patients/consumers. Fundamentals of technology, electronic medical records (EMR), electronic health records (EHR), personal

health records (PHR), meaningful use, interoperability, and health information exchanges (HIE). Letter grading.

**440B. Health Information Systems: Organization and Management. (4)** Lecture, two hours; laboratory, three hours. Requisite: course 440A. Health and administrative research using clinical records. Principles of planning for routine and special studies. Individual investigation in methods of obtaining and processing data to meet needs of programs in institution and agency. Introduction to principles of medical auditing; analysis of medical and health services. S/U or letter grading.

**441. Data Analytics: Identifying, Collecting, and Analyzing Data in Health Care. (4)** Lecture, three hours. Requisite: course 439 or proof of waiver examination. Exploration of data sources and uses in health care, e.g., electronic medical records, social media, wireless biosensors, system and facility data. Review of hands-on techniques including data management, development of indexes and metrics, choosing and implementing analysis methods and visualizations. Discussion of role of data collection and processing within health care system. Letter grading.

**442. Integrated Health Systems. (4)** Lecture, four hours. Requisites: courses 200A, 200B. Position of integrated health systems in U.S. and how they function. Introduction to important technical and organizational developments. Exploration of changes in organization and delivery of healthcare as result of growth of integrated health systems. Letter grading.

**445. Healthcare Marketing. (2 to 4)** Lecture, two hours. Requisites: courses 200A, 200B. Introduction to concepts of healthcare marketing. Exploration of principles of market-driven decision-making process. Examination of development of key elements in annual marketing process and of consumer, competitor, company analysis, market segmentation, and target markets. Letter grading.

**446. Health-Care Operations Management. (4)** Lecture, four hours. Health-care managers are charged with reducing costs and improving financial outcomes in their organizations while simultaneously improving patient service and satisfaction. Focus on operations improvement and how health-care organizations can get things done. Review of integrated, systematic approach and wide variety of operations improvement tools. Designed to further prepare students for entry into managerial positions in health-care organizations by making them aware of importance of operations techniques and strategies at all career levels, and providing them with sufficient knowledge of health-care operations so they can provide departmental input to organization's leadership. S/U or letter grading.

**M449A-M449B. Child Health, Programs, and Policies. (4-4)** (Same as Community Health Sciences M436A-M436B.) Lecture, four hours. Course M449A is requisite to M449B. Examination of history of child health policy trends and determinants of health, structure, and function of health service system; needs, programs, and policies affecting especially at-risk populations. Letter grading.

**450. Healthcare Financial Applications. (2)** Lecture, two hours. Requisites: courses 200A, 200B. Study of healthcare financial management, including variables of cost of funds, availability of physicians to provide necessary patients, efficiency of operations, and legal constraints. Letter grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. No more than 8 units may be applied toward master's degree minimum total course requirement; may not be applied toward minimum graduate course requirement. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Limited to graduate students. Individual guided studies under direct faculty supervision. Only 4 units may be applied toward MPH and MS minimum total course requirement. May be repeated for credit. S/U or letter grading.

**597. Preparation for Master's Comprehensive or Doctoral Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. Limited to graduate students. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

**598. Master's Thesis Research. (2 to 8)** Tutorial, to be arranged. Only 4 units may be applied toward MPH and MS minimum total course requirement; may not be applied toward minimum graduate course requirement. May be repeated for credit. S/U grading.

**599. Doctoral Dissertation Research. (2 to 12)** Tutorial, to be arranged. May not be applied toward any degree course requirements. May be repeated for credit. S/U grading.

## HISTORY

College of Letters and Science

6265 Bunche Hall  
Box 951473  
Los Angeles, CA 90095-1473

### History

310-825-4601

Kevin B. Terraciano, PhD, *Chair*

## Faculty Roster

### Professors

Andrew Apter, PhD  
Sebouh D. Aslanian, PhD (*Richard Hovannisian Professor of Modern Armenian History*)  
Eric R. Avila, PhD (*Waldo W. Neikirk Term Professor*)  
Peter Baldwin, PhD  
Stephen A. Bell, PhD  
Joel T. Braslow, MD, PhD, *in Residence*  
Soraya de Chadarevian, PhD  
Robin L.H. Derby, PhD (*Dr. E. Bradford Burns Professor of Latin American Studies*)  
Caroline C. Ford, PhD  
James L. Gelvin, PhD  
Nile S. Green, PhD (*Ibn Khaldun Endowed Professor of World History*)  
F. Tobias Higbie, PhD  
Robin D.G. Kelley, PhD (*Gary B. Nash Endowed Professor of U.S. History*)  
Vinay Lal, PhD  
Kelly A. Lytle Hernández, PhD (*Thomas E. Lifka Professor of History*)  
Valerie J. Matsumoto, PhD (*George and Sakaye Aratani Professor of Japanese American Incarceration, Redress, and Community*)  
Michael Meranze, PhD  
David N. Myers, PhD (*Sady and Ludwig Kahn Professor of Jewish History*)  
Anthony R. Pagden, PhD  
H. Glenn Penny, PhD (*Henry J. Bruman Professor of German History*)  
Carla Gardina Pestana, PhD (*Joyce Oldham Appleby Endowed Professor of America in the World*)  
David D. Phillips, PhD  
Theodore M. Porter, PhD  
Sarah Abrevaya Stein, PhD (*Viterbi Family Endowed Professor of Mediterranean Jewish Studies*)  
Brenda Stevenson, PhD (*Nickoll Family Endowed Professor of History*)

Sanjay Subrahmanyam, PhD (*Irving and Jean Stone Professor*)

William R. Summerhill, PhD

Kevin B. Terraciano, PhD

Stefania Tutino, PhD (*Peter Reill Professor of European History, 1450 to Modern*)

Richard von Glahn, PhD

R. Bin Wong, PhD

Gregory D. Woolf, PhD (*Ronald J. Mellor Professor of Ancient History*)

David K. Yoo, PhD

### Professors Emeriti

Edward A. Alpers, PhD

Francis R. Anderson, BA

Stephen A. Aron, PhD (*Robert N. Burr Endowed History Department Professor Emeritus*)

Ivan T. Berend, PhD

Kathryn Bernhardt, PhD

Ruth H. Bloch, PhD

Robert P. Brenner, PhD

Giorgio Buccellati, PhD

Claus-Peter Clasen, PhD

Robert Dallek, PhD

Ellen C. DuBois, PhD

John B. Duncan, PhD

Christopher Ehret, PhD

Benjamin A. Elman, PhD

Robert G. Frank, Jr., PhD

Stephen P. Frank, PhD

Saul P. Friedländer, PhD (*1939 Club Professor Emeritus*)

Frank O. Geatell, PhD

Patrick Gary, PhD

J. Arch Getty, PhD

Carlo Ginzburg, Laurea in lettere (*Franklin D. Murphy Professor Emeritus of Italian Renaissance Studies*)

Robert A. Hill, MSc

Thomas S. Hines, PhD

Richard G. Hovannisian, PhD (*Armenian Educational Foundation Professor Emeritus of Modern Armenian History*)

Daniel W. Howe, PhD

Philip C. Huang, PhD

Lynn A. Hunt, PhD (*Eugen Weber Professor Emerita of Modern European History*)

Margaret C. Jacob, PhD

Russell Jacoby, PhD

Nikki Keddie, PhD

Naomi R. Lamoreaux, PhD

John H. Laslett, DPhil

Peter J. Loewenberg, PhD

Afaf Marsot, DPhil

Lauro R. Martines, PhD

Ronald J. Mellor, PhD

Michael G. Morony, PhD

Fred G. Notehelfer, PhD

Patricia O'Brien, PhD

Herman Ooms, PhD

Merrick Posnansky, PhD

Geoffrey Robinson, PhD

Teófilo F. Ruiz, PhD (*Robert and Dorothy Wellman Professor Emeritus of Medieval History*)

David Sabean, PhD (*Henry J. Bruman Professor Emeritus of German History*)

Michael Salman, PhD

Debora L. Silverman, PhD (*Presidential Professor Emerita of Modern European History*)

Geoffrey W. Symcox, PhD

Mary Terrall, PhD

Albion M. Urdank, PhD

Joan Waugh, PhD

Scott L. Waugh, PhD

Richard Weiss, PhD

James W. Wilkie, PhD

Matthew Norton Wise, PhD

William H. Worger, PhD

Mary A. Yeager, PhD

### Associate Professors

Scot D. Brown, PhD

Jessica L. Goldberg, PhD

Andrea S. Goldman, PhD

Katsuya Hirano, PhD

Peter J. Hudson, PhD

Ghislaine E. Lydon, PhD

Benjamin L. Madley, PhD

Katherine M. Marino, PhD

William Marotti, PhD

Kyle T. Mays, PhD

Muriel C. McClendon, PhD

Minayo A. Nasiali, PhD

Kathryn Norberg, PhD

Peter J. Stacey, PhD

Sharon J. Traweek, PhD

Craig B. Yirush, PhD

### Assistant Professors

Miloš Jovanović, PhD

Kevin Y. Kim, PhD

Choon Hwee Koh, PhD

Fernando Pérez-Montesinos, PhD

Bharat J. Venkat, PhD

Hollian Wint, PhD

### Senior Lecturer SOE

S. Scott Bartchy, PhD, *Emeritus*

### Senior Lecturers

Mary F. Corey, PhD

John S. Langdon, PhD

### Adjunct Professor

Amir Alexander, PhD

### Adjunct Associate Professor

Tawny Paul, PhD

### Adjunct Assistant Professor

Jared G. McBride, PhD

## Overview

History is the study of the past of our own society and how it emerged out of the traditions that produced it. At the same time, self-knowledge for students of history comes not only from self-discovery, but from a comparison of their own tradition and experience with those of others. It is only by studying the history of other civilizations and cultures that we can hope to gain perspective on our own.

The course offerings in the Department of History are designed to bring about an understanding of the forces that have shaped the many cultures of this country and the world. UCLA has one of the largest, most distinguished, and most diverse history faculties in

the country. Its main emphasis is on the many aspects of social history; but intellectual, cultural, and political history are also strongly represented.

## Career Prospects

The undergraduate History major is flexible and far-reaching. Leading to a Bachelor of Arts (BA) degree, it is excellent preparation for a wide variety of careers—law, teaching, business, the communications media, public services, and medicine.

The graduate program leads to the Doctor of Philosophy (PhD) degree in History (a master's degree may be earned in the process of completing PhD requirements). Traditionally, the Master of Arts (MA) and PhD in History have led to careers in high school, college, and university teaching. Increasingly, they are also being put to use in government service, international business, museum and archival work, and journalism.

## Undergraduate Policies

### Advanced Placement Credit in History

For entering first years, no course credit is granted for any AP examination.

## Undergraduate Major

### History BA

#### Capstone Major

The History major is a designated capstone major. Undergraduate students take a capstone seminar in which they demonstrate mastery of a specialized area of history and a critical understanding of current scholarly concerns, literature, and debate, then design and complete a research project using those primary sources and literature.

### Learning Outcomes

The History major has the following learning outcomes:

- Demonstrated appropriate mastery of a specialized area of history
- Demonstrated critical understanding of current scholarly concerns, literature, and debates
- Identification and analysis of primary sources
- Design and execution of a research project, drawing on primary sources and appropriate scholarly literature
- Demonstrated ability to organize and present a brief oral presentation about research

### Entry to the Major

#### Pre-major

While students are completing the lower-division preparation for the major courses, they may be classified as History pre-majors.

After completing the six courses with a minimum grade-point average of 2.0, students should petition to enter the major in one of the undergraduate counseling offices, 6284 or 6290 Bunche Hall.

### Transfer Students

Transfer applicants to the History major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one semester or two quarters of history of Western civilization or world history, one historical practice course, and three additional lower-division history courses.

Transfer credit for the pre-major courses is subject to department approval. Transfer students should consult with the undergraduate counselors before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Six lower-division history courses as follows: two history survey courses selected from History 1A, 1B, 1C, 2B, 2C, 3A, 3B, 3C, 3D, M4, 5, 8A, 8B, 8C, 9A, 9C, 9D, 9E, M10A, 10B, 11A, 11B, 12A, 12B, 12C, 13A, 13B, 13C, 14, 20, 21, or 22; one course selected from History 94, 96W, or 97A through 97O; three additional lower-division history courses (except History 19, 89, 89HC, 99).

### The Major

*Required:* At least 10 upper-division history courses, including (1) two courses in U.S. history, (2) two courses in non-Western history from the same area (i.e., Latin America, Asia, Near East, Africa), (3) two courses in European history or in history of science, (4) one course from 187A through C187R, and (5) one capstone seminar from the History 191 series.

The requirements for U.S., non-Western, and European history may be fulfilled with either upper or lower-division courses, but majors are required to take a minimum of 10 upper-division history courses.

One of the 16 courses for the preparation for the major and major must predominantly cover history before 1700 CE, selected from History 1A, 1B, 2C, 3A, 8A, 9A, 9C, 9D, M10A, 11A, 11B, 14, 20, 21, 102A, M103A through 105B, M106, 107A, 107B, 108A, 108B, M110A through 111B, 112A through 119D, 121A, 121B, 122A, 122B, 122C, 124A, 125D, M127A, 128A, 128B, 129A, 130, M133A, 135A, 136A, 157A, 157B, 162B, 164B, 166A, 167A, 167B, 168A, 169A, 170A, M170C, 172A, 172B, M173C, 174A, M174D, 176A, 176E, M182A, M182B, M185D, M185F, M185G, M185I, or M186A.

### Honors Program

The honors thesis must be completed in three terms, on the basis of work carried out in History 198A, 198B, and 198C.



## Policies

### Preparation for the Major

Each course must be taken for a letter grade.

### The Major

Each course must be taken for a letter grade.

There is no language requirement for the major; however, students wishing to enter the honors program or planning to do graduate work in history are urged to pursue language study early in their undergraduate careers.

### Honors Program

The honors program is designed for History majors who are interested in completing a year-long research project that culminates in an honors thesis. A 3.5 departmental grade-point average is required for admission. To graduate with departmental honors, students must have a cumulative or overall GPA of at least 3.0 in all University-level coursework and at least a 3.5 GPA in all coursework required for the major.

The honors thesis must be completed in three terms, on the basis of work carried out in History 198A, 198B, and 198C. Students must register their intention to undertake an honors thesis with the undergraduate affairs vice chair no later than spring quarter of their junior year.

When students register for honors, they must provide the undergraduate affairs vice chair with a two-paragraph description of their thesis project, which must be approved in writing by the faculty member who agrees to act as their adviser. The undergraduate affairs vice chair must also approve the proposed project in writing.

The faculty adviser is primarily responsible for guiding the thesis work to its completion and assigns grades for the honors courses after the thesis is complete. The honors thesis should be 40 to 60 pages in length and be based on primary source material. Determination of the level of honors awarded (no honors, honors, or highest honors) is made by the undergraduate affairs vice chair, acting in conjunction with the honors committee, at the end of the term in which the thesis is completed.

## Undergraduate Minors

### History Minor

The History minor introduces students to historical processes and institutions.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and file a petition in the Undergraduate office, 6284 Bunche Hall.

### The Minor

*Required Lower-Division Courses (10 units):* Any two lower-division history courses.

*Required Upper-Division Courses (20 units):* Any five upper-division history courses.

## Policies

At least three of the five courses must be taken in residence at UCLA.

A maximum of 4 units of special studies courses (199) approved by the adviser and a maximum of 4 units of capstone seminars (191) may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## History of Science, Technology, and Medicine Minor

The History of Science, Technology, and Medicine minor takes as its subject matter the ideas, practices, and people concerned with the knowledge of the natural and social world. Using the tools of historical analysis, it explores the development, significance, and impact of science, technology, and medicine around the world. The goal of the minor is to give undergraduates majoring in fields other than history the opportunity to pursue a rigorous program in the historical dimensions of science, technology, and medicine, and their place in society. Students will learn to think critically and write analytically about these subjects.

### Admission

To enter the minor, students must be in good academic standing (2.0 grade-point average), have completed 45 units and at least one lower-division course in the history of science or medicine for a letter grade, and file a petition with an adviser in the History Department undergraduate counseling offices, 6284 or 6290 Bunche Hall.

### The Minor

Students must take seven classes to satisfy the requirements for the minor. The lower-division requirement is designed to give the student a broad understanding (in time and space) of the historical development of science, technology, and medicine. The upper-division requirement allows students to choose from an array of more focused classes.

*Required Lower-Division Courses (10 units):* Two courses from History 2B, 3A through 3D.

*Required Upper-Division Courses (20 units):* Five courses on topics in history of science, technology, and medicine: History 179A, 179B, 179C, 180A, M180B, 180C, 187I, 191I.

Students are required to write at least one research paper on a topic in history of science, technology, or medicine. To this end, they must take at least one of the following: History 191I (capstone research seminar); History 199 (individual independent study approved by depart-

ment adviser); or an honors collegium seminar with a required research paper.

## Policies

History 191I and 199 may be applied only once toward the minor.

Honors collegium courses with significant history of science, technology, and medicine content may be applied toward the upper-division course requirement for the minor.

One upper-division course outside the department may be counted toward the minor, with approval of the history of science field coordinator. The course must address social, historical, and philosophical aspects of science, technology, and medicine.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must maintain an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### History MA, CPhil, PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## History

### Lower-Division Courses

**1A. Introduction to Western Civilization: Ancient Civilizations, Prehistory to circa AD 843. (5)** Lecture, three hours; discussion, one hour. Survey of diverse cultures that shaped foundation of Western civilization to onset of 9th century AD. Investigation of first civilizations in Near East and Egypt. Analysis of worlds of Greeks and Romans. Examination of ways in which western European societies created new syntheses through selective appropriation of Greek and Roman cultures and introduction of new cultural forms. P/NP or letter grading.

**1AH. Introduction to Western Civilization: Ancient Civilizations, Prehistory to circa AD 843 (Honors). (5)** Lecture, three hours; discussion, two hours. Honors sequence parallel to course 1A. P/NP or letter grading.

**1B. Introduction to Western Civilization: Circa 843 to circa 1715. (5)** Lecture, three hours; discussion, one hour. Introduction to history of the West and its connections to rest of world from 843 to 1715. Profound social, political, cultural, and intellectual changes that affected development of modern world. Topics covered include economic, social, and cultural aspects of feudal system; relationship between Church and empire; new religious movements (including the Reformation); formation of nation-states; relationship between Western Europe and non-European and non-Christian people and traditions. P/NP or letter grading.



**1BH. Introduction to Western Civilization: Circa 843 to circa 1715 (Honors).** (5) Lecture, three hours; discussion, two hours. Honors sequence parallel to course 1B. P/NP or letter grading.

**1C. Introduction to Western Civilization: Circa 1715 to Present.** (5) Lecture, three hours; discussion, one hour. Introduction to history of the West and its connection to rest of world after 1715, during period of sweeping political, social, and cultural tensions and transformations. Topics covered include industrialization, rise of nationalism and mass politics, revolutionary movements, urbanization, mass global migrations, European expansion and imperialism, and decolonization, leading to emergence of new nation states in Europe's former colonies. P/NP or letter grading.

**1CH. Introduction to Western Civilization: Circa 1715 to Present (Honors).** (5) Lecture, three hours; discussion, two hours. Honors sequence parallel to course 1C. P/NP or letter grading.

**2B. Social Knowledge and Social Power.** (5) Lecture, three hours; discussion, two hours. History of social knowledge and social power in the 19th and 20th centuries. Everyday ideas and practices about human nature, common sense, and community and relation of those practices to social thought, social engineering, and social science. Themes include development of social knowledges through public activities and discourses; how social knowledge differs in agricultural, mercantile, industrial, and information-based political economies; and how social science addresses these issues. P/NP or letter grading.

**2C. Religion, Occult, and Science: Mystics, Heretics, and Witches in Western Tradition, 1000 to 1600.** (5) Lecture, three hours; discussion, two hours. Specific aspects of elite and popular culture in medieval and early modern Europe. Manner in which men and women sought to explain, order, and escape terrors of their lives by embracing transcendental religious experiences and dreaming of apocalypse and witchcraft. Examination of experiences in context of genesis of the state, birth of a new science, and economic and social change. P/NP or letter grading.

**3A-3B-3C. History of Science. (5-5-5)** Lecture, three hours; discussion, two hours. History majors may not apply these courses on science general education requirements. P/NP or letter grading. **3A.** Renaissance to 1800. Survey of beginnings of physical sciences involving transformation from Aristotelian to Newtonian cosmology, mechanization of natural world, rise of experimental science, and origin of scientific societies. **3B.** Enlightenment to 1900. In this period science became part of Enlightenment campaign for reason and of culture of an Industrial Revolution. New social science and evolutionary debates about science and religion demonstrate its rising intellectual and practical significance. **3C.** 20th Century. Ranging from startling new physics of relativity and the quantum, and of nuclear weapons, to molecular reductionism in biology and campaigns for statistical objectivity, examination of involvement of science in technological, military, intellectual, and political changes of the 20th century.

**3D. History of Modern Medicine.** (5) Lecture, three hours; discussion, two hours. Examination, through illustrated lectures and focused discussion of primary sources, of five important themes in development of modern medicine: nature of diagnosis, emergence of surgery, epidemics, conception and treatment of insanity, and use of medical technology. P/NP or letter grading.

**M4. Introduction to History of Religions.** (5) (Same as Religion M4.) Lecture, three hours; discussion, two hours. Comparative study of eight major religious traditions, with emphasis on their beginnings and subsequent decisive changes in their respective historical developments and interactions. Equips students with intellectual tools necessary for thinking analytically, empathetically, and comparatively about fascinating human phenomena identified as religious, such as sacred acts, places, words, and persons in their varied historical contexts. Development of student skills in critical thinking, analyzing documents, and making persuasive arguments based on historical evidence. P/NP or letter grading.

**5. Holocaust: History and Memory.** (5) Lecture, three hours; discussion, two hours. Holocaust, murder of six million Jews by Germans in Nazi-occupied Europe during World War II, is one of crucial events of modern history. Examination of origins of Holocaust, perpetrators and victims, and changing efforts to come to terms with this genocide. Exploration of forces that led to Holocaust, including emergence of scientific racism, anti-Semitism, and machinery of modern state. Consideration of debates about implementation of genocide, including significance of gender and sexuality, relationship between war and genocide, meanings of resistance and culpability, and political and philosophical implications of Holocaust. Exploration of how genocide of European Jewry was intertwined with targeting of other victims of Nazi rule, including Roma, Slavs, black Germans, disabled, homosexuals, and political opponents of National Socialism. P/NP or letter grading.

**8A. Colonial Latin America.** (5) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 8AH. General introduction to Latin American history from contact period to independence (1490s to 1820s), with emphasis on convergence of Native American, European, and African cultures in Latin America; issues of ethnicity and gender; development of colonial institutions and societies; and emergence of local and national identities. Readings focus on writings of Latin American men and women from the period studied. P/NP or letter grading.

**8AH. Colonial Latin America (Honors).** (5) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 8A. General introduction to Latin American history from contact period to independence (1490s to 1820s), with emphasis on convergence of Native American, European, and African cultures in Latin America; issues of ethnicity and gender; development of colonial institutions and societies; and emergence of local and national identities. Readings focus on writings of Latin American men and women from the period studied. P/NP or letter grading.

**8B. Modern Latin America.** (5) Lecture, three hours; discussion, one hour. Introductory survey of social, political, and economic history of Latin America after independence, region that includes Mexico, Central and South America, and Caribbean. Formation of independent nation states and political regimes and quest for sovereignty and its challenges in shadow of U.S., approached from bottom up through lens of social history, everyday life, and popular culture. P/NP or letter grading.

**8BH. Modern Latin America (Honors).** (5) Lecture, three hours; discussion, one hour. Honors course parallel to course 8B. P/NP or letter grading.

**8C. Latin American Social History.** (5) Lecture, three hours; discussion, two hours. Historical and contemporary perspective of role of ordinary people in Latin American society. Each lecture/film session centers on a major Latin American movie illustrative of a theme in social history. P/NP or letter grading.

**8CH. Latin American Social History (Honors).** (5) Lecture, three hours; discussion, two hours. Honors course parallel to course 8C. P/NP or letter grading.

**9A-9E. Introduction to Asian Civilizations. (5 each)** Lecture, three hours; discussion, two hours. P/NP or letter grading. **9A.** History of India. Introductory survey for beginning students of major cultural, social, and political ideas, traditions, and institutions of Indic civilization. **9C.** History of Japan. Survey of Japanese history from earliest recorded time to the present, with emphasis on development of Japan as a cultural daughter of China. Attention to manner in which Chinese culture was Japanese and aspects of Japanese civilization which became unique. Creation of the modern state in the last century and impact of Western civilization on Japanese culture. **9CH.** History of Japan (Honors). Honors course parallel to course 9C. **9D.** History of Middle East. Introduction to history of Muslim world from advent of Islam to present day. **9E.** Southeast Asian Crossroads. Overview history of a region united by its wet tropical environment and divided by great religious, cultural, and political pluralism, with focus on Vietnamese, Thai, Filipino, Khmer, Burmese, and Malayo-Indonesian patterns.

**M10A-10B. History of Africa. (5-5)** P/NP or letter grading. **M10A.** To 1800. (Same as African American Studies M10A.) Lecture, three hours; discussion, one hour. Exploration of development of African societies from earliest times to late 18th century. **10B.** 1800 to Present. Lecture, three hours; discussion, two hours. Not open for credit to students with credit for course 10BH or 10BW. Survey of social, economic, and political developments in Africa since 1800, with focus on slave trade, imperialism and colonialism, and nationalism and independence. Attention to different ideologies (nationalism, socialism, apartheid), rural/urban tensions, changing role of women.

**10BH. Introduction to Civilizations of Africa (Honors).** (4) Lecture, three hours; discussion, two hours. Not open for credit to students with credit for course 10B or 10BW. Honors course parallel to course 10B. P/NP or letter grading.

**10BW. Introduction to Civilizations of Africa since 1800.** (5) Lecture, three hours; discussion, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course 10B or 10BH. Survey of social, economic, and political developments in Africa since 1800, with focus on slave trade, imperialism and colonialism, and nationalism and independence. Attention to different ideologies (nationalism, socialism, apartheid), rural/urban tensions, changing role of women. Four papers required. Satisfies Writing II requirement. Letter grading.

**11A-11B. History of China. (5-5)** Lecture, three hours; discussion, one hour. P/NP or letter grading. **11A.** To 1000. Survey of early history of China—genesis of characteristic Chinese institutions and modes of thought from antiquity to 1000. Focus on social, political, intellectual, and economic aspects of early and middle empires. **11B.** Circa 1000 to 2000. Survey of later history of China—evolution of characteristic Chinese institutions and modes of thought from circa 1000 to 2000. Focus on social, political, intellectual, cultural, and economic aspects of early modern regimes and empires and rise of modern China into contemporary era.

**11AH-11BH. History of China (Honors).** (5-5) Lecture, three hours; discussion, two hours. Honors sequence parallel to courses 11A, 11B. P/NP or letter grading. **11AH.** To 1000 (Honors); **11BH.** 1000 to 1950 (Honors).

**12A. Inequality: History of Mass Imprisonment.** (5) Lecture, three hours; discussion, one hour. Beginning with end of U.S.-Mexican War (1848) and ending with beginning of World War II, historical analysis from days when Los Angeles first became U.S. town until 1940s when Los Angeles first became global epicenter of human confinement. Exploration of major eras and turning points in city's rise as both national and global leader in human incarceration, with review of historical foundations of mass imprisonment in Los Angeles. Introduction to current social and political landscape of imprisonment in Los Angeles. P/NP or letter grading.

**12B. Inequality: History of Neoliberalism.** (5) Lecture, three hours; discussion, one hour. Exploration of origins, ideas, and consequences of neoliberalism—theory that society is best organized on principles of free trade, deregulation, and privatization. Combination of political, economic, and intellectual history to construct genealogy of neoliberal thinking by attending to 18th- and 19th-century liberalism, colonialism, imperialism, rise of social democracy and military Keynesianism, and Mount Pelerin Society's Cold War resuscitation of 19th-century liberalism. Coverage of economic crisis of 1970s, restructuring of global political economy in U.S., Europe, global south—specifically debt, structural adjustment policies, environmental destruction, and military intervention. Tracing of colonial roots of global north-south divide to reveal how neoliberal policies represent longer process of accumulation by dispossession and enclosure rather than sudden radical break from Keynesian model. P/NP or letter grading.

**12C. Inequality: Global History of Anti-Colonial Thought and Struggle.** (5) Lecture, three hours; discussion, one hour. Ongoing growth and normalization of poverty, violence, and racial hatred in neo-liberal present have direct linkage to earlier moment when

colonial rule of previous century brought about global structure of inequality. Examination of some of most important voices of anti-colonial and anti-imperialist struggle from comparative perspective in order to historicize current conjuncture. Readings include Aimé Césaire, Frantz Fanon, Ho Chi Minh, Toten Miyazaki, Sun Yat-Sen, Shusui Kotoku, Malcolm X, Che Guevara, and Mahatma Gandhi. Use of dialogue to reveal and reflect on commonalities and differences of thinker/activist pairs. Historical background for each thinker and active engagement in interpretation and discussion of texts. Group project as way to reflect on current conjuncture. P/NP or letter grading.

**13A-13B-13C. History of the U.S. and Its Colonial Origins. (5-5-5)** Lecture, three hours; discussion, one hour. Strongly recommended for History majors planning to take more advanced courses in U.S. history. Cultural heritages, political institutions, economic developments, and social interactions which created contemporary society. P/NP or letter grading. **13A.** Colonial Origins and First Nation Building Acts; **13B.** 19th Century; **13C.** 20th Century.

**14. Atlantic World, 1492 to 1830. (5)** Lecture, three hours; discussion, one hour. Strongly recommended for History majors planning to take more advanced courses in history of any region bordering on Atlantic during period from 1500 to 1900. Exploration of idea of Atlantic world and few of major historical trends that shaped its history, including migration, slavery, imperial conflicts, and revolution. Atlantic history approach avoids national frameworks that assume creation of later national division in order to understand larger, integrated region, one that gave rise to later nation states. In reconsidering how past is studied, highlights key connections, interactions, and circuits that gave rise to modern world. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. World History to AD 600. (5)** Lecture, three hours; discussion, two hours. Examination of earliest civilizations of Asia, North Africa, and Europe—Mesopotamia, Egypt, Israel, India, China, Greece, and Rome—from development of settled agricultural communities until about AD 500, with focus on rise of cities, organization of society, nature of kingship, writing and growth of bureaucracy, varieties of religious expression, and linkage between culture and society. P/NP or letter grading.

**21. World History, circa 600 to 1760. (5)** Lecture, three hours; discussion, two hours. Outline of world history from rise of Islam to start of Industrial Revolution, structured around a broad chronological narrative of salient developments. Use of thematic and comparative approaches, with certain recurring themes and institutions that modulate from culture to culture. Reading of variety of contemporary accounts to look at way people perceived cultures outside their own. P/NP or letter grading.

**22. Contemporary World History, 1760 to Present. (5)** Lecture, three hours; discussion, two hours. Broad thematic survey of world history since the mid-18th century. Examination, through lecture and discussion, of global implications of imperialism, total war, nationalism, cultural change, decolonization, changes in women's rights and roles, and eclipse of world communism. Designed to introduce students to historical study, help them understand issues and dilemmas facing the world today, and prepare them for more in-depth work in history of specific regions or countries of the world. P/NP or letter grading.

**M60. Achaemenid Civilization and Empire of Alexander. (5)** (Same as Ancient Near East M60 and Iranian M60.) Lecture, three hours; discussion, one hour. Survey of period from circa 600 to 300 BCE, rise and fall of Achaemenid Persia, first world empire of antiquity, which was ended by Alexander the Great, whose campaigns were as transformative as they were violent. Alexander connected ancient Mediterranean and Near East as never before, ushering in new era and forever changing cultural landscape of ancient world. Focus on themes of ancient kingship and political ideology; comparative study of empires; administration

and institutions; and religious and ethnic diversity in large, heterogeneous states. Emphasis on diversity critical to understanding political nuances of ancient world. Students gain broad knowledge of Achaemenid and Macedonian empires, facility with ancient primary sources, and development of analytical skills central to discipline of history that allow conceptualizing issues of diversity and othering in ancient world. P/NP or letter grading.

**M60W. Achaemenid Civilization and Empire of Alexander. (5)** (Same as Ancient Near East M60W and Iranian M60W.) Lecture, three hours; discussion, one hour. Requisite: English Composition 3. Not open for credit to students with credit for course M60. Survey of period from circa 600 to 300 BCE, rise and fall of Achaemenid Persia, first world empire of antiquity, which was ended by Alexander the Great, whose campaigns were as transformative as they were violent. Alexander connected ancient Mediterranean and Near East as never before, ushering in new era and forever changing cultural landscape of ancient world. Focus on themes of ancient kingship and political ideology; comparative study of empires; administration and institutions; and religious and ethnic diversity in large, heterogeneous states. Emphasis on diversity critical to understanding political nuances of ancient world. Students gain broad knowledge of Achaemenid and Macedonian empires, facility with ancient primary sources, and development of analytical skills central to discipline of history that allow conceptualizing issues of diversity and othering in ancient world. Satisfies Writing II requirement. P/NP or letter grading.

**88. Sophomore Seminars: History. (4)** Seminar, three hours. Limited to maximum of 20 lower-division students. Readings and discussions designed to introduce students to current research in discipline. Culminating project may be required. P/NP or letter grading.

**88GE. Sophomore Seminar: Special Topics in History. (5)** Seminar, four hours. Requisite: designated GE lecture course; see Schedule of Classes for specific requisite lecture and seminar topics. Designed for sophomores/juniors. Exploration of aspects of lecture topic through readings, images, and discussions. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**94. What Is History? An Introduction to Historical Thinking and Practice. (4)** Lecture, two hours; discussion, two hours. What is history, who is it that we study, how do we study, and why should we study history? Introduction to basic principles of historical inquiry. Exploration of how we come to know about the past and why it matters. In-depth examination of how the historian works and analysis of sources and visual matters, including site visits. P/NP or letter grading.

**96W. Introduction to Historical Practice. (5)** Seminar, three hours. Requisite: English Composition 3. Introduction to study of history, with emphasis on historical theory and research methods. Satisfies Writing II requirement. Letter grading.

**97. Historical Practices Adjunct Seminar. (1)** Seminar, one hour. Corequisite: any course from History 97A through 97O. Limited to History majors. Exploration of topics covered in courses 97A through 97O in greater depth through supplemental readings, discussions, or other activities. P/NP grading.

**97A-97O. Introduction to Historical Practice: Variable Topics. (4 each)** Seminar, three hours. Discussion classes of no more than 15 students. Introduction to study of history, with emphasis on historical theory and research methods. Variable topics courses; consult Schedule of Classes for topics to be offered in specific term. P/NP or letter grading. **97A.** Ancient History; **97B.** Medieval History; **97C.** European History; **97D.** U.S. History; **97E.** Latin American History; **97F.** Near Eastern History; **97G.** East Asian History; **97I.** History of Science/Technology; **97J.** African History; **97K.** History of Religion; **97L.** Jewish History; **97M.** Southeast Asian History; **97N.** Indian History; **97O.** World History.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100. History and Historians. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study of historiography, including intellectual processes by which history is written, results of these processes, and sources and development of history. Attention also to representative historians. P/NP or letter grading.

**101. Topics in World History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of specific historical themes from world historical perspective. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**C101A-C101B. Variable Topics: Interdisciplinary Studies. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Course C101A is not requisite to C101B. Designed for juniors/seniors. Topics may include gender, world history, masculinity, and economic history. May be repeated for credit with topic change. Concurrently scheduled with courses C208A-C208B. P/NP or letter grading.

**102A. Iran and Persianate World. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Development of model of Persianate world to bring together histories of Iran, India, and central Asia (including Afghanistan) between circa 1200 and 2000. Movement and interaction of different peoples between major cultural centers where Persian was used as common language of intellectual, religious, social, and political exchange. Weekly focus on one particular theme, with lecture material supplemented by translations of writings of princes, poets, tribesmen, travelers, and mystics who created Persian republic of letters between Shiraz, Samarkand, and Delhi, and even as far as Siberia and China. Examination of why and how various ethnic and professional groups made Persian into one of most important languages in world history. P/NP or letter grading.

**M103A-M103B. History of Ancient Egypt. (4-4)** (Same as Ancient Near East M103A-M103B.) Lecture, three hours; discussion, one hour (when scheduled). Course M103A is not requisite to M103B. Designed for juniors/seniors. Political and cultural institutions of ancient Egypt and ideas on which they were based. P/NP or letter grading. **M103A.** Chronological discussion of Prehistory, Old and Middle Kingdom. **M103B.** New Kingdom and Late period until 332 BC.

**M104A. History of Ancient Mesopotamia and Syria. (4)** (Same as Ancient Near East M104A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political and cultural development of Fertile Crescent, including Palestine, from Late Uruk to neo-Babylonian period. P/NP or letter grading.

**M104B. Sumerians. (4)** (Same as Ancient Near East M104B.) Lecture, three hours. Designed for juniors/seniors. Overview of Sumer and related cultures of Greater Mesopotamia in 4th and 3rd millennia BCE,

with focus on rich cultural history of region and integration of archaeological, art historical, and written records. P/NP or letter grading.

**M104C. Babylonians. (4)** (Same as Ancient Near East M104C.) Lecture, three hours. Designed for juniors/seniors. Overview of Babylonia and cultural history of region from late 3rd millennium BCE to invasion of Cyrus in 539 BCE, with focus on history and archaeology of region, urban structure, literature, and legal practices. P/NP or letter grading.

**M104D. Assyrians. (4)** (Same as Ancient Near East M104D.) Lecture, three hours. Designed for juniors/seniors. Overview of Assyrian cultural history from its origins to end of Neo-Assyrian period (circa 612 BCE), with focus on rise, mechanics, and decline of Neo-Assyrian Empire, which at its peak ruled ancient Near East from Zagros to Egypt. P/NP or letter grading.

**105A-105B-105C. Survey of Middle East, 500 to Present. (4-4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Background and circumstances of rise of Islam, creation of Islamic Empire, and its development. Rise of Dynastic Successor States and Modern Nation States. Social, intellectual, political, and economic development. P/NP or letter grading. **105A.** 500 to 1300; **105B.** 1300 to 1700; **105C.** 1700 to Present.

**M106. Premodern Islam. (4)** (Same as Religion M106A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of early development of Islam with special attention to doctrine of nature of God, human responsibility, guidance, revelation and religious authority, duties of believers, ritual, law, sectarian movements, mysticism, and popular religion. P/NP or letter grading.

**107A-107B-107C. Armenian History. (4-4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **107A.** Armenia in Ancient and Medieval Times, 2nd Millennium BC to AD 11th Century; **107B.** Armenia from Cilician Kingdom through Periods of Foreign Domination and National Stirrings, 11th to 19th Centuries; **107C.** Armenia in Modern and Contemporary Times, 19th and 20th Centuries. Armenian question and genocide, national republic, Soviet Armenia, and dispersion.

**107D. Introduction to Armenian Oral History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Uses and techniques of Armenian oral history; preinterview, interview, and postinterview procedures; methods of compilation and evaluation. Field assignments, interviews, and summaries and/or paper based on interviews. P/NP or letter grading.

**107E. Caucasus under Russian and Soviet Rule. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of political, economic, social, and cultural history of Caucasus region since 1801. Georgian, Armenian, and Azerbaijani response to Russian and Soviet rule; nationality question and Soviet national republics. P/NP or letter grading.

**108A. History of North Africa from Islamic Conquest. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of political, social, economic, and religious history of Islamic West (Maghrib) from Muslim conquest in 7th and 8th centuries CE until 1578. P/NP or letter grading.

**108B. History of Islamic Iberia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of political, social, economic, religious, artistic, and literary history of Islamic culture in Western Europe. P/NP or letter grading.

**M108C. Culture Area of Maghrib (North Africa). (4)** (Same as Anthropology M166Q and Arabic M171.) Lecture, three hours. Designed for juniors/seniors. Introduction to North Africa, especially Morocco, Algeria, Tunisia, and Libya, also known as Maghrib or Tamazgha. Topics include changing notions of personal, tribal, ethnic, linguistic and religious identities; colonialism; gender and legal rights, changing representations of Islam, and religions in region's public spaces. P/NP or letter grading.

**109B. History of Israeli-Palestinian Conflict, 1881 to Present. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of origins of Arab-Israeli dispute from mid-19th century through founding of state of Israel and expulsion/flight of three quarters of million Palestinians from their homes. Exploration of social history of Palestine up to Zionist colonization, origins of Zionism and Palestinian nationalism, varieties of Zionism, Zionism and colonialism, seminal events and their consequent symbolic connotations Great Revolt and 1948 nakba (disaster), construction of national consensus in Israel, 1967 and its aftermath, intifada, and redefinition of conflict as result of Oslo. P/NP or letter grading.

**M110A-M110B-M110C. Iranian Civilization. (4-4-4)** (Same as Ancient Near East M110A-M110B-M110C and Iranian M110A-M110B-M110C.) Lecture, three hours; discussion, one hour (when scheduled). P/NP or letter grading. **M110A.** History of Achaemenid Empire. From end of Elam and rise of Medes to Macedonian conquest of Achaemenid Persia. Emphasis on political history, state structure, empire's religions, and Greco-Persian interactions. Further accents on Cyrus' empire and Darius' world order, age of Persian Wars, Cyrus the Younger, Achaemenid Egypt, Alexander's conquest. **M110B.** History of Arsacid (Parthian) Empire. From Hellenistic rule in Persia to Sasanian conquest. Emphasis on political history, state structure, empire's religions, interactions with Hellenistic and Roman worlds. Further accent on Parthian conquest of Iran and Mesopotamia, Seleucid demise and Arsacid hegemony in East, Arsacid-Roman wars, rise of Sasanians. **M110C.** History of Early Sasanian Empire—From Ardashir I to Rise of Peroz (circa 224-459 CE) From fall of Arsacids to Muslim conquest of Iran. Emphasis on political and economic history, evolution of state structure, empire's religious landscape (Mazdism, Manicheism, Exilarchate, Church of Persia, Mazdakism), Persian and Roman/Byzantine interactions, Persia and East. Further accent on Persian-Roman conflicts and cooperation, Persia and Huns.

**111A-111B-111C. Topics in Middle Eastern History. (4-4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading. **111A.** Premodern. Examination of major issues in history of Middle East. **111B.** Early Modern. Examination of Istanbul in Ottoman period (1453 to 1923); relationship between history and literary imagination and view of history as dialogue between past and present; scholarly debate on urban history of early-modern Middle East; introduction to corpus of theories (world economy paradigm) through discussion of Ottoman port cities. **111C.** Modern. Middle East underwent widespread social, economic, and cultural changes during 19th century that propelled society, at least portions of society and aspects of its social/cultural life, in entirely new direction. Examination of those changes to understand exactly what modernity meant for region.

**112A-112B. History of Ancient Mediterranean World. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **112A.** Survey of history of ancient East from earliest times to foundation of Persian Empire. **112B.** History and institutions of Greeks from their arrival to death of Alexander.

**112BD. History of Ancient Mediterranean World: Greece. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of history of ancient Greek world from circa 2,000 to 300 BC and its legacy in modern times. Study of Minoan civilization on Crete and Mycenaean Greeks of mainland, through Dark Age, development of Greek city-states, achievements of Athens and Sparta in Archaic and Classical periods, and death of Alexander the Great of Macedon and emergence of Hellenistic Age. Exploration of legacy of ancient Greek civilization in later Greek history, and Roman, Byzantine, Turkish, and modern periods. P/NP or letter grading.

**M112C. History of Ancient Mediterranean World. (4)** (Same as Classics M114A.) Lecture, five hours. Intensive on-site study of history and culture of ancient Rome from founding of city to conversion of Christianity. Part of UCLA Summer Travel Program. P/NP or letter grading.

**112D. History and Monuments of Ancient Greece: Field Studies. (4)** Fieldwork, three hours. Enforced corequisite: course 112B. Examination of history, art, and monuments of ancient Greece through daily lectures and field walks to museums and archaeological sites. Part of UCLA Summer Travel Program. P/NP or letter grading.

**M112E. History and Monuments of Rome: Field Studies. (4)** (Same as Classics M114B.) Fieldwork, five hours. Enforced corequisite: course M112C. Examination of history, art, and monuments of ancient Rome through daily lectures and field walks to museums and archaeological sites. Field trips outside Rome to Pompeii, Hadrian's Villa, and ancient Ostia. Reception and ruins of Roman antiquity in medieval, Renaissance, and modern eras explored in their historical context. Part of UCLA Summer Travel Program. P/NP or letter grading.

**113A-113B. History of Ancient Greece. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **113A.** Rise of Greek City-State. Emphasis on archaic period and early classical age through Persian Wars. **113B.** Classical Period. Clash between Athens and Sparta, consequent rise of Macedonia, and aftermath of Alexander the Great.

**M113C. Ancient Historiography: Theory and Practice. (4)** (Same as Classics M133.) Lecture, three hours. Study of theory, practice, and development of writing history in cultures of ancient Greece and Rome. Focus is literary, centered on questions of genre and rhetoric. Encourages appreciation for how ancient historiography relates to other ancient genres (epic, biography, oratory). Readings may draw widely from various authors, including Herodotus, Thucydides, Livy, Tacitus, and others. P/NP or letter grading.

**114A-114B-114C. History of Rome. (4-4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **114A.** To Death of Caesar. Emphasis on development of imperialism and on constitutional and social struggles of late republic. **114B.** From Death of Caesar to Time of Constantine. Early empire treated in more detail, supplemented by survey of social and economic changes in 3rd century. **114C.** Transformation of Classical World. Political, cultural, and religious history of Mediterranean in late antiquity, from crisis of Roman Empire in 3rd century to barbarian and Arab invasions and beginning of medieval states and societies in 7th century.

**115. Topics in Ancient History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to topics in Greek and Roman history, including Roman law, ancient Greek and Roman slavery, world of Caesar Augustus, Greek democracy, and Alexander the Great. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**116A-116B. Byzantine History. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political, socioeconomic, religious, and cultural continuity in millennial history of Byzantium. Reforms of Diocletian. Byzantium's relations with Latin Europe, Slavs, Sassanids, Arabs, and Turks. P/NP or letter grading.

**M116C. Power and Imagination in Byzantium. (4)** (Same as Classics M170C.) Lecture, three hours; discussion, one hour (when scheduled). Requisites: courses 116A, 116B. Designed for juniors/seniors. Study of relations of authority and intelligentsia in highly centralized Byzantine Empire. Topics include criticism of emperor, iconoclasm, intellectual freedom, attempts at reform. Letter grading.

**119A-119B. Medieval Europe. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Basic introduction to Western Europe from Latin antiquity to age of discovery, with emphasis on medieval use of Greco-

Roman antiquity, history of manuscript book, and growth of literacy. P/NP or letter grading. **119A.** 400 to 1000; **119B.** 1000 to 1500.

**119C. Medieval Civilization: Mediterranean Heartlands.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of Western Mediterranean Europe, social/economic/cultural within political framework, including its relation with other cultures. P/NP or letter grading.

**119D. Topics in Medieval History.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Special topics in history of Middle Ages, including religion in society, justice and law, politics of war and diplomacy, economic upheaval and renewal, and cultural representations. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**120A-120B. East-Central Europe.** (4-4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading.

**120A.** Long 19th Century, 1780 to 1914. Analysis of characteristics of peripheral 19th-century capitalism, effort to modernize and catch up, and factors and consequences of its partial failure in economy, politics, and culture. **120B.** Short 20th Century, 1918 to 1990. Analysis and interpretation of stormy history of crisis zone of Europe where wars, revolts and revolutions, and different types of extremisms led to historical detour: 70 years of departure from Western values and at last effort to turn back to them.

**120C. East-Central Europe in Transition, 1988 to 1993.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. State-socialism and Soviet domination collapsed in East-Central Europe in 1989. Analysis of cause and consequence of collapse, as well as road of transformation in seven (now 12) countries of region; international circumstances and domestic political, social, and economic processes. Ideology of transition versus reality of democratization, marketization, and privatization; free choice versus determinant factors. Scenarios for future. P/NP or letter grading.

**120D. Film and History: Central and Eastern Europe, 1945 to 1989.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Postwar history of central and eastern Europe (1945 to 1989), using eight Czech, Polish, and Hungarian films to explore life under state socialist modernization dictatorship. P/NP or letter grading.

**121A. History of Modern Europe: Renaissance and Reformation, 1450 to 1660.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Reorganization of power, new forms of representation, and discourses about rule and obedience in Europe from mid-15th through 16th century; popular culture; peasant society; refashioning of religion and power; localization. P/NP or letter grading.

**121B. History of Modern Europe: Baroque Culture and Absolutist Politics, 1600 to 1715.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Changing nature of state and social domination; redeployment of military violence; strategies of population discipline; absolutism and baroque culture; new forms of bureaucratic intervention; representation of family, sexuality, and body; witch persecutions. P/NP or letter grading.

**121C. History of Modern Europe: Old Regime and Revolutionary Era, 1715 to 1815.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Enlightened absolutism and reform, challenge of new political and economic ideas, crisis of Old Regime, impact of French Revolution and Napoleonic empire. P/NP or letter grading.

**121D. History of Modern Europe: Bourgeois Century, 1815 to 1914.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Restoration politics, Industrial Revolution, uprisings of 1848, unification of Germany and Italy, imperialism, rise of socialism, population growth, changes in social structure, origins of World War I. P/NP or letter grading.

**121E. History of Modern Europe: Era of Total War, 1914 to 1945.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. World War I, interwar period, and World War II. Social, cultural, political, and economic aspects, with focus on strain between model of parliamentary democracy and dynamics of mass politics (e.g., Bolshevik Revolution, Italian Fascism, national socialism, and Spanish Civil War). P/NP or letter grading.

**121F. History of Modern Europe: World War II and Its Aftermath, 1939 to Present.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. World War II, origins and persistence of Cold War, reconstruction in West, de-Stalinization, decolonization, crisis of welfare state, background to and course of 1989 revolutions, current political configuration. P/NP or letter grading.

**122A-122F. Cultural and Intellectual History of Modern Europe.** (4 each) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Climates of taste and climates of opinion. Educational, moral, and religious attitudes; art, thought, and manners of time in historical context. P/NP or letter grading. **122A.** 15th Century. Renaissance cultural and intellectual history of Europe. Central themes include comparative history of ideas, theory and practice of art and architecture, civic and religious humanism, religious experience, and new cultural genres of history and philological scholarship. **122B.** 16th Century. **122C.** 17th Century. **122D.** 18th Century. **M122E.** 19th Century. (Same as Art History M127C.) **122F.** 20th Century.

**123A-123B-123C. War and Diplomacy in Europe.** (4-4-4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **123A.** 1650 to 1815. Survey of military and diplomatic history, seen in relation to social and economic developments and growth of state. **123B.** 1815 to 1945. Changing patterns of warfare and diplomatic attempts to contain Great Power rivalries; wars of national unification; imperialism; shifting balance of power and alliances; origins, course, and effects of two World Wars. **123C.** Cold War. Relations of West, Soviet Union, and world from 1945 to 1991. Origins, development, and end of power-political, military, and ideological confrontations between superpowers and their allies and clients in Europe, Asia, and Latin America.

**124A-124B-124C. History of France.** (4-4-4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **124A.** France, 1500 to 1715. Social history of 16th- and 17th-century France, including growth of monarchy, wars of religion, peasant uprisings, popular culture, Catholic resurgence, Louis XIV, and achievements in arts and literature. **124B.** France, 1715 to 1871. *Ancien Régime* and time of revolutions. Critical discourse leading to French Revolution, collapse of state, Napoleonic era, reconstruction of society through monarchies and revolutions of 19th century. **124C.** Making of Modern France, 1871 to Present. From oligarchy to democratic bureaucracy in two wars and three republics.

**125A. Baroque and Enlightenment Germany.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Development of state institutions, culture, and society in Central Europe from end of Thirty Years' War to end of Napoleonic Wars. Consideration of absolutism as political system, and baroque and Enlightenment cultures as new discourses on power and hierarchy. P/NP or letter grading.

**125B. Nationalism and Modernization in 19th-Century Germany.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Problems of class society and state formation, emancipation, assimilation, growth of national consciousness, emergence of bourgeois public sphere, dynamics of gender in civil society and political life, post-Napoleonic tensions between reform and reaction, 1848, and national unification. P/NP or letter grading.

**125C. 20th-Century Germany.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Transitions that Germany has faced

during this century: two world wars, shift from monarchy to republic to national socialism to divided nation, and finally reunification. Consideration of political, social, economic, and cultural spheres. P/NP or letter grading.

**125D. History of Low Countries.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of aspects of Dutch (and on occasion Belgian) history from medieval period to period after World War II, with emphasis on political and cultural history. Topics include Middle Ages, Dutch Republic in 17th and 18th centuries, Low Countries from 1830 to 1918, Netherlands and Belgium in context of Europe after 1945. P/NP or letter grading.

**126. Europe in Age of Revolution, circa 1775 to 1815.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Period from revolt of Thirteen Colonies to French Revolution of 1789, and Napoleonic regime, viewing social and political changes unleashed by these revolutionary movements in comparative and transnational perspective. P/NP or letter grading.

**M127A. History of Russia, Origins to Rise of Muscovy.** (4) (Same as Russian M118.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Kievan Russia and its culture, Appanage principalities and towns; Mongol invasion; unification of Russian state by Muscovy, Autocracy and its Servitors; serfdom. P/NP or letter grading.

**127B. History of Russia: Imperial Russia from Peter the Great to Nicholas II.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Westernization of state and society; centralization at home and expansion abroad; peasant problem; beginnings of industrialization; movements of political and social protest; non-Russian peoples; political reforms and social changes; Revolution of 1905; Russia in World War I; fall of old regime. P/NP or letter grading.

**127C. History of Russia: Revolutionary Russia and Soviet Union.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Revolutions of 1917, Civil War, consolidation of Bolshevik Regime; succession crisis and ascendance of Stalin, collectivization and industrialization; foreign policy and World War II; death of Stalin, de-Stalinization, developments since; stagnation or stability? P/NP or letter grading.

**127D. History of Russia: Culture and Society in Imperial Russia.** (4) Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: course 127B or Russian 90A or 119. Designed for juniors/seniors. Thematic examination of culture and society in Russia during era of state-sponsored Westernization (1689 to 1917). Topics include nobility, peasantry, and village life from serfdom to postemancipation era, urban society, working-class life and thought, women, clergy, religion, popular culture, accommodation, and resistance. P/NP or letter grading.

**128A-128B-128C. History of Italy.** (4-4-4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **128A.** 1350 to 1559. Most important social, economic, political, and cultural developments in history of Italy during later Middle Ages and Renaissance. **128B.** 1559 to 1848. Counter-Reformation and absolutism, Enlightenment reforms, revolutionary era, and first phase of Risorgimento. **128C.** 1848 to Present. Political, economic, social, diplomatic, and ideological developments.

**129A-129B. Social History of Spain and Portugal.** (4-4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **129A.** Age of Silver in Spain and Portugal, 1479 to 1789. Development of popular history in Iberian Peninsula. Emphasis on peasants and urban history, gold routes, slave trade, history of women, and development of different types of collective violence. **129B.** Rebellion and Revolution in Modern Spain and Portugal, 1789 to Present. Spain's position in Europe and its potentialities for social change discussed through investigations of urban history,



agrarian social structure, history of women, problems of slow industrial development, imperialism, anarchism, and labor history.

**130. History of European Political Thought. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to principal themes in history of European political thought from classical antiquity to close of early modern period. Study of outstanding contributions to history of social, political, and moral philosophy in texts of major thinkers such as Plato, Aristotle, Machiavelli, More, Hobbes, Locke, and Rousseau. Reconstruction of broad intellectual and ideological contexts from which their work emerged to help students make sense of works of political philosophy in their relevant historical setting and to know something about Athenian democracy and its critics, Roman republic and its empire, Renaissance, early modern European civil wars, American and French Revolutions, and Enlightenment. Focus on emergence of some crucial concepts during this period—ideas about state, self, rights, sovereignty, liberty, private property, and more—that define way we think about politics and society in modern world. P/NP or letter grading.

**131A-131B. Marxist Theory and History. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Course 131A is generally requisite to 131B. Designed for juniors/seniors. Introduction to Marxist philosophy and method; conception of historical stages; competing Marxist analyses of transition from feudalism to capitalist economy via reading *Capital*; theory of politics and state in relationship to historical interpretation of 19th-century European revolutions; capitalist crises. P/NP or letter grading.

**132. Topics in European History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Integrated introduction to important aspects of European history, with emphasis on specific topic within broad framework. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**M133A-M133B. History of Women in Europe. (4-4)** (Same as Gender Studies M133A-M133B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of social, political, and cultural roles of women in Western Europe from early Middle Ages to present. P/NP or letter grading. **M133A.** 800 to 1715; **M133B.** 1715 to Present.

**M133C. History of Prostitution. (4)** (Same as Gender Studies M133C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of prostitution from ancient times to present. Topics include toleration in medieval Europe, impact of syphilis, birth of courtesan, regulation in 19th-century Europe, white slavery scare, and contemporary global sex trade. Readings include novels, primary sources, and testimony by sex workers. P/NP or letter grading.

**134B-134C. Economic History of Europe. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **134B.** 1780 to 1914. Analysis of emergence of European world economy, first Industrial Revolution, revolutionary changes in technology, demographic patterns, education, transportation, and interrelationship between Western core and European peripheries in process of industrialization. **134C.** 20th Century. Changing European economy after World War I and II and in 1990s; impact of fourth and fifth Industrial Revolutions; Great Depressions of century during 1930s, 1970s, and 1980s; and changing modernization strategies; import-substituting industrialization in peripheries; Soviet modernization dictatorship in East Central Europe and its collapse; integration process of second half of century and rise of European Union; modernization model at end of century.

**135A. Europe and World: Exploration and Conquest, 1400 to 1700. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. First phase of European expansion in Americas, Africa, and Eurasia. Analysis of motives and methods of expansion, differing patterns of European settlement,

including plantation economy, and development of new commercial networks, including Atlantic slave trade. P/NP or letter grading.

**135B. Europe and World: Colonialism, Slavery, and Revolution, 1700 to 1870. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Origins and gradual increase of European dominance of world trade, impact of European colonialism in New World, Africa, and Asia, influence of new revolutionary ideals that took shape in wake of Enlightenment of 18th century, and beginnings of industrialization. P/NP or letter grading.

**135C. Europe and World: Imperialism and Postcolonialism, 1870 to Present. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of major European events and trends and their impact on world in modern period. Interrelationship of European and world history, from partition of Africa to founding of India and Pakistan. Global consequences of Cold War and new place of Europe in world. P/NP or letter grading.

**136A-136B-136C. History of Britain. (4-4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Analysis of British economy, society, and polity, with focus on dynamics of both stability and change. P/NP or letter grading.

**136A. Tudor-Stuart Times, 1485 to 1715.** Political, socioeconomic, religious, and cultural history of Britain under Tudors and Stuarts. Topics include Reformation, transformation of economy, establishment of overseas colonies, 17th-century political upheavals and their impact on political and socioeconomic structures.

**136B. Making of Modern Britain, 1715 to 1867.** Social, economic, political, and cultural history of Britain from Hanoverian revolution in politics to advent of mass democracy in mid-Victorian era. Themes include social change under pressure of industrialization, emergence of first British Empire, loss of America, shifts in religion and social position. **136C. Modern Britain since 1832.**

**137A-137B. British Empire since 1783. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political and economic development of British Empire, including evolution of colonial nationalism, development of commonwealth idea, and changes in British colonial policy. P/NP or letter grading.

**138A. Colonial America, 1600 to 1763. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of molding of American society in English North America from 1600 to 1763. Emphasis on interaction of three converging cultures: Western European, West African, and American Indian. P/NP or letter grading.

**138B. Revolutionary America, 1760 to 1800. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Inquiry into origins and consequences of American Revolution, nature of revolutionary process, creation of constitutional national government, and development of capitalist economy. P/NP or letter grading.

**138C. U.S. History, 1800 to 1850. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Discussion of major social, political, economic, and cultural transformations of first half of 19th century and how these changes helped to drive wedge between North and South. P/NP or letter grading.

**139A. U.S., Civil War and Reconstruction. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Rise of sectionism, antislavery crusade; formation of Confederate States; war years; political and social reconstruction. P/NP or letter grading.

**139B. U.S., 1875 to 1900. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. American political, social, and institutional history in period of great change. Emphasis on altering concepts of role of government and responses to that alteration. P/NP or letter grading.

**140A-140B-140C. 20th-Century U.S. History. (4-4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **140A.** 1900 to 1928. Political, eco-

omic, intellectual, and cultural aspects of American democracy. **140B.** 1929 to 1960. Political, economic, intellectual, and cultural aspects of American democracy. **140C.** Since 1960. History of political, social, and diplomatic developments that have shaped U.S. since 1960.

**141A-141B. American Economic History. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **141A.** 1790 to 1910. Roles of economic forces, institutions, individuals, and groups in promoting or impeding effective change in American economy from 1790 to 1910. During this period technical skeleton of modern industrial structure was formed. Why and how American economy evolved into dual economy, characterized by center of firms large in size and influence and periphery of smaller firms. **141B.** 1910 to Present. Dynamics of change in dual economy, with focus in greater detail on interrelationships between macro and micro developments in economy and on growing interdependency between U.S. and world economy from 1910 to present.

**142A-142B. Intellectual History of U.S. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Principal ideas about humanity and God, nature and society, that have been at work in American history. Sources of these ideas, their connections with one another, their relationship to American life, and their expression in great documents of American thought. P/NP or letter grading.

**M142C. History of Religion in U.S. (4)** (Same as Religion M142C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Consideration of religious dimension of people's experience in U.S. Examination of number of religious traditions that have been important in this country, with emphasis on relating developments in religion to other aspects of American culture. P/NP or letter grading.

**142D. American Popular Culture. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended requisites: courses 13B, 13C. Designed for juniors/seniors. Survey of American cultural history since 1865, with emphasis on historical development of urban, consumer-oriented American mass culture that enveloped diverse groups of Americans as producers and consumers. Historical development of American popular culture according to changing set of political, economic, and social circumstances. Evolution of national and global framework for mass circulation of popular cultural expressions, as well as arrival of new technologies that enabled that development. P/NP or letter grading.

**143A-143B. Constitutional History of U.S. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **143A.** Origins and Development of Constitutionalism in U.S. Particular emphasis on framing of Federal Constitution in 1787 and its subsequent interpretation. Judicial review, significance of Marshall Court, and effects of slavery and Civil War on Constitution. **143B.** Constitutionalism since Civil War. Particular emphasis on development of Supreme Court, due process revolution, Court and political questions, and fact of judicial supremacy within self-prescribed limits.

**144. America in World. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Reconsideration of U.S. exceptionalist approach to national self-understanding by rethinking crucial aspects of American history in more international context that goes well beyond foreign relations and international affairs to reconceptualize aspects of American economic, intellectual, cultural, and social history. Consideration of transnational flows of people, ideas, goods, wealth, and politics, as well as comparative studies of all these things and more. P/NP or letter grading.

**M144C. Critical Issues in U.S.-Philippine Relations. (4)** (Same as Asian American Studies M171D.) Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: courses 176A, 176B, 176C. Designed for juniors/seniors. Examination of complex interrelationship between U.S. colo-

nialism, Philippine nationalism, history of Filipino Americans, and Philippine diaspora in 20th century. P/NP or letter grading.

**145A-145B. U.S. Urban History. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **145A.** U.S. Cities: Overview. Demographic, geographic, political, economic, and social development of U.S. cities in relation to broad trends in U.S. history as well as to their own more special histories. Emphasis on mastery of facts and chronology, and awareness of major theoretical issues and fundamental concepts in urban history. **145B.** Topics in U.S. Urban History. Exploration of one aspect of U.S. urban history in depth without having to attend to basic chronology or geography. Topics include crime and police, urban economics, and urban government. Students do primary research papers based on local materials in addition to written examinations. May be repeated for maximum of 16 units with topic and/or instructor change.

**146A. American Working Class Movements. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Major episodes in social, trade union, and cultural history of American working class from Colonial times to present, with emphasis on both organized and unorganized labor, history of Knights of Labor, AFL-CIO, and development of labor politics. P/NP or letter grading.

**M146B. American Working Class Movements. (4)** (Formerly numbered 146B.) (Same as Labor Studies M105.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Major episodes in social, trade union, and cultural history of American working class from Colonial times to present, with emphasis on both organized and unorganized labor, history of Knights of Labor, AFL-CIO, and development of labor politics. P/NP or letter grading.

**146C. Migrant Nation: How Mobility Shapes American Society, Politics, and Culture. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Thematic and chronological survey of immigration and internal migration, cultures of racial and ethnic stratification, migrant political activism, and policies that govern migration, citizenship, and exclusion in U.S. P/NP or letter grading.

**146D. U.S. and Comparative Immigration History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Use of overlapping diaspora model that integrates North Atlantic (Europe), South Atlantic (Afro-Caribbean), Pacific (China/Japan/Hawaii), and Latin (Mexico to Brazil) worlds to provide chronological and analytic survey of American and comparative immigration from 1750 to present. Special focus on Southern California. P/NP or letter grading.

**M147C. History of Women in Colonial British America and Early U.S., 1600 to 1860. (4)** (Same as Gender Studies M147B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to major themes in history of early American women from initial confrontation of English and American Indian cultures in early 17th century to rise of women's rights movement in mid-19th century. P/NP or letter grading.

**M147D. History of Women in U.S., 1860 to 1980. (4)** (Same as Gender Studies M147D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to major themes in history of American women from abolition of slavery and Civil War to rise and consequences of second-wave feminism. P/NP or letter grading.

**M147E. History of Deaf Communities in America. (4)** (Same as American Sign Language M120.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study of history and culture of deaf communities in America (circa 1800 to present) by exploring major events impacting deaf people, including development of sign language, deaf education, audism, politics of deafness, eugenics, deaf revolution movements, and role of hearing technology. Historical development of emergence, growth,

and survival of America's deaf community and development of deaf identity over time. P/NP or letter grading.

**148. Introduction to Public/Applied History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. General survey of historical definitions of, and debates about, public and applied history, that is, history in non-academic settings across different periods and geographic regions. Survey supplemented with case studies drawn from historical research used to inform museum exhibitions, public policy, historic commemoration, digital projects, and documentary and popular media productions. Through assigned readings, analytical writing, and collaborative research, students engage with variety of approaches, tools, and media. Research on local historical topics to foster well-grounded understanding of how history is applied and interpreted in variety of places, settings, and media for variety of audiences and purposes. P/NP or letter grading.

**149A-149B. North American Indian History. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of Native Americans from contact to present, with emphasis on historical dimensions of culture change, Indian political processes, and continuity of Native American cultures. Focus on selected Indian peoples in each period. P/NP or letter grading. **149A.** Precontact to 1830; **149B.** 1830 to Present.

**M150A. Comparative Slavery Systems. (4)** (Same as African American Studies M158A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of slavery experiences in various New World slave societies, with emphasis on outlining similarities and differences among legal status, treatment, and slave cultures of North American, Caribbean, and Latin American slave societies. P/NP or letter grading.

**M150B-M150C. Introduction to Afro-American History. (4-4)** (Same as African American Studies M158B-M158C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of Afro-American experience, with emphasis on three great transitions of Afro-American life: transition from Africa to New World slavery, transition from slavery to freedom, and transition from rural to urban milieu. P/NP or letter grading.

**M150D. Recent African American Urban History: Funk Music and Politics of Black Popular Culture. (4)** (Same as African American Studies M150D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of musical genre known as funk that emerged in its popular form during late 1960s and reached popular high point, in black culture, during 1970s. Funk, fusion of gospel, blues, jazz, rhythm and blues, soul, rock, and many other musical styles, offer students unique window into recent African American history. P/NP or letter grading.

**M150E. African American Nationalism in First Half of 20th Century. (4)** (Same as African American Studies M158E.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Critical examination of African American search in first half of 20th century for national/group cohesion through collectively built institutions, associations, organized protest movements, and ideological self-definition. P/NP or letter grading.

**M151A. History of Chicano Peoples. (4)** (Same as Chicana/o and Central American Studies M159A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey lecture course on historical development of Mexican (Chicano) community and people of Mexican descent (Indio-Mestizo-Mulato) north of Rio through 17th, 18th, and 19th centuries, with special focus on labor and politics. Provides integrated understanding of change over time in Mexican community by inquiry into major formative historical forces affecting community. Social structure, economy, labor, culture, political organization, conflict, and international relations. Emphasis on social forces, class analysis, social, economic, and labor conflict, ideas, domination, and resistance. Developments related to historical events of

significance occurring both in U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and field research, and submission of paper. P/NP or letter grading.

**M151B. History of Chicano Peoples. (4)** (Same as Chicana/o and Central American Studies M159B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey lecture course on historical development of Mexican (Chicano) community and people of Mexican descent in U.S. through 20th century, with special focus on labor and politics. Provides integrated understanding of change over time in Mexican community by inquiry into major formative historical and policy issues affecting community. Within framework of domination and resistance, discussion deals with social structure, economy, labor, culture, political organization, conflict, and ideology. Developments related to historical events of significance occurring both in U.S. and Mexico. Lectures, special presentations, reading assignments, written examinations, library and/or field research, and submission of paper. P/NP or letter grading.

**M151C. Understanding Whiteness in American History and Culture. (4)** (Same as Chicana/o and Central American Studies CM182.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History, construction, and representation of whiteness in American society. Readings and discussions trace evolution of white identity and explore its significance to historical construction of race class in American history. Letter grading.

**M151D. Chicana Historiography. (4)** (Same as Chicana/o and Central American Studies M158 and Gender Studies M157.) Lecture, four hours. Examination of Chicana historiography, looking closely at how practice of writing of history has placed Chicanas into particular narratives. Using Chicana feminist approaches to study of history, revisiting of specific historical periods and moments such as Spanish Conquest, Mexican Period, American Conquest, Mexican Revolution, and Chicano Movement to excavate untold stories about women's participation in and contribution to making of Chicana and Chicano history. P/NP or letter grading.

**M151E. Latino Metropolis: Architecture and Urbanism in Americas. (4)** (Same as Chicana/o and Central American Studies M187 and Urban Planning M187.) Lecture, four hours. Introduction to history of architecture and urbanism in Americas, from fabled cities of Aztec empire to barrios of 21st-century Los Angeles and Miami. Emphasis on role of cities in Latina/Latino experience and uses of architecture and city planning to forge new social identities rooted in historical experiences of conquest, immigration, nationalization, and revolution. P/NP or letter grading.

**152. Asians in American History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study of politically troubling question of entry into U.S. of immigrants ineligible for citizenship and their citizen children in American history. P/NP or letter grading.

**153. American West. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study of West as frontier and as region, in transit from Atlantic seaboard to Pacific, from 17th century to present. P/NP or letter grading.

**154. History of California. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Economic, social, intellectual, and political development of California from earliest times to present. P/NP or letter grading.

**M155. History of Los Angeles. (4)** (Same as Chicana/o and Central American Studies M183.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Social, economic, cultural, and political development of Los Angeles and its environs from time of its founding to present. Emphasis on diverse peoples of area, changing physical environment, various interpretations of city, and Los Angeles' place among American urban centers. P/NP or letter grading.

**156. Topics in U.S. History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of specific historical themes and/or major issues in U.S. history. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**157A. Early Latin America. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Advanced survey of Latin American history from conquest to independence, with emphasis on society, culture, and ethnic aspects. P/NP or letter grading.

**157B. Indians of Colonial Mexico. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of social and cultural history of Indians of Mexico, especially central Mexico, from time of European conquest until Mexican independence, with emphasis on internal view of Indian groups and patterns on basis of records produced by Indians themselves. P/NP or letter grading.

**159. Latin America in 19th Century. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Intensive analysis of economic, social, and political problems of Latin American nations from their independence to around 1910. P/NP or letter grading.

**160A. Latin American Eliteloire. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Eliteloire (defined as oral or noninstitutionalized knowledge involving leaders' conceptual and perceptual life history views) in contrast to folklore (followers' traditional or popular views). Eliteloire genres include oral history, literature, and cinema. P/NP or letter grading.

**160B. Mexican Revolution since 1910. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of concept of permanent crisis to describe and explain structure of permanent revolution under one-party democracy. Analysis of unresolved colonial and 19th-century problems and crises that have influenced modern-day Mexico, if in modified form. P/NP or letter grading.

**161. Topics in Latin America History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of major issues in history of Latin America. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**162A. Modern Brazil. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Selected topics in political, economic, social, and cultural development of Brazil, with emphasis on modernization and struggle for change, 1850 to present. Discussions, films, slides, and guest speakers supplement and complement lectures. P/NP or letter grading.

**162B. Brazil and Atlantic World, 1500 to 1822. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of development of colonial society in Brazil from discovery in 1500 to independence in 1822, placing it in context of Portugal's overseas expansion in Asia, Africa, and Americas. Emphasis on Portuguese, indigenous, and African roots of modern Brazil. P/NP or letter grading.

**162C. History of Argentina. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of economic, political, social, and cultural developments that have shaped Argentina from colonial time to present. Emphasis on 19th-century development of agro-export economy and 20th-century formation of mass society. P/NP or letter grading.

**164B. Topics in African History: Africa and Slave Trade. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one prior course in African history at UCLA. Designed for juniors/seniors. Social, economic, political, and cultural impact of slave trade on African society, with emphasis on Atlantic trade without neglecting those of ancient Mediterranean, Islamic, and Indian Ocean worlds. Abolition and African diaspora. P/NP or letter grading.

**164D. Topics in African History: Africa and Diaspora in Global and Comparative Perspective. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one prior course in African history at UCLA. Designed for juniors/seniors. Forced migration of Africans through overseas slave trade was formative event of modern world. Exploration of that experience and its lasting consequences by placing it in its global context—African, American, European, Islamic, and Asian. P/NP or letter grading.

**164E. Topics in African History: Africa, 1945 to Present. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one prior course in African history at UCLA. Designed for juniors/seniors. History of Africa south of Sahara from end of World War II to present. Last phases of colonial rule in Africa, African nationalism, Pan-Africanism, liberation movements, and achievement of independence. Political, social, and economic change in colonies and in independent states of Africa. Neocolonialism, experiments in national development, apartheid in South Africa, ideological conflict in contemporary Africa, and Africa in world affairs since 1957. P/NP or letter grading.

**165. Topics in African History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of specific historical themes and/or major issues in African history. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**165SL. Service Learning and Historical Understanding in South Africa. (4)** Fieldwork, six hours. Students participate in two service learning projects in South Africa to help them understand ongoing historical legacy of apartheid in South Africa, differences between urban and rural poverty, and link between rural poverty and urban overcrowding. Students work directly with families and children under guidance of local community organizers. Offered in summer only. Letter grading.

**166A-166B. History of West Africa. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **166A.** West Africa, Earliest Times to 1800; **166B.** West Africa since 1800.

**167A. History of Northeast Africa. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of history of Ethiopia, Sudan, and Somalia in regional context of northeast Africa from earliest times to present, with emphasis on economy and society, evolution of state, and significance of Christianity and Islam. P/NP or letter grading.

**167B. History of East Africa. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of cultural diversity of east Africa from earliest times to growth of complex societies, its place within wider Indian Ocean system, and colonial conquest to gaining of independence and postcolonial challenges. P/NP or letter grading.

**167C. History of Central Africa. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of history of central Africa from earliest times, with emphasis on establishment of agriculture, growth of trade, rise of states, and incorporation of region into world economy. P/NP or letter grading.

**168A-168B. History of Southern Africa. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Attention to social and economic as well as political aspects. P/NP or letter grading. **168A.** Origins to 1870. Origins of South African peoples and their interactions to 1870. **168B.** Since 1870. Interactions between inhabitants of southern Africa since 1870.

**169A-169B. Thought and Society in China. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **169A.** To 1000. Recommended preparation: course 11A. Elite and popular expressions of Chinese cultural life examined in readings and lectures. Focus on diversities of thought in classical legacy and their evolution under impact of Buddhism to 1000. Emphasis on intersections between intellectual life and social, political, and economic conditions.

**169B.** Since 1000. Recommended preparation: course 11B. Elite and popular expressions of Chinese cultural life from 1000 to 20th century. Emphasis on social, political, and economic conditions within which Chinese orthodox and heterodox values evolved and changed. Evaluation of iconoclasm of Chinese intellectual life in 20th century in light of earlier currents of thought.

**170A. Culture and Power in Late Imperial China. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: courses 11A, 11B. Designed for juniors/seniors. Analysis of relations of power and cultural expressions of dominance and resistance in late imperial China (1000 to 1700), with emphasis on interplay of economic forces, ideas, and social and political institutions. Examination of institutions of state, family, school, and city; idioms of folk religion, death, and afterlife; political, legal, and medical discourses of body, personhood, and social identity; love, sexuality, and private life. P/NP or letter grading.

**170B. Selected Topics in Chinese History from 1500. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended requisite: course 11B. Designed for juniors/seniors. Selected topics that may vary from year to year. Recent offerings include law, society, and culture; society and economy; and rural China. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**M170C. History of Women in China, AD 1000 to Present. (4)** (Same as Gender Studies M170C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Topics include women and family, women in Confucian ideology, women in literati culture, feminist movement, and women and communist revolution. P/NP or letter grading.

**170D. 20th-Century China. (4)** Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: course 11B. Designed for juniors/seniors. Political events and intellectual developments seen in context of social-economic trends; human agency, structural change, and historical conjunctures in 20th century. P/NP or letter grading.

**170E. Economic History of China. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of development of Chinese economy and social, technological, intellectual, and political dynamics that produced distinctive patterns in evolution of China's economy from antiquity to present day. P/NP or letter grading.

**171. Variable Topics in Japanese History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Important topics in Japanese history, including political change, economic development, social questions, and popular culture, as well as media and arts, explored through extensive readings. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**172A. Japan—Ancient and Medieval History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political, economic, and cultural development of Japan from prehistory to 1600. P/NP or letter grading.

**172B. Japanese History: Early Modern, 1600 to 1868. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political, economic, and cultural development of Japan from 1600 to 1868. P/NP or letter grading.

**172C. Modern Japanese History, 1850 to 1945. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Investigation of meaning of modern "Japan" for newly national (and imperial) populace, and resistance to consequent radical upheavals in daily experience, both in Japan and Asia. Exploration of meaning of "modern" and fraught interplay of imperial and anticolonial ambitions in domestic and foreign politics. World War II experience and radical and conservative effects of Allied Occupation. Foregrounding of professional practice of history and historical creation of categories, practices, and perspectives that have become second nature (i.e., linear time, nation, and modern social norms). Topics

also include gender, sexuality, aesthetics, fascism, eugenics and race, hygiene, bloodsucking, monsters, anarchism, time, colonialism, feminism, art, censorship, protest, and Cold War. Socratic-style discussion in lecture. P/NP or letter grading.

**173A. Japanese Popular Culture. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Topics in 18th-, 19th-, and 20th-century Japanese history, including legacy of premodern satire in postmodern comic books, American culture in 1930s' Japanese visual culture, gender in photography, and relationship of monster movies to postwar politics. P/NP or letter grading.

**M173B. Women in 20th-Century Japan. (4)** (Same as Gender Studies M173B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Japanese women in Japanese and world history through state documents, autobiographical voices, contemporary television, and other varying historical sources, including topics such as women and new political order (1900 to 1930), women, war, and empire (1930 to 1945), and women in consumer society (1980s to 1990s). P/NP or letter grading.

**M173C. Shinto, Buddhism, and Japanese Folk Religion. (4)** (Same as Religion M173C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Social dimension of various Ways, great and little: Shinto's connection with cultural nationalism, Buddhism's medieval Reformation and Zen's relation to warrior culture, folk religious aspects such as shamanism, ancestor worship, and millenarianism. P/NP or letter grading.

**173D. Postwar Japanese History through Film. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of postwar Japanese history through medium of film and film criticism. Much of postwar Japanese cinema can be seen as reflecting on and questioning place of Japan in world reshaped by catastrophic war and its lingering specter. Through screenings and critical discussion of select films spanning half-century following World War II, consideration of cultural, aesthetic, and sociopolitical significance of postwar as demarcated category in Japan. Reflection on ways in which filmic presentations of state of being postwar engaged with lived history, memory, and present time. P/NP or letter grading.

**174A. Early History of India. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to civilization and institutions of India. Survey of history and culture of South Asian subcontinent from earliest times to founding of Mughal Empire. P/NP or letter grading.

**174B. History of British India I. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of expansion of British rule, theories and practice of governance, constitution of India as oriental despotism, epistemological projects of state, and other modes by which British achieved conquest of knowledge. P/NP or letter grading.

**174C. Contemporary South Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political economy of imperialism and Britain's civilizing mission. Encounter, especially in terms of race and gender, between colonized and colonizers and to questions of resistance and nationalism. P/NP or letter grading.

**M174D. Indo-Islamic Interactions, 700 to 1750. (4)** (Same as Religion M174D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Historical introduction to Muslim communities of what eventually became nations of India, Pakistan, and Bangladesh. Topics include social, political, religious, and cultural history. P/NP or letter grading.

**M174E. Indo-Islamic Interactions, 1750 to 1950. (4)** (Same as Religion M174E.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of interplay of factors that, from Christian missionaries to Islamic madrasa schools and colonial rebellions, gave shape to multifaceted Muslim reformation in context of colonial modernity. P/NP or letter grading.

**174F. Gandhi and Making of Modern India. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of life and ideas of Mahatma Gandhi, known world over as prophet of nonviolence and principal architect of Indian independence movement. Gandhi was also spiritual thinker, social reformer, critic of Western modernity, interpreter of Indian civilization, staunch supporter of Indian syncretism, voluminous writer, and forerunner, not only in India, but of many great social and ecological movements of our times. Focus on Gandhi's idea of *satyagraha*, resistance to oppression through truth (*satya*) and nonviolence (*ahimsa*), and his nonviolent campaigns against colonial rule, before moving to broader assessments of his life and thought, his critiques of modernity and industrial civilization, and his relationship to Indian nationalism. Discussion of feminist, Dalit (low-caste), Marxist, and modernist critiques of his ideas, and reflections on his place in modern India and global circulation of his ideas over last six decades. P/NP or letter grading.

**M174G. Indian Identity in U.S. and Diaspora. (4)** (Same as Asian American Studies M172A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of overseas Indian communities; transformations of Hinduism in diaspora; emergence of new diasporic art forms such as bhangra rap and chutney music; relations between Indians and other racial and ethnic groups; Indian women as embodiment of Indian culture; diasporic identities. P/NP or letter grading.

**175A. Cultural and Political History of Contemporary South Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Problem of modernity; partition of India and emergence of Pakistan; political, social, ecological, and women's movements; struggle for rights and conflicts of identity among Muslims, Hindus, and Sikhs; terrorism in Sri Lanka and Punjab; public culture, popular cinema, and street life. P/NP or letter grading.

**175C. Special Topics in Contemporary Indian History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Treatment of major issues in history of contemporary India. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**176A. History of Southeast Asia to 1815. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political and cultural history of peoples of Southeast Asia from earliest times to about 1815. P/NP or letter grading.

**176B. History of Southeast Asia: Southeast Asia since 1815. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. History of modern Southeast Asia, with emphasis on expansion of European influence in political and economic spheres, growth of nationalism, and process of decolonization. P/NP or letter grading.

**176C. Philippine History. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Social, cultural, and political history of Philippine societies from Spanish conquest through independence. Emphasis on questions of identity under colonialism, understanding Revolutions of 1896 and 1898, and politics of Philippine nationalist discourse. Readings include introduction to major issues in Philippine historiography and literature. P/NP or letter grading.

**176E. Vietnam: Past and Present. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of history and culture of Vietnam from about 700 BC to present, including political, social, and economic developments as well as international relations in post-1954 period. P/NP or letter grading.

**177A. National Histories of Southeast Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Variable topics with focus on history of one or more of Southeast Asia's nation-states: Indonesia, East Timor, Thailand, Cambodia, Burma, Laos, Malaysia, Singapore, Brunei, Philippines, Vietnam. P/NP or letter grading.

**177B. Comparative Histories of Southeast Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Variable topics with focus on history of Southeast Asia from thematic or comparative perspective. Topics may include history of human rights in Southeast Asia, gender and sexuality in island Southeast Asia, and economic history of Southeast Asia. P/NP or letter grading.

**M178. Introduction to History and Culture of Iranian Jews. (4)** (Same as Iranian M178 and Jewish Studies M178.) Lecture, three hours. Introduction to political, intellectual, cultural, and socioeconomic status of Iranian Jews. Exploration of history of Iranian Jews from ancient period throughout history, with focus on post-Middle Ages to present time. Topics, studied from perspective of Iranian cultural and intellectual history, include identity and status, religious tolerance versus forced conversion, Iranian Jewish emancipation, and dynamic symbiosis between Iranian Jews and other Iranians. P/NP or letter grading.

**179A. Variable Topics in History of Medicine. (4)** Lecture, three hours. Designed for juniors/seniors. Topics may include global health, biomedical technologies, gender and medicine, Chinese medicine, psychiatry and mental illness, medicine and empire, epidemics and infectious disease. May be repeated for maximum of 16 units with topic/instructor change. P/NP or letter grading.

**179B. History of Medicine: Foundations of Modern Medicine. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Cultural, scientific, and social context that shaped modern medicine from Renaissance to Romantic era. Topics include establishment of anatomy, physiology, and modern clinical medicine, mapping of human body, medical approach to mental illness, rise of anatomic-clinical method at Paris School. P/NP or letter grading.

**179C. Medicine and Society in 20th-Century America. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Sociohistorical look at changes in medical science, health and disease, and treatment practices in 20th century within context of development of hospitals and research institutions and of changing American society. Particular topics include antibodies and other wonder drugs, cancer research and treatment, mental illness, patient activism, and genetic medicine. P/NP or letter grading.

**180A. Topics in History of Science. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Topics may include science and colonialism, science and religion, environmental history, science in Enlightenment, development of theory of evolution, science and public policy, public nature of science. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**M180B. Historical Perspectives on Gender and Science. (4)** (Same as Gender Studies M180B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Historical cases illustrating how gender enters practices and concepts of science. Topics include gendered conceptions of nature, persona of man of science, role of women in scientific revolution, scientific investigations of women and feminine. P/NP or letter grading.

**180C. Science and Technology in 20th Century. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Development of science and technology and their impact on society. Industrialization, global scientific community, social Darwinism, atomic bomb and nuclear proliferation, Cold War and American science, environmentalism, molecular biology and genetic engineering. P/NP or letter grading.

**M181. Topics in Jewish History. (4)** (Same as Jewish Studies M181.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of major issues in Jewish history. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.



**M181SL. Jewish Thought, Politics, and Ethics: From Theory to Practice. (4)** (Same as Jewish Studies M181SL.) Lecture, three hours; fieldwork, two hours. Designed for juniors/seniors. History of Los Angeles, with special emphasis on pivotal roles Jews have played in shaping Los Angeles and role that Los Angeles has played in reshaping of Jewish identities, communities, and cultures. Exploration of themes related to regionalism in American Jewish history, comparative immigration and migration patterns, and frontiers and borderlands, while providing overview of historical methodologies and interpretation. Examination of ethical and methodological implications of writing history in digital age and learning how to read and analyze these new media works as primary and secondary historical texts. Opportunity to contribute to body of historical work related to Los Angeles Jewish history through required service work with community partners and development of digital public history projects. P/NP or letter grading.

**M182A. Ancient Jewish History. (4)** (Same as Jewish Studies M182A and Religion M182A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of social, political, and religious developments. P/NP or letter grading.

**M182B. Medieval Jewish History. (4)** (Same as Jewish Studies M182B and Religion M182B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of unfolding of Jewish history from rise of Christianity to expulsion of Jews from Spain in 1492. P/NP or letter grading.

**M182C. Modern Jewish History. (4)** (Same as Jewish Studies M182C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of early modern Jewish history beginning with enormously repercussive expulsion of Jews from Spain in 1492, followed by transformations in Jewish society and identity over five centuries in Europe and Middle East, and concluding with nationalism. P/NP or letter grading.

**183A-183B. Third Reich and Jews. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **183A.** History of modern anti-Semitic ideologies and movements. Rise of national socialism in Germany. Development and execution of Nazi anti-Jewish policy to outbreak of World War II. **183B.** Second World War. Implementation of Nazi plans for extermination of Jews in Nazi-dominated Europe. Life in Nazi-imposed ghettos. Forms of Jewish resistance. Fate of Jewish populations in occupied territories.

**M184A. Jewish Civilization: Encounter with Great World Cultures. (4)** (Same as Jewish Studies M184A and Religion M184A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of dynamic and millennia-old interaction of Jews with great world cultures. Creative adaptations that have lent Jewish culture its distinct and various forms. P/NP or letter grading.

**M184B. History of Anti-Semitism. (4)** (Same as Jewish Studies M184B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of origins and historical development of anti-Semitism. P/NP or letter grading.

**M184C. American Jewish Experience. (4)** (Same as Jewish Studies M184C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Experience of Jews in America, both historical and contemporary. P/NP or letter grading.

**M184D. History of Zionism and State of Israel. (4)** (Same as Jewish Studies M184D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of history of State of Israel from 1948 to present. P/NP or letter grading.

**185A. History of Religions: Myth. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Nature and function of myth in history of religion and culture. Examples selected from nonliterate as well as from other Asian and European traditions. P/NP or letter grading.

**185B. Religions of South and Southeast Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Topics vary from year to year and include religion of Veda; Brahmanism; (later) Hinduism. Consult Schedule of Classes for specifics. May be taken independently for credit. P/NP or letter grading.

**185C. Religions of South and Southeast Asia. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Topics vary from year to year and include Buddhism in India; religions of Java and Bali; nonliterate traditions of India and Southeast Asia. Consult Schedule of Classes for specifics. May be taken independently for credit. P/NP or letter grading.

**M185D. Religions of Ancient Near East. (4)** (Same as Ancient Near East M185D and Religion M185D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Main polytheistic systems of ancient Near East, with emphasis on Mesopotamia and Syria and with reference to religion of ancient Israel: varying concepts of divinity, hierarchies of gods, prayer and cult, magics, wisdom, and moral conduct. P/NP or letter grading.

**185E. Special Topics in History of Religions. (4)** Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Topics announced in Schedule of Classes and include ancient Germanic cults; Renaissance mysticism; mystics of low countries; goddesses; religion in secular age. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**M185F. History of Early Christians. (4)** (Same as Religion M186A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Christian movement from its origins to circa 160 CE, stressing its continuity/discontinuity with Judaism, various responses to Jesus of Nazareth, writings produced during this period, movement's encounters with its religious, social, and political world, and methods of research. P/NP or letter grading.

**M185G. Religious Environment of Early Christians. (4)** (Same as Religion M186B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Rich variety in religious practice and thought in Mediterranean world of 1st century CE as in context of developing Christian movement. Topics include Pharisees, Qumran, Philo, Stoics, Epicureans, traditional Greek and Roman religions, mysteries, astrology, magic, gnosticism, and emperor-worship. P/NP or letter grading.

**M185I. Jesus of Nazareth in Historical Research. (4)** (Same as Religion M186C.) Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: course M185F. Designed for juniors/seniors. Stimulated by significant post-Enlightenment historical evaluations, students are led into firsthand knowledge (in translation) of various multilayered sources for reconstruction of life, teaching, and initial impact of Jesus of Nazareth in his social, economic, political, and religious contexts. P/NP or letter grading.

**M186A. Women and Gender, Prehistory to 1792. (4)** (Same as Gender Studies M186A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of history of women, gender, and sexuality from prehistory to 1792. First half deals with period before written history and asks when did gender appear? How and why did patriarchy develop? Topics include evolution of women's bodies, appearance of gender, women's contribution to Neolithic revolution, significance of Goddess artifacts, creation myths, and women and sexuality in different religions. Consideration of effects of European conquest on Mesoamerican women, women's power in monarchies, gender dimensions of Atlantic slavery, and first manifestations of feminist consciousness in second half. Objects or texts created by women examined or read throughout. P/NP or letter grading.

**M186B. Global Feminism, 1850 to Present. (4)** (Same as Gender Studies M186B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Introduction to movements for women's rights (educational, political, economic, sexual, and reproductive) around world and over one and one half centuries. P/NP or letter grading.

**187A-187M. Variable Topics Historiography Proseminars. (4 each)** Seminar, three hours. Proseminars on historiography involving close reading and critical discussion of secondary scholarship and primary sources on selected topics. Reading, discussion, and analytical writing culminating in one or several historiographical essays. May be repeated once for credit. P/NP or letter grading. **187A.** Ancient History; **187B.** Medieval; **187C.** Europe; **187D.** U.S.; **187E.** Latin America; **187F.** Near East; **187G.** East Asia; **187I.** Science/Technology; **187J.** Africa; **187L.** Jewish. **187M.** Southeast Asia.

**C187N-C187R. Topics in Historiography. (4 each)** Seminar, three hours. Proseminar on historiography involving close reading and critical discussion of secondary scholarship and primary sources on selected topics. Reading, discussion, and analytical writing culminating in one or several historiographical essays. May be repeated once for credit. P/NP or letter grading. **C187K.** History of Religions. May be concurrently scheduled with course C200P; **C187N.** India. May be concurrently scheduled with course C200K; **C187O.** World. May be concurrently scheduled with course C200F; **C187P.** Theory of History. May be concurrently scheduled with course C200Q; **C187R.** Japan. May be concurrently scheduled with course C200M.

**188. Special Courses in History. (2)** Lecture, two hours. Overview of various career paths for students with degrees in history. Helps students develop academic and professional skills in preparation for life after UCLA. Focus on ways in which one can apply historical concepts, research methodologies, and analytical skills to range of careers. Guest speakers discuss how they have applied their history degrees to their work outside of academia. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A-191Q. Capstone Seminars: History. (4 each)** Seminar, three hours. Designed for seniors. Limited to 15 students meeting with faculty member. Organized on topics basis with reading, discussion, and development of culminating project. May be repeated once for credit. P/NP or letter grading. **191A.** Ancient History; **191B.** Medieval; **191C.** Europe; **191E.** Latin America; **191F.** Near East; **191G.** East Asia; **191I.** Science/Technology; **191M.** Southeast Asia; **191Q.** Digital History.

**C191D-C191R. Topics in History. (4 each)** Seminar, three hours. Designed for seniors. Limited to 15 students meeting with faculty member. Reading and discussion of selected topics, and development of culminating project. May be repeated once for credit. P/NP or letter grading. **C191D.** U.S. May be concurrently scheduled with course C201H; **C191J.** Africa. (Formerly numbered 191J.) May be concurrently scheduled with course C201N; **C191K.** History of Religions. May be concurrently scheduled with course C201H; **C191L.** Jewish History. (Formerly numbered 191L.) May be concurrently scheduled with course C201R; **C191N.** India. (Formerly numbered 191N.) May be concurrently scheduled with course C201K; **C191O.** World. May be concurrently scheduled with course C201W; **C191P.** Historical Theory. May be concurrently scheduled with course C201Q; **C191R.** Japan. (Formerly numbered 191R.) May be concurrently scheduled with course C201M.

**M191DC. CAPP Washington, DC, Research Seminars. (8)** (Same as Communication M191DC, Political Science M191DC, Public Affairs M191DC, and Sociology M191DC.) Seminar, three hours. Limited to CAPP Program students. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**M194DC. Quarter in Washington, DC, Research Seminar. (4)** (Same as Political Science M194DC and Sociology M194DC.) Seminar, three hours. Limited to Quarter in Washington students and other students enrolled in UC Washington Center programs. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**195. Community or Corporate Internships in History. (4)** Tutorial, to be arranged; fieldwork, 8 to 10 hours. Limited to juniors/seniors. Internship in applied/public history setting coordinated through Public History Initiative. Students meet on regular basis with faculty supervisor, provide periodic reports of their experience, and write final research paper. Four units may be applied toward major requirements. Individual contract with supervising faculty member required. P/NP or letter grading.

**195CE. Community and Corporate Internships in History. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend bi-weekly meetings with graduate student instructor, and write final research paper. Faculty mentor and graduate student instructor construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major; units applied must be taken for letter grade. May not be applied toward concentration or distribution requirements. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195DC. Quarter in Washington, DC, Internships. (4)** (Same as Community Engagement and Social Change M195DC, Political Science M195DC, Public Affairs M195DC, and Sociology M195DC.) Tutorial, four hours. Limited to junior/senior Quarter in Washington program students. Internships in Washington, DC, through Center for American Politics and Public Policy. Students meet on regular basis with instructor and provide periodic reports of their experience. Individual contract with supervising faculty member required. P/NP grading.

**197. Individual Studies in History. (4)** Tutorial, three hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A. Honors Research in History. (4)** Tutorial, to be arranged. Course 198A is requisite to 198B, which is requisite to 198C. Limited to juniors/seniors. Development of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for maximum of 16 units. Individual contract required. Letter grading.

**198B. Honors Research in History. (4)** Tutorial, to be arranged. Requisite: course 198A. Limited to juniors/seniors. Continued development of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for maximum of 16 units. Individual contract required. In Progress grading (credit to be given only on completion of course 198C).

**198C. Honors Research in History. (4)** Tutorial, to be arranged. Requisite: course 198B. Limited to juniors/seniors. Completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for maximum of 16 units. Individual contract required. Letter grading.

**199. Directed Research in History. (4)** Tutorial, three hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit; History majors limited to 8 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A-200U. Advanced Historiography. (4 each)** Seminar, three hours. May be repeated for credit. **200A.** Ancient Greece; **200B.** Ancient Rome; **200C.** Medieval; **200D.** Europe; **200H.** U.S.; **200I.** Latin America; **200J.** Near East; **200L.** China; **200N.** Africa; **200O.** Science/Technology; **200Q.** Theory of History; **200R.** Jewish History; **200S.** Armenia and Caucasus; **200T.** Southeast Asia; **200U.** Psychohistory.

**C200F-C200Q. Topics in Historiography. (4 each)** Seminar, three hours. Designed for graduate students. Proseminar on historiography involving close reading and critical discussion of secondary scholarship and primary sources on selected topics. Reading, discussion, and analytical writing culminating in one or several historiographical essays. May be repeated for credit. S/U or letter grading. **C200F.** World. May be concurrently scheduled with course C187O; **C200K.** India. May be concurrently scheduled with course C187N; **C200M.** Japan. May be concurrently scheduled with course C187R; **C200P.** History of Religions. (Formerly numbered 200P.) May be concurrently scheduled with course C200P; **C200Q.** Theory of History. May be concurrently scheduled with course C187P.

**M200V. Advanced Historiography: Afro-American. (4)** (Same as African American Studies M200A.) Seminar, three hours. May be repeated for credit. S/U or letter grading.

**M200W. Advanced Historiography: American Indian Peoples. (4)** (Same as American Indian Studies M203.) Lecture, 90 minutes; seminar, 90 minutes. Introduction to culture-histories of North American Indians and review of Indian concepts of history. Stereotypical approach to content and methodologies related to Indian past that is interdisciplinary and multicultural in its scope. Letter grading.

**200X. Advanced Historiography: Oral History. (4)** Seminar, three hours. Introduction to practice, method, and theory of oral history.

**200Y. Advanced Historiography: Application of Economics to History. (4)** Discussion, three hours.

**200Z. Advanced Historiography: Chicano. (4)** Discussion, three hours. Graduate survey of leading literature in Chicano history, with emphasis on new methodological and theoretical approaches in the field.

**201A-201V. Topics in History. (4 each)** Seminar, three hours. Graduate courses involving reading, lecturing, and discussion of selected topics. May be repeated for credit. When concurrently scheduled with course 191, undergraduates must obtain consent of instructor to enroll. S/U or letter grading. **201A.** Ancient Greece; **201B.** Ancient Rome; **201C.** Medieval; **201D.** Early Modern Europe; **201E.** Modern Europe; **201F.** Russia/Eastern Europe; **201G.** Britain; **201I.** Latin America; **201J.** Near East; **201L.** China; **201O.** Science/Technology; **201S.** Armenia and Caucasus; **201T.** Southeast Asia; **201U.** Psychohistory; **201V.** Digital History.

**C201H-C201W. Topics in History (4 each)** Seminar, three hours. Designed for graduate students. Reading and discussion of selected topics. May be repeated for credit. May be concurrently scheduled with course C191D-C191P. S/U or letter grading. **C201H.** U.S. May be concurrently scheduled with course C191D; **C201K.** India. (Formerly numbered 201K.) May be concurrently scheduled with course C191N; **C201M.** Japan. (Formerly numbered 201M.) May be concurrently scheduled with course C191R; **C201N.** Africa. (Formerly numbered 201N.) May be concurrently scheduled with course C191J; **C201P.** History of Religions. May be concurrently scheduled with course C191K; **C201Q.** Theory of History. (Formerly numbered 201Q.) May be concurrently scheduled with course C191P; **201R.** Jewish History. (Formerly numbered 201R.) May be concurrently scheduled with course C191L; **C201W.** World. May be concurrently scheduled with course C191O.

**202A-202B. Seminars: Comparative Modern Economic History. (4-4)** Seminar, three hours. Course 202A is requisite to 202B. Designed for graduate students. Study of problems of modern economics in the 19th and 20th centuries, including such topics as industrialization, growth, demography, development, and economic change. In Progress (202A) and letter (202B) grading.

**203A-203B. Social Theory and Comparative History. (4-4)** Seminar, three and one half hours every other week. Introduction to historically rooted social theory and theoretically sensitive history, following program of Center for Social Theory and Comparative History. Each course may be taken independently for credit. S/U or letter grading.

**203C. Theories in Cultural History. (4)** Seminar, three hours. Introduction to social, linguistic, semiotic, or other new interpretive theories and practices developed in other fields and applied to historical material. Letter grading.

**204A. Departmental Seminar: Approaches, Methods, Debates, Practice. (4)** Seminar, three hours. Required of all first-year departmental graduate students. Introduction to range of important methodological approaches and theoretical debates about writing of history that are influential across fields, geographical contexts, and temporal periods to stimulate conversation and connection across fields, inviting students to think collectively and expansively about study and praxis of history. Introduction to sampling of scholarship produced by department faculty members with whom students may work. S/U or letter grading.

**204B. Departmental Seminar: Many Professions of History (4)** Seminar, three hours. Professional development seminar with practicum component. Focus primarily on exploring and demonstrating ways in which skills of historians are transferable to variety of professions and exercised in diverse ways and roles. Discussion of actual and possible roles and responsibilities of historians in 21st-century society. Examination of where historians have been, where they are now, where they can be, and where they should be as highly educated, actively engaged members of society. Collaborative project required. S/U or letter grading.

**205A-205B. History Department Professional Development Seminars. (1-1)** Seminar, one hour. Course 205A is requisite to 205B. Limited to history doctoral students. Introduction to issues in professional development of students in History PhD program. In Progress (205A) and S/U (205B) grading.

**206A-206B. Seminars: Near East History. (4-4)** Seminar, three hours. Course 206A is requisite to 206B. In Progress (206A) and letter (206B) grading.

**C208A-C208B. Variable Topics: Interdisciplinary Studies. (4-4)** Lecture, three hours; discussion, one hour (when scheduled). Course C208A is not requisite to C208B. Topics may include gender, world history, masculinity, and economic history. May be repeated for credit with topic change. Concurrently scheduled with courses C101A-C101B. S/U or letter grading.

**M210. Topics in Ancient Iranian History. (4)** (Same as Ancient Near East M208 and Iranian M210.) Seminar, three hours. Varying topics on Elamite, Achaemenid, Arsacid, and Sasanian history. May be repeated for credit. S/U or letter grading.

**211A-211B. Seminars: Armenian History. (4-4)** Seminar, three hours. Course 211A is requisite to 211B. In Progress (211A) and letter (211B) grading.

**212. Methods in Armenian Oral History. (4)** Seminar, three hours. Uses and techniques of Armenian oral history; preinterview, interview, and postinterview procedures; methods of compilation and evaluation. Field assignments, interviews, and summaries and/or paper based on interviews. S/U or letter grading.

**213A-213B. History of Women, Men, Sexuality. (4-4)** Seminar, three hours. S/U or letter grading. **213A.** Readings include historiography and theory, as well as classic and new historical studies drawn widely from U.S., European, Latin American, Middle Eastern, and Asian history to have diversity of interests and perspectives represented and discussed. **213B.** Enforced requisite: course 213A. Research, analysis, drafting, and rewriting of student final papers.

**213C. History of Women, Men, and Sexuality Historiography. (4)** Seminar, three hours. Limited to graduate students. Exposure to newest branch of gender history: study of masculinity. Focus not on men per se, but on values, practices, and texts that constitute masculinity as one gender. Readings focus on broad range of chronological periods from antiquity to 20th century and geographical areas including Americas, Asia, Europe, and Middle East. S/U or letter grading.

**213D. Women's and Gender History. (4)** Seminar, three hours. Limited to graduate students. Focus on history of women and gender. Content is international, with emphasis on transnational histories and approaches. S/U or letter grading.

**214. Topics in World History. (4)** Seminar, three hours. Graduate seminar utilizing world-historical perspective to examine variety of broad themes in human history. Topics vary annually. Letter grading.

**215A-215B. Seminars: Ancient History. (4-4)** Seminar, three hours. Course 215A is requisite to 215B. In Progress (215A) and letter (215B) grading.

**216A-216B. Seminars: Byzantine History. (4-4)** Seminar, three hours. Course 216A is requisite to 216B. In Progress (216A) and letter (216B) grading.

**217. Sources and Handbooks of Medieval History. (4)** Seminar, three hours. Preparation: reading knowledge of German or French. Introduction to types of medieval source materials and the handbooks needed to use them.

**M218. Paleography of Latin and Vernacular Manuscripts, 900 to 1500. (4)** (Same as Classics M218, English M215, and French M210.) Lecture, three hours; discussion, two hours. Introduction to history of Latin and vernacular manuscript book from 900 to 1500 to (1) train students to make informed judgments with regard to place and date of origin, (2) provide training in accurate reading and transcription of later medieval scripts, and (3) examine manuscript book as witness to changing society that produced it. Focus on relationship between Latin manuscripts and vernacular manuscripts with regard to their respective presentation of written texts. S/U or letter grading.

**221A-221B. Seminars: Medieval History. (4-4)** Seminar, three hours. Course 221A is requisite to 221B. In Progress (221A) and letter (221B) grading.

**225. Colloquium for Entering Graduate Students in Modern European History. (4)** Seminar, three hours. Normally limited to and required of all modern European history graduate students. Introduction to topics, methods, and historiography of modern European history.

**226A-226B. Seminars: Italian Renaissance. (4-4)** Seminar, three hours. Course 226A is requisite to 226B. In Progress (226A) and letter (226B) grading.

**227A-227B. Seminars: Reformation. (4-4)** Seminar, three hours. Course 227A is requisite to 227B. In Progress (227A) and letter (227B) grading.

**229A-229B. Seminars: Early Modern European History. (4-4)** Seminar, three hours. Course 229A is requisite to 229B. In Progress (229A) and letter (229B) grading.

**M230A-M230B. Seminars: Modern European History. (4-4)** (Same as Art History M230B-M230C.) Seminar, three hours. Course M230A is requisite to M230B. May be repeated for credit with consent of adviser. In Progress (M230A) and letter (M230B) grading.

**231A-231B. Seminars: Modern European Intellectual and Cultural History. (4-4)** Seminar, three hours. Course 231A is requisite to 231B. In Progress (231A) and letter (231B) grading.

**232A-232B. Seminars: French History of 19th and 20th Centuries. (4-4)** Seminar, three hours. Course 232A is requisite to 232B. In Progress (232A) and letter (232B) grading.

**233A-233B. Seminars: Russian/Soviet History. (4-4)** Seminar, three hours. Course 233A is requisite to 233B. In Progress (233A) and letter (233B) grading.

**234A-234B. Seminars: Modern History of Spain, Portugal, and Italy. (4-4)** Seminar, three hours. Course 234A is requisite to 234B. In Progress (234A) and letter (234B) grading.

**235A-235B. Economic History of Europe, 1780 to 1939. (4-4)** Seminar, three hours. Course 235A is requisite to 235B. Analysis of internationalization of European world economy, emergence of Western core and its relation with European peripheries. Comparative analysis on different regions, stressing main characteristics of postwar European economy. In Progress (235A) and letter (235B) grading.

**235C-235D. Economic History of 20th-Century Europe. (4-4)** Seminar, three hours. Course 235C is requisite to 235D. Cyclical trend, various economic regimes, and integration process of Europe. In Progress (235C) and letter (235D) grading.

**M236A. Proseminar: Political Psychology. (4)** (Same as Political Science M261A and Psychology M228A.) Seminar, three hours. Introduction to political psychology: psychobiography, personality and politics, mass attitudes, group conflict, political communication, and elite decision making.

**236B-236C. Seminars: Psychohistory. (4-4)** Seminar, three hours. Course 236B is requisite to 236C. Exploration of individual and group psychological processes and their uses in historical research. In Progress (236B) and letter (236C) grading.

**239A-239B. Seminars: English History—Middle Ages. (4-4)** Seminar, three hours. Course 239A is requisite to 239B. In Progress (239A) and letter (239B) grading.

**240A-240B. Seminars: English History—Modern History. (4-4)** Seminar, three hours. Course 240A is requisite to 240B. In Progress (240A) and letter (240B) grading.

**241A-241B. Seminars: German History. (4-4)** Seminar, three hours. Course 241A is requisite to 241B. Designed for graduate students. In Progress (241A) and letter (241B) grading.

**242. Colloquium: European History. (2)** Designed for graduate students. Forum for critical discussion of work of students and invited scholars. Presentation of student dissertation prospectuses during their third or fourth year in residence. S/U grading for students presenting papers.

**244A-244B. Seminars: British Empire History. (4-4)** Seminar, three hours. Course 244A is requisite to 244B. In Progress (244A) and letter (244B) grading.

**245. Colloquium: U.S. History. (4)** Seminar, three hours. Normally limited to and required of all entering graduate students in U.S. history. Critical introduction to historical method, with emphasis on new methodological and conceptual approaches, use of source materials, and current state of U.S. historiography.

**246A-246B-246C. Introduction to U.S. History. (4-4-4)** Seminar, three hours. Graduate survey of significant literature dealing with U.S. history from the Colonial period to the present. Each course may be taken independently for credit. **246A.** Colonial Period; **246B.** 1790 to 1900; **246C.** 20th Century.

**247A-247B. Seminars: Early American History. (4-4)** Seminar, three hours. Course 247A is requisite to 247B. In Progress (247A) and letter (247B) grading.

**M248. Anthropology and History of Mediterranean. (4)** (Same as Anthropology M248 and Near Eastern Languages M248.) Seminar, three hours. Introduction to historical and anthropological writings about Mediterranean. Draws on variety of classic and contemporary theories, histories, and ethnographies about Mediterranean Sea. Topics include geographical and imaginary boundaries, Mediterranean honor/shame concepts, colonial and post-colonial Mediterranean, Levantinism, thalassology, Mediterraneanism, French Mediterraneanism, Jewish Mediterranean, colonial and post-colonial sea and migrants and mobilities. Focus on critical history of anthropological study of Mediterranean and scholarly literature that emphasizes southern shores of Mediterranean. Letter grading.

**249A-249B. Seminars: Jacksonian America. (4-4)** Seminar, three hours. Course 249A is requisite to 249B. In Progress (249A) and letter (249B) grading.

**250A-250B. Seminars: U.S. History of Middle 19th Century. (4-4)** Seminar, three hours. Course 250A is requisite to 250B. In Progress (250A) and letter (250B) grading.

**251A-251B. Collaborative Research Seminars: American History. (4-4)** Seminar, three hours. Research seminars taught jointly by two faculty members. In Progress (251A) and letter (251B) grading. **251A.** Common readings and development of individual research projects. **251B.** Requisite: course 251A. Research, writing, and critical discussion of draft papers.

**252A-252B. Seminars: Recent U.S. History to 1930. (4-4)** Seminar, three hours. Course 252A is requisite to 252B. In Progress (252A) and letter (252B) grading.

**253A-253B. Seminars: Recent U.S. History since 1930. (4-4)** Seminar, three hours. Course 253A is requisite to 253B. In Progress (253A) and letter (253B) grading.

**254A-254B. Seminars: U.S. Social and/or Intellectual History. (4-4)** Seminar, three hours. Course 254A is requisite to 254B. In Progress (254A) and letter (254B) grading.

**255A-255B. Business Enterprise and American Culture. (4-4)** Seminar, three hours. Course 255A is requisite to 255B. In Progress (255A) and letter (255B) grading.

**256A-256B. Seminars: America in World. (4-4)** Seminar, three hours. Course 256A is requisite to 256B. In Progress (256A) and letter (256B) grading.

**M256C. Political Economy of Race. (4)** (Same as African American Studies M200B.) Seminar, four hours. Examination of historiography of history of capitalism and history of African diaspora, especially in their overlapping concerns with organization of race and racial states in contemporary world, development of modern imperialism—and emergence of global Black resistance to both. Themes and topics considered may include capitalism and question of slavery; law, regulations, and legal pluralism in organization of markets and nations; uneven development and nature of Black sovereignty; history of regimes of gender and sexuality in social and capital reproduction; modalities of capital accumulation and production of space; racial violence and territorial expansion; emancipation and growth of empire; history of finance capital and its discourses of debt; capitalism and history of anti-Blackness; racism, neoliberalism, and governmentality; and emergence and content of Black radical tradition and its critiques of racial capitalism. S/U or letter grading.

**257A-257B. Seminars: U.S. Urban History. (4-4)** Seminar, three hours. Course 257A is requisite to 257B. In Progress (257A) and letter (257B) grading.

**258A-258B. Seminars: Working Class History. (4-4)** Seminar, three hours. Course 258A is requisite to 258B. In Progress (258A) and letter (258B) grading.

**M259A-M259B. History of Women. (4-4)** (Same as Gender Studies M259A-M259B.) Seminar, three hours. Course M259A is requisite to M259B. History of women's social and political issues seen in U.S. and comparative context. In Progress (M259A) and letter (M259B) grading.

**260A-260B. Seminars: Native American History. (4-4)** Seminar, three hours. Course 260A is requisite to 260B. In Progress (260A) and letter (260B) grading.

**M260C. Native American Revitalization Movements. (4)** (Same as Anthropology M238.) Lecture, two hours; discussion, one hour. Examination of revitalization movements among native peoples of North America (north of Mexico). Specific revitalization includes Handsome Lake, 1870 and 1890 Ghost Dances, and Peyote Religion. Letter grading.

**261A-261B. Seminars: Afro-American History. (4-4)** Seminar, three hours. Course 261A is requisite to 261B. Social and political history of the Afro-American, including emphasis on development and structure of race relations in America; racial concepts and dilemmas, black and white. In Progress (261A) and letter (261B) grading.

**262A-262B. Seminars: Chicano History. (4-4)** Seminar, three hours. Course 262A is requisite to 262B. In Progress (262A) and letter (262B) grading.

**263A-263B. Seminars: History of American West. (4-4)** Seminar, three hours. Course 263A is requisite to 263B. In Progress (263A) and letter (263B) grading.

**M264. History of American Education. (4)** (Same as Education M201C.) Discussion, three hours. History of educational thought and of social forces impinging on American education from 1880s to present. Analysis of relation between these ideas and forces, and aims and practices of American education today. S/U or letter grading.

**266A-266B. Seminars: Colonial Latin American History. (4-4)** Seminar, three hours. Course 266A is requisite to 266B. In Progress (266A) and letter (266B) grading.

**M266C. Analyzing Historical Texts. (4)** (Same as Indo-European Studies M238 and Linguistics M238.) Seminar, four hours. Designed for graduate students. Analysis of linguistic structure and ethnohistorical context of legal and other documents written by native-speaking scribes and translators. Topics include paleographic technique and text analysis software. May be repeated for credit. S/U grading.

**267A-267B. Seminars: Latin American History, 19th and 20th Centuries. (4-4)** Seminar, three hours. Course 267A is requisite to 267B. In Progress (267A) and letter (267B) grading.

**M268A-M268B. Seminars: Recent Latin American History. (4-4)** (Same as Latin American Studies M268A-M268B.) Seminar, three hours. Course M268A is requisite to M268B. Reading knowledge of Spanish and Portuguese normally required. Seminar devoted to selected topics of interdisciplinary nature. In Progress (M268A) and letter (M268B) grading.

**275A-275B. Colloquia: African History. (4-4)** Seminar, three hours. Designed for all entering and continuing graduate students in African history. Source identification, research methodologies, historiographical traditions, historical interpretation, approaches to teaching, and research design. Forum for critical discussion of dissertation prospectuses and work in progress. Each course may be taken independently for credit. S/U or letter grading.

**M280. China Studies: Discipline, Methods, Debates. (2)** (Same as Chinese M202.) Seminar, two hours. Introduction to study of China as practiced in humanities and social sciences disciplines. S/U grading.

**M281. China—Seminar: Classical Historiography and Readings in Classical Studies. (4)** (Same as Chinese M201.) Discussion, three hours. Preparation: two years of classical Chinese or working knowledge of classical Chinese. Readings in historiography and selected genres of historical documents. Letter grading.

**282A-282B. Seminars: Chinese History. (4-4)** Seminar, three hours. Course 282A is requisite to 282B. In Progress (282A) and letter (282B) grading.

**285A-285B. Seminars: Japanese History. (4-4)** Seminar, three hours. Course 285A is requisite to 285B. In Progress (285A) and letter (285B) grading.

**M286. Japan in Age of Empire. (4)** (Same as Anthropology M247P and Asian M292.) Seminar, three hours. Designed for graduate students. Since late 19th century, Japan expanded its empire into East and Southeast Asia. Coverage of that period and array of anthropological studies conducted in Japan's colonies and occupied areas in this hardly explored area of study of colonialism. S/U or letter grading.

**M287. Central Asian Studies: Discipline, Methods, Debates. (2)** (Same as Anthropology M247Q and Near Eastern Languages M287.) Seminar, two hours. Introduction to study of central Asia as practiced in humanities and social sciences disciplines. S/U grading.

**288A-288B. Seminars: South Asia. (4-4)** Seminar, three hours. Course 288A is requisite to 288B. In Progress (288A) and letter (288B) grading.

**289A-289B. Seminars: Southeast Asia. (4-4)** Seminar, three hours. Course 289A is requisite to 289B. In Progress (289A) and letter (289B) grading.

**291A-291B. Seminars: Jewish History. (4-4)** Seminar, three hours. Course 291A is requisite to 291B. Studies in intellectual and social history of Jewish people from ancient times to modern period. In Progress (291A) and letter (291B) grading.

**293A-293B. Seminars: History of Religions. (4-4)** Seminar, three hours. Course 293A is requisite to 293B. In Progress (293A) and letter (293B) grading.

**294A-294B. Western Science, Religion, and Political Economy, 1600 to 1830. (4-4)** Seminar, three hours. Study of science integrated within matrix of religious belief commonplace in early modern Europe and, to a lesser extent, in American colonies. Examination of relationship of both cultural matrices to political and economic change. S/U or letter grading.

**295. Theories of Scientific Change. (4)** Seminar, three hours. Historical and philosophical perspectives on science, focusing on rationality of scientific change and logic and psychology of scientific discovery. Readings and seminar-style discussions of such authors as Popper, Kuhn, Toulmin, Lakatos, Holton, Buchdahl, Feyerabend, and others.

**297A-297B. Seminars: History of Science. (4-4)** Seminar, three hours. Course 297A is requisite to 297B. In Progress (297A) and letter (297B) grading.

**M299. Interdisciplinary American Studies. (6)** (Same as English M299.) Discussion, four hours. Readings, discussion, and papers on common theme, team-taught by faculty members from different departments. Topics vary according to participating faculty. May be repeated for credit with consent of instructors. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**490. Writing Workshop for Graduate Students. (4)** Tutorial, three hours. Writing workshop on students' papers-in-progress. Analysis and group discussion of rhetorical and stylistic principles, illustrated in students' own and in professional historians' work, help students improve their own writing. May be repeated once. S/U grading.

**495. Teaching History. (4)** Seminar, to be arranged. Designed for graduate students. Required of all new teaching assistants. Lectures, readings, discussions, and practice teaching sessions within the structure of a seminar. Students receive unit credit toward full-time equivalence but not toward the nine-course requirement for MA degree. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and

graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Studies. (1 to 8)** Limited to graduate students. Individual directed reading arranged with professor. MA candidates may take this course only once. Number of times PhD candidates may take this course is subject to consent of graduate studies committee. S/U or letter grading.

**597. Directed Studies for Graduate Examinations. (1 to 8)** Preparation for MA comprehensive examination or PhD qualifying examinations. S/U grading.

**599. PhD Research and Writing. (1 to 8)** Preparation: advancement to PhD candidacy. S/U grading.

## HONORS COLLEGIUM

*College of Letters and Science*

A311 Murphy Hall  
Box 951414

Los Angeles, CA 90095-1414

**Honors Collegium**

310-825-1553

**Program e-mail**

Maria (Maite) T. de Zubiaurre, PhD, *Chair*

## Faculty Committee

Maria (Maite) T. de Zubiaurre, PhD (*European Languages and Transcultural Studies, Spanish and Portuguese*)

Robert B. Goldberg, PhD (*Molecular, Cell, and Developmental Biology*)

Christina G.S. Palmer, PhD (*Human Genetics, Psychiatry and Biobehavioral Sciences, Society and Genetics*)

Zrinka Stahuljak, PhD (*Comparative Literature, European Languages and Transcultural Studies*)

Christopher C. Tilly, PhD (*Sociology, Urban Planning*)

Aaron Tornell, PhD (*Economics*)

Aradhna K. Tripathi, PhD (*Atmospheric and Oceanic Sciences; Earth, Planetary, and Space Sciences; Environment and Sustainability*)

## Overview

The Honors Collegium is a series of courses with an interdisciplinary emphasis designed for students enrolled in College Honors. It encourages animated discussion among students, as well as between students and professors and seeks to promote scholarly exchange across the major disciplines at UCLA. And it offers small classes and individual attention.

Each Honors Collegium course is staffed by a director who is distinguished in teaching and scholarship and may include a variable number of guest lecturers and additional specialists in their fields. Some courses satisfy general education requirements and serve as preparation for numerous majors in the College of Letters and Science. Counselors are available in the Honors Programs Office, A311 Murphy Hall, to advise and help students plan an integrated academic program.

Courses in the Honors Collegium are mainly interdisciplinary seminars, and the courses vary



each year. Refer to the [Schedule of Classes](#) for current course listings.

## Honors Collegium

### Lower-Division Courses

**1. Plague Culture. (5)** Seminar, three hours. Study of episodes and metaphors of plague in Western culture from ancients into age of AIDS. Topics include scripture, ancient tragedy, Black Death, realist novel, high aesthetic metaphors of plague, Nazi propaganda, existential and absurdist thought, postwar cinema, contemporary American theater, and modern science and medicine. P/NP or letter grading.

**2. Comparative Genocide. (4)** Lecture, four hours; discussion, one hour. Social comparative study of genocide, combining theoretical concepts with case studies (such as Armenia, the Holocaust, American Indians, Uganda under Amin and Obote, etc.). P/NP or letter grading.

**3. Personal Brain Management. (5)** Seminar, four hours. Designed for College Honors students. Available psychotherapies, educational media, and drugs can alter our way of thinking. New wave of information technologies and biotechnologies is changing existing landscape. Survey of available tools that claim neuroplastic brain-changing effects, consideration of future developments, and engagement of students in discussion on ethical and philosophical implications of these developments. P/NP or letter grading.

**4. Welcome to Dark Side: Human Pathology in World Literature. (5)** Seminar, three hours. Designed for College Honors students. Exploration of various aspects of pathological human behavior and how they are portrayed in classic literary works. Spans disciplines of comparative literature (French, German, American Gothic, modern, English), medicine/psychiatry, and history. Major themes include fear and oppression; murder and infanticide; despair and suicide; barbarism and repression; hatred and revenge; incest and shame; jealousy and paranoia; madness and psychosis; sociopathy and evil. Elucidation of themes through texts, and discussion of each text in its historical and social context. Examination of pathological behaviors in context of their medical and psychiatric framework when they correspond to clinical diagnostic entity. Texts used as springboard to elaborate on recurrent themes in history of human civilization. P/NP or letter grading.

**5. Representing Cleopatra: History, Drama, and Film. (5)** Seminar, three hours. Examination of legendary queen of Egypt as seen by her contemporaries and study of origins of myths about her and ways in which subsequent cultures and eras have imagined her in literary, visual, and cinematic representations. P/NP or letter grading.

**6. Energy Issues: Before and Now. (5)** Seminar, three hours. Review of physics and chemistry of concepts of energy, history over ages of turning of discoveries into products in this area, including use of fossil fuel, and discussion of current energy issues, including alternative energies. P/NP or letter grading.

**7. Saint and Heretic: Joan of Arc and Gilles de Rais, History and Myth. (5)** Seminar, three hours. Examination of both history of Joan of Arc and Gilles de Rais and of way in which, over time, their histories became legends, driven by various agendas including national identity, beatification, and gender politics. P/NP or letter grading.

**8. Life, Death, and Everything in Between. (5)** Seminar, three hours. Designed for College Honors students. Literature course with classic texts used to explore various aspects of human condition as they relate to health and illness. Broad themes including creation, death, deformity, madness, contagion, infirmity, and alienation to be drawn from texts spanning Shakespeare to Plath. Texts selected to illuminate one central aspect of human experience to be examined in its historical context as well as in context of contemporary practice of medicine. Exploration of social,

philosophical, and ethical issues pertaining to each theme and timely and controversial aspects of modern healthcare. P/NP or letter grading.

**9. Visual Communication and Scientific Principles. (5)** Seminar, four hours. Opportunity for collaboration between those in science-related disciplines and those in art/humanities-related disciplines. New ways in which science can be visually communicated, using tools, techniques, and media that are typically outside science education. Science students learn innovative ways of presenting scientific data and design and design, media, and art students learn how to apply their skills to topics they might not usually address. P/NP or letter grading.

**10. Language and Gender: Introduction to Gender Differences and Stereotypes. (5)** Seminar, four hours; discussion, one hour. Designed for College Honors students. Prior knowledge of any foreign language not required. Introduction to language from sociological perspective of gender. Use of research and examples primarily in English, Japanese, and Russian to explore nature of and stereotypes about male and female genderlects and gendered language, as reflected in lexicon, language behavior, phonetics and intonation, and language acquisition and linguistic change. P/NP or letter grading.

**11W. Postmodern Literature and Culture. (5)** Seminar, three hours. Enforced requisite: English Composition 3. Exploration of literature (and some film, music, and fine art) that emerged after World War II in postmodern era. Postmodern literature and other postmodern cultural forms challenge master narratives or belief systems, fostering skepticism toward totalizing truth claims while encouraging us to embrace diverse perspectives and heterogeneous models of identity. Satisfies Writing II requirement. Letter grading.

**12. Sacred Form: Literature and Poetry in India from Bronze Age to Premodern Times. (4)** Seminar, three hours. Exploration of cultural and literary development in India from early religious poetry (prior to 1000 BC) to broad range of literary styles and diverse religious and philosophical movements through classical, medieval, and premodern period. P/NP or letter grading.

**13. Inquiry in Numbers. (5)** Seminar, four hours. Preparation: high school algebra. Designed for College Honors students. Teaches nonmathematicians to love mathematics and to see mathematics as mathematicians do, not as means to end, but as beautiful and artful in its own right, including elementary number theory and study of whole numbers. Development of rich and elegant theory of prime numbers, factorization, and modular arithmetic. P/NP or letter grading.

**14. Interaction of Science and Society. (5)** Seminar, three hours. Examination of interaction of science and society and effects of this interaction on history, development of societies, evolution of revolutionary ideas as modeled in Galileo, Darwin, and others, and selected contemporary issues such as genetic engineering and war against infectious diseases. P/NP or letter grading.

**15. Symmetry. (5)** Seminar, four hours. Symmetry is one of fundamental intellectual frameworks of civilization, one that permeates sciences, arts, and other endeavors. Symmetry as it appears in mathematics, physics, and biology. Connections to and discussion of visual arts and music. Guest speakers from art community to complement scientific point of view. P/NP or letter grading.

**16. Science of Singing Voice. (5)** Seminar, three hours. Study of methods, including computer laboratory work, of quantifying aspects of voice production. Study of students' own vocal productions as well as recorded samples of famous singers. P/NP or letter grading.

**17. Art, Entertainment, and Social Change. (5)** Seminar, three hours. Designed for College Honors students. Integrative examination of evolving impact of arts and entertainment industry on such various aspects of social change as environmental movements, politics and elections, economy, local politics, and community. P/NP or letter grading.

**18. Trial of Socrates. (5)** Seminar, three hours. Examination of life and times of Socrates and trial that led to his execution, including in-class staging. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to History and Philosophy of Science. (5)** Lecture, three hours; discussion, one hour. Exploration of difference between science and other systems of knowledge; study of history and philosophy of science and examination of its reliability as objective knowledge. P/NP or letter grading.

**21W. Rise and Fall of Modernism. (6)** Seminar, three hours; writing laboratory, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Study of early and middle 20th-century's attempt to construct significance in a general climate of disillusionment by way of literature, literary criticism, and other intellectual movements. Satisfies Writing II requirement. Letter grading.

**22. Comparative Odysseys. (5)** Seminar, three hours. Designed for College Honors students. Greek and Chinese classics have in common two modes of heroism: one glorifying prowess and another celebrating mental cunning. Both modes are associated principally with men motivated by piety and honor. Interrogation of these traditional constructions of heroic, particularly conflation of courage and violence. Readings include *Writer as Migrant* by Jin Ha, *Odyssey* by Homer, *Journey to West* by Anthony Yu, *Tripmaster Monkey* by Maxine Kingston, and *Ignorance* by Milan Kundera. P/NP or letter grading.

**23. Political Dissidence Today and in Ancient Greece: Trial and Death of Socrates in Its Classical and Legal Context. (5)** Seminar, three hours. Study of trial and death of Socrates by examining its relevance today to legal treatment of dissent and civil disobedience in the U.S. and to variety of contemporary theories and strategies of dissent. Introduction to Greek legal system, values that animated that system, and new ways to think about roles of law. P/NP or letter grading.

**24. We Could Be Heroes: Race, Gender, and the Contemporary Hero Narrative. (5)** Seminar, four hours. Ways in which hero narratives represent and work through issues of racial and gender identity. Interdisciplinary consideration of hero narratives in film alongside various literary and media arts genres including graphic novel, blaxploitation films, hip-hop concept music, animated television series, and novel. Critical reading and analysis of these texts to question often-fraught racial and gender politics embedded in these cultural productions as way to access role that racial and gender dynamics have on world at large. P/NP or letter grading.

**25. Politics and Passion: Judgment, Justice, and Emotions. (5)** Seminar, four hours. How to combine judgment and emotions without them standing in way of justice, including our ability to listen and respond to pain of others. What should govern our political lives? Should it be our reason or our emotions? Or is there some way to combine the two? Exploration of these questions through debates on place of emotions in politics, from ancient to contemporary thinkers within philosophical framework. P/NP or letter grading.

**26. Representing Medicine: Art, Literature, and Film. (5)** Seminar, four hours. Limited to Freshman Summer Program students. Exploration of interdisciplinary dimensions of medical representation, with emphasis on cross-cultural 20th-century portrayals of profession, including representations of doctor/patient relations, healthcare sites and circumstances, aging, alternative treatments, and mental health. Offered in summer only. P/NP or letter grading.

**27. Varied Mathematics. (5)** Seminar, four hours. Informal approach to mathematics and engineering topics. Ideas through stories from historical and anthropological sources. Simplification of topics that cause difficulties in traditional mathematics. Examples emphasize practical solutions. In place of terms used in mathematics, relevant views from popular culture,

including gambling, playing card games, and student contributions. Sources include computer, control, space, and other contemporary scientific issues, and reckoning cases from East Asia, South America, and Polynesia. P/NP or letter grading.

**28. Material Culture and the Museum: Introduction to Collections-Based Research.** (5) Seminar, three hours. Examination of relationship between people, objects, and ideas. Insight into way that human beings have historically and contemporaneously created and conceived of things and their use and importance in daily life and in performance of cultural identity. Consideration of questions including how past and present intersect, how people have made sense of world over time and space, and how objects, heritage, collectors, and museums converge, diverge, and intersect. P/NP or letter grading.

**29. Imagining Human Rights.** (5) Seminar, four hours. Introduction to debate on international human rights. History of natural rights and examination of rise of human rights regimes during 20th century. Drawing upon art, journalism, philosophy, psychology, political science, law, history, literature, and film to investigate how this shift from natural rights to human rights involves reimagining of humanity and the human being in modern society. Students engage in comparative and interdisciplinary discussions exploring how and why idea of human rights demands critical imagination. P/NP or letter grading.

**30. Vietnam War and American Culture.** (4) Seminar, three hours. Cultural, social, and political implications of the Vietnam War on American society through examination of photography, journalism, personal narrative, political commentary, drama, and fiction. P/NP or letter grading.

**31. Poets and Prophets: Back to Future with Ray Bradbury and Rod Serling.** (5) Seminar, three hours. Exploration of various aspects of human condition and how they are portrayed through genre of science fiction. Examination of authors as both poets reflecting on social issues of their time, as well as prophets of future dystopia of human making. Reading texts of Ray Bradbury and viewing original screen episodes of Rod Serling's *The Twilight Zone* to see that these artists forecast some of pressing issues facing humanity today: climate change and threat of ecological and planetary devastation; impact of artificial intelligence on human relationships; racism, exploitation and marginalization of peoples; censorship; social alienation and loneliness; theory and science of time travel; space exploration and colonization as means for human survival; medical technology in service of beautification, eradication of disease, and immortality. Appreciation that using their keen insight into nature of human behavior, artists' works are as much cautionary tale as fantasy. Letter grading.

**35. Scientific Method: Critical Inquiry into Question of Extraterrestrial Life.** (4) Lecture, three hours; discussion, one hour. Course does not presume to answer question of whether or not there is intelligent life in the universe but rather uses this question as a pedagogic tool to introduce central ideas, techniques, and limitations of the scientific method—what questions would need to be asked, what scientific knowledge would be needed, and what obstacles would have to be overcome just to address this question. P/NP or letter grading.

**36. Global Geographies and Idea of Home.** (5) Seminar, three hours. Designed for College Honors students. Home is potent symbolic notion across eras and cultures, locale from which we depart and to which we may return. Broader notions of home, as homeland, incessantly form basis of conflicts between people and nations. Investigation of what home is through challenging works of theory surrounding notions of space, place, longing, belonging, exile, and return, and through lighter vibrant works of literature, film, and performance. P/NP or letter grading.

**37W. Sampling and Remix: Aesthetics and Politics of Cultural Appropriation.** (5) Seminar, three hours; laboratory, two hours. Enforced requisite: English Composition 3 or English as a Second Language 36. Limited to College Honors students. Contemporary media literacy has spurred production of amateur remixes of songs, films, images, and other media texts.

But this is only one moment within far-reaching genealogy of cultural appropriation. Use of remix as lens through which to explore aesthetics and politics of historical and contemporary forms of cultural appropriation, including remixes of political speech, viral videos, and comedy mashups. Examination of fine line between honorific cultural allusion and allegations of theft. Satisfies Writing II requirement. P/NP or letter grading.

**38. Film and History/Film as History.** (5) Seminar, four hours. Designed for College Honors students. How do films reflect on, and even constitute, historical events? Examination of relationship between film and history and some ways in which film has functioned as history. Tracing questions of film and history from silent era to postfilm digital present, exposure to major issues in scholarly body of work in film and media studies while also learning about ways that films can engage with history. P/NP or letter grading.

**39. Philosophy Ramble.** (5) Seminar, three hours. Designed for College Honors students. Grounded in Aristotelian-style philosophy found in Martha Nussbaum's *Quality of Life* and P.M.S. Hacker's *Intellectual Powers*. Prompted by wide range of philosophical readings and employing Socratic method of asking questions, examination of place in our lives—especially our civic lives—of attention, memory, will, science, prudence, and assessment/creation of self. Like Aristotle's peripatetic version of Plato's Academy, class takes regular walks together, using UCLA and West Los Angeles as Lyceum, engaging in intellectual dialog in historical tradition of exercising both body and mind. P/NP or letter grading.

**40W. Transformations of Cultural Stories across Disciplines and Texts.** (5) Seminar, four hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Tracing of writing and rewriting of traditional story types, specifically the adventure story as represented by Defoe's *Robinson Crusoe* and its remanifestations in Coetzee's *Foe* and the fairy tale as represented by *Cinderella* and its various cross-cultural remanifestations. Satisfies Writing II requirement. Letter grading.

**41. Understanding Ecology: Finding Interdisciplinary Solutions to Environmental Problems.** (5) Seminar, four hours. Designed for College Honors students. Exploration of ecological basis of planet's most important environmental issues, including global climate change, ocean acidification, biodiversity loss, deforestation, pollution, and declining freshwater resources and fisheries. Examination of both hard science and interdisciplinary solutions (social, political, educational) to environmental problems. P/NP or letter grading.

**42. Poetry in Age of Mass Incarceration.** (5) Seminar, three hours. Examination of function of poetry in relation to mass incarceration. Examination of contemporary American carceral history and various tools that poets have used to challenge dichotomy of innocence versus criminality. Some tools include writing poems about police violence, editing anthologies with creative works of incarcerated people, and teaching poetry in detention centers. Examination of how poets have striven to make legible state violence where it is otherwise unseen. In workshop component, students respond creatively to works discussed during seminars in order to better understand and confront one of largest social issues of our times. This generative practice allows for better development of portfolio of literary techniques to use while writing creatively. Students learn how to affirmingly critique work of their peers, and receive criticisms of their own works. Letter grading.

**43W. Science, Rhetoric, and Social Influence.** (6) Seminar, four hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Science writing, particularly scientific texts, both contemporary and historical, that have been used to communicate science to and influence large groups of people's beliefs and behavior. What is it about certain scientific texts that change way we think and have potential to affect social policy? Texts cover variety of topics from evolution to nutrition and food industry to

current debates about climate change. Students encouraged to practice science writing themselves. Satisfies Writing II requirement. Letter grading.

**44. Society of Excess: On Waste, Consumer Culture, and Environment.** (5) Seminar, three hours. Designed for College Honors students. Examination of waste in both real and virtual worlds, looking in interdisciplinary ways at various cultural representations of trash set against backdrop of society of excess and environment constantly threatened by overflowing and mismanaged waste, including social and cultural responses to physical waste and cyber battle against Internet debris. P/NP or letter grading.

**46. Drugs in Society: Interdisciplinary Perspective on Drug Use, Abuse, Treatment, and Intervention.** (5) Seminar, three hours. Examination of drug use and abuse and consequent social issues and policies both historically and in the contemporary U.S., including discussion of current research on neurobiological properties of different drugs and corresponding clinical interventions. P/NP or letter grading.

**48. Politics of Reproduction.** (4) Seminar, three hours. Examination of complex relations between individual, local, and global interests as they shape and reflect reproductive practices, public policy, and exercise of power. P/NP or letter grading.

**49. Evidence in Law, Science, History, and Journalism.** (4) Seminar, four hours. Rigorous study of ways in which lawyers, scientists, historians, and journalists handle evidence, with aim of advancing cross-disciplinary inquiry to produce a common vocabulary and set of concepts that allow for discussion of evidentiary issues in differing fields of inquiry. P/NP or letter grading.

**50. Creating Your Roadmap.** (5) Seminar, three hours. Introduction to selected signature approaches to learning (interdisciplinary, experiential, integrative, illustrative), ways of being (inclusivity, self-awareness, curiosity, independence, resilience, generosity, distinctiveness), and habits of doing (collaboration, creativity, innovation). Incorporation of empirical research and writing from different academic disciplines to help students understand rationales behind those approaches and associated applications for undergraduate learning. Students design e-portfolio. Students develop personalized roadmap to guide their academic, personal, and professional growth during their undergraduate careers. May be repeated for maximum of 10 units. P/NP or letter grading.

**51. Music and Society.** (5) Seminar, four hours. Minimal experience reading music desirable but not required. Analysis of Western art music, with focus primarily, but not exclusively, on music of late-18th through early-20th centuries through multiple analytical prisms: sociological, historical, political, and musical. P/NP or letter grading.

**55. Culture and History of Utopias.** (4) Seminar, three hours. Study of major utopian writings from Thomas More's classical text to recent ecological and feminist utopian texts, with purpose of uncovering social, intellectual, and cultural landscapes underlying quest for a more perfect society. P/NP or letter grading.

**57. Language, Performance, and Culture.** (5) Lecture, three hours. Mixture of lecture and discussion on topic of language and its relationship to performance and culture in 19th and 20th centuries. Study of theorists such as Saussure, Wittgenstein, Stanley Cavell, Judith Butler, and others, playwrights such as Wilde, Stein, and Samuel Beckett, and films such as *His Girl Friday* and *Monkey Business*. P/NP or letter grading.

**59W. Literature and Culture of the American South.** (6) Seminar, four hours; writing laboratory, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Examination of historical imagination as it is expressed in such writers as William Faulkner, Allen Tate, Flannery O'Connor, Richard Wright, and Zora Neale Hurston; in Civil War and WPA/FSA photography; and in Southern rhetoric and political documentary. Satisfies Writing II requirement. Letter grading.

**63W. Nabokov and Reading Minds.** (5) Seminar, four hours. Enforced requisite: English Composition 3 or English as a Second Language 36. Designed for College Honors students. Examination of three works by

Vladimir Nabokov, Russian-American writer, teacher, translator, lepidopterist, and composer of chess problems. Nabokov's eclectic writings lend themselves well to precepts of cognitive criticism—way of understanding world through relationship between literacy and thought. Reading and writing about art and science built into course. Satisfies Writing II requirement. Letter grading.

**64. Neuroscience and Psychology of Art and Biology of Aesthetics. (5)** Seminar, three hours. Interdisciplinary approach to study of premise that beauty, whether of faces, art works, or other subjects, is processed by brain and can be understood as neurological and psychological phenomenon. P/NP or letter grading.

**65W. Body-Mind Literacy. (6)** Seminar, four hours. Enforced requisite: English Composition 3. Designed for College Honors students. Examination of social and cultural assumptions about body and mind and how they are integrated and/or disconnected. Experimental and interdisciplinary approach. Satisfies Writing II requirement. Letter grading.

**70A. Genetic Engineering in Medicine, Agriculture, and Law. (5)** Lecture, three hours; discussion, two hours. Not open to students with credit for Life Sciences 3, 4, former Microbiology 7, or Molecular, Cell, and Developmental Biology 70. Historical and scientific study of genetic engineering in medicine, agriculture, and law, including examination of social, ethical, and legal issues raised by new technology. P/NP or letter grading.

**70AL. Gene Discovery Laboratory. (5)** Seminar, three hours; laboratory, five hours. Recommended requisite: course 70A. Laboratory work in genomics research and seminar discussion that apply experimentally concepts and techniques taught in course 70A. P/NP or letter grading.

**71. Cross-Cultural Approaches to Media History and Culture. (5)** Seminar, three hours. Examination of media, media history, and media culture from cross-cultural perspective, one that demands redefinition of media and understanding of art in cross-cultural context. P/NP or letter grading.

**73. Elementary Particles in the Universe. (4)** Lecture, two hours; discussion, 90 minutes. No special mathematical knowledge required. Examination of elementary particle physics, including status of its current study in laboratories around the world and its role in assessing the early evolution of the universe. P/NP or letter grading.

**77. Greeks and Persians: Ancient Encounters from Herodotus to Alexander. (5)** Seminar, three hours. Designed for College Honors students. Examination of multiple encounters between Greeks and Persians in antiquity, from origins of Achaemenid Empire through its conflicts with Greek world of Mediterranean, to Alexander's defeat of Darius III. Consideration of mutual constructions of other in antiquity, Near Eastern versus Greek testimonia, and art and archaeological evidence of these two civilizations. P/NP or letter grading.

**78. Science and Religion from Copernicus to Darwinism. (5)** Seminar, three hours. Are science and religion incompatible? It appears so, but struggles of scientists such as Darwin, Galileo, and Newton tell far richer story. Sometimes supporting each other, sometimes in competition, science and religion were, and remain, in constant dialog. Letter grading.

**79. Personal Financial Health: Theory and Practice. (6)** Seminar, three hours; fieldwork, four hours. Designed for College Honors students. Special economics or mathematics preparation not required. Theory and practice of managing financial health, allowing for broad discussion of larger theoretical picture of variables affecting economy and practical hands-on look at personal finance, including budgeting, debt, insurance, investing, and purchasing. Examination of variety of financial issues through three principal standpoints: psychology of finance, historical perspective of finance, and socioeconomic perspective of finance. P/NP or letter grading.

**80. Cossacks and Narratives about Them. (5)** Seminar, four hours. Designed for College Honors students. Examination of two Cossack societies:

Ukrainian (Zaporozhian) Cossacks and Russian (Don) Cossacks. Both emerged in 15th and 16th centuries as warrior societies along contact zone between Slavic world and Muslim Tatar and Turkic world. Their frontier status and liminal culture proved to be mythogenic, and Cossacks figure prominently in imagination of cultures they impacted over centuries, especially in folklore, literature, film, and opera. Study of Cossacks through these media to understand not just Cossack society but ways in which Cossacks have been viewed through paradigms of Polish, Russian, Ukrainian, Jewish, Ottoman, and west European cultures. P/NP or letter grading.

**81. Poetry and Protest Movements. (5)** Seminar, three hours. Examination of role that poetry has played in social justice movements globally throughout 20th and 21st centuries. Includes creative writing seminar and workshop component. P/NP or letter grading.

**82. Community and Labor Development from Ground Up. (4)** Lecture, three hours; discussion, one hour. Introduction to practical applications of community development and outreach efforts in Los Angeles area, with projects from Community Outreach Partnership Center within School of Public Policy and Social Research. P/NP or letter grading.

**83W. Politics and Rhetoric of Literature. (6)** Seminar, four hours; writing laboratory, two hours. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Examination of relationship among politics, rhetoric, and literature in study of literature from classical times to the present, broadening into general discussions of development of political discourse in Western thought, particularly conflict between self and state, between ideology and the practical business of living. Satisfies Writing II requirement. Letter grading.

**84. Conflicts between Languages. (5)** Seminar, three hours. Introduction to potentially conflict-ridden language situations in three countries abroad and discussion of various aspects of minority languages in the U.S. P/NP or letter grading.

**85. Biological Clock. (5)** Seminar, four hours. Designed for College Honors students, but open to all majors. Rotation of Earth imposed diurnal oscillations of physical changes on all living organisms on Earth. Protein complexes, called circadian or biological clock, allow organisms to anticipate and adapt to daily environmental changes, and knowledge of it comes from molecular biology, biochemistry, cell biology, genetics, and genomics. Study of these processes and interdisciplinary methodologies to understand how biological clock works and how it affects health and well-being. P/NP or letter grading.

**86. Psychology of Fear. (5)** Seminar, three hours; fieldwork, one hour. Examination of phobias, including inquiry into how people are distressed by intense fear, examination of structures and processes of irrational fears, and discussion of courage and fear reduction strategies. P/NP or letter grading.

**87W. Worlds of Neil Gaiman: Graphic Novels, Social Media, and Fantasy Fiction. (5)** Seminar, four hours. Enforced requisite: English Composition 3. Designed for College Honors students. Examination of eclectic art of Neil Gaiman, exploring his contributions to children's and young adult literature, novels, graphic novels, video games, film and television, and online writing. Use of multiple lenses to understand his work, including philosophy, cultural studies, and media studies. Satisfies Writing II requirement. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental read-

ings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Hollywood and Global Responsibility. (5)** Seminar, three hours. Designed for College Honors students. American filmmakers have enormous power to reach global audiences. When they use this platform to make films that flout social norms still respected in most parts of world, objections arise. Where is line between free speech and free artistic expression and social responsibility? How can Hollywood become more globally responsible given its business realities and lack of government oversight? Study of different case studies affecting different countries and cultures to illuminate discourse on ethics and art. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101D. Counseling Multicultural Communities. (2)** Seminar, two hours. Study of issues of culture and identity in cross-cultural counseling, including development of working model. P/NP grading.

**101E. Leading Undergraduate Seminars. (1)** Seminar, one hour. Limited to students who have been accepted into Undergraduate Student Initiated Education (USIE) program. Learning and exploration of issues that are integral to developing seminars and development of skills to become effective student facilitators. Practical teaching strategies and techniques, as well as pedagogical, organizational, and technological issues confronted by new instructors. Discussion of key topics, followed by discussion of syllabi that students are developing for their seminars and conducting of micro-teaching presentations. Guest speakers expand on topics that arise from class discussions. May be repeated once for credit. P/NP grading.

**101G. Graduate School Preparation. (2)** Seminar, two hours. Limited to AAP students. Designed to help AAP students familiarize themselves with academic disciplines they would like to pursue in graduate school. Through course readings, guest speakers, and interactive assignments, students learn more about their graduate school options and how to navigate application process. P/NP grading.

**M102. Culture, Media, and Los Angeles. (6)** (Same as African American Studies M102 and Asian American Studies M160.) Lecture, four hours; screenings, two hours. Designed for juniors/seniors. Role of media in society and its influence on contemporary cultural environment, specifically in Los Angeles; issues of representation as they pertain to race, ethnicity, gender, and sexuality. P/NP or letter grading.

**103. Scientific Knowledge, Industrial Growth, and Social Policy. (5)** Lecture, three hours; laboratory, two hours. Examination, using nanotechnology, of both benefits and risks to economy and society when new technologies are in process of development. P/NP or letter grading.

**104. Fundamental Forms of Social Relationships from Theory to Research Design. (5)** Seminar, three hours. Relational models theory posits that four elementary models organize social coordination, emotions, motives, and norms in virtually all domains and cultures. Study and critique of theory, development of research questions, planning of study, design of its methodology, and writing of research proposal. P/NP or letter grading.

**105. Racial and Ethnic Disparities in Healthcare. (5)** Seminar, three hours. Examination of ways in which race and ethnicity impact delivery of healthcare in U.S. and discussion of policies and proposals to address disparities in healthcare and diversity in healthcare professionals. P/NP or letter grading.

**M106. Imaginary Women. (5)** (Same as Gender Studies M106.) Seminar, four hours. Designed for junior/senior College Honors students. Study of four female cultural archetypes—absconding wife/mother, infanticide mother, intellectual woman, and warrior woman—as they appear in their classical and modern manifestations in European and American cultures. P/NP or letter grading.

**107. Literature and Political Order: Homer, Shakespeare, Dostoevsky. (5)** Seminar, three hours. Designed for College Honors students. Examination of political order and questions of violence, power, leadership, and ideology through close readings of literary texts, specifically *Iliad* by Homer, *Julius Caesar* and *Henry IV, Part 1* by Shakespeare, and *Brothers Karamazov* by Dostoevsky. P/NP or letter grading.

**108. Ancient Rome and the Monuments of Washington, D.C. (5)** Seminar, three hours. Exploration of public buildings, marble monuments, and heroic statues of Washington, D.C., inspired by memory and ruins of classical antiquity, and how these evocations have meaning today. Consideration of obelisk, Greek temple, and Pantheon and American monumental counterparts, Washington Monument, Lincoln Memorial, and Jefferson Memorial. Examination of ancient inspirations, historical background, architectural design, and art of these monuments in context of shifting public ideologies and local politics in Washington. Public buildings including U.S. Capitol, Supreme Court Building, and Library of Congress, publicly commissioned statues of war heroes (Revolutionary and Civil), monuments to honor veterans of Vietnam, Korean, and Second World War conflicts, and American presidents. P/NP or letter grading.

**109. Living Consciously: Philosophy in Everyday Life. (5)** Seminar, three hours. What do decisions you make and actions you take say about who you are? What does it look like when you consciously inform your everyday life with your own mindfully developed way of seeing world? Through readings, discussions, exercises, and writing, exploration of practice and ensuing results of living consciously. Students develop and articulate their personal philosophies through intensively and personally exploring various ways of thinking about and acting in world, and through exploring how social world influences and creates philosophies by which we live (whether we know it or not). Letter grading.

**110. Marxist and Post-Marxist Approaches to Cultural Studies. (4)** Seminar, four hours. Examination of Marxist and post-Marxist approaches to study of culture, including classic texts, theoretical and empirical works, and the Marxist roots of postmodernism. P/NP or letter grading.

**111. Stress and Coping. (4)** Seminar, four hours. Examination of research and theory on stress and coping, with emphasis on physical and mental consequences of stress and moderators of both social support and personality in coping strategies. P/NP or letter grading.

**113. Hyperconnected World: Society and Internet. (5)** Seminar, three hours. Designed for College Honors students. Exploration of social, political, economic, psychological, and cultural dimensions of our hyper-connected world via Internet. Topics include transformations of social relationships online, virtual versus real communities, identity and its creations, trust and deception, politics and social media, surveillance and privacy, economics, intellectual property, culture, education, and knowledge, and digital wellness. P/NP or letter grading.

**114. Architecture from Los Angeles: Work of Frank Gehry, Thom Mayne, and Greg Lynn. (5)** Seminar, three hours. Within last 30 years, body of architectural work originating in Los Angeles but reaching world both in material construction and aesthetic influence has emerged. Study of works of three seminal architects—Frank Gehry, Thom Mayne, and Greg Lynn. Site visits and hands-on practice in how to read architectural plans and how to use computers and modeling in architectural study and design. P/NP or letter grading.

**115. Poetry and Society in England, 1588 to 1688: Verse, Politics, Religion, and Sexuality from Spanish Armada to Glorious Revolution. (5)** Seminar, three hours. Designed for College Honors students. Poetry of England in century between 1588 and 1688 through prism of evolving political, philosophical, theological, sexual, economic, and scientific practices of that day and vice versa to understand poetry in cultural and historical context. Students research widely on range of subjects from alchemy to zoology and become class resource on some relevant topic such as Renaissance medicine, Calvinism, scholasticism, Cromwell and New Model Army, Elizabethan foreign policy, Stuart architecture, agricultural and dietary changes, and printing and publishing conventions. P/NP or letter grading.

**M116. Art Alive: Art and Improvisation in Museums. (4)** (Same as Theater M187.) Seminar, four hours. Offered in collaboration with Los Angeles County Museum of Art (LACMA). Interpretation of art in collection through acting, dialogues, movement, and music. Research into history and art history and production of creative performance piece required. P/NP or letter grading.

**117. London and Culture of Male Homosexuality, 1870 to 1900. (5)** Seminar, four hours. Designed for College Honors students. Examination of male homosexual subculture that thrived in London during period when brilliant Irish writer Oscar Wilde (1854 to 1900) was sent to jail for committing acts of gross indecency. Study of Wilde trials, cultural consequences of Labouchere Amendment criminalizing male homosexual acts, some of Wilde's writings, and exciting new writings that have come to light offering insight into links that gay men in London had with theatrical world, prostitution, aristocrats, and underground publishing. P/NP or letter grading.

**M118. Roots of Patriarchy: Ancient Goddesses and Heroines. (4)** (Same as Gender Studies M128.) Lecture, three hours. Examination of ancient goddesses and heroines—European, Neolithic, Near Eastern, Celtic, Scandinavian, Balto-Slavic, Indo-Iranian, and Greco-Roman—using translations of ancient texts, archaeological evidence, and feminist methodology in order to discover implications of ancient patriarchy on modern society. P/NP or letter grading.

**119. Hollywood and Cultural Diversity in America. (5)** Seminar, three hours. Designed for College Honors students. Hollywood filmmakers often produce movies where characters confront societal issues such as sexism, racism, and other forms of discrimination. So it is surprising to see recent media coverage that turns magnifying glass around and exposes Hollywood's own severe problems when it comes to racial and cultural diversity. Exploration of differing media representations—how they occur, why they persist, and what they can teach about current racial divides in America. Examination of how Hollywood represents different races, cultures, and groups. P/NP or letter grading.

**M120. Art and Performance: Interdisciplinary Approach to Collections of Getty Center. (4)** (Same as Theater M109.) Lecture, four hours; discussion, one hour. Drawing from objects in five major collections at Getty Museum, focus on five parallel historical periods in which political, social, and aesthetic philosophy of age is examined in musical and dramatic performance. Letter grading.

**121. Psychoanalysis before Freud, and a Little After. (5)** Lecture, three hours; discussion, one hour. Examination of different ways human beings have developed conceptions of themselves through history from early civilizations through Middle Ages, Renaissance, Reformation, scientific revolution, Enlightenment, origins of modern world, Freud's *fin de siècle* Vienna, and post-Freudian visions; investigation of various interactions of these different conceptions in present day. P/NP or letter grading.

**122. Chemical Communication across Tree of Life. (5)** Seminar, three hours; discussion, two hours. Designed for College Honors students. Chemical communication governs relationships among most biological entities, across entire tree of life from viruses to *Homo sapiens*. Bioinspired devices are using knowledge gleaned from chemosensory systems to change

face of robotics, with wide applications in consumer industries, homeland security, and space exploration. Chemical, physical, and biological principles to be combined as pedagogical tools for teaching larger lesson in science. Synthesis of information and concepts across disciplines to develop student hypotheses and conclusions. P/NP or letter grading.

**M123XP. Philanthropy as Civic Engagement. (5)** (Formerly numbered M123.) (Same as Community Engagement and Social Change M122XP) Seminar, three hours. Limited to juniors/seniors; application required. Study of history, philosophy, and practice of philanthropy. Practical experience in setting priorities and making philanthropic investments in Los Angeles-based nonprofit organizations. Letter grading.

**124. Midwives, Mothers, and Medicine: Perspectives on History of Childbirth. (4)** Seminar, three hours. Using examples from history and anthropology, examination of variety of practices associated with childbirth over time and across cultures, addressing such themes as shifting relations among birthing women, midwives, and medical men and cultural meanings of birth. P/NP or letter grading.

**125. Communities and Nations in Conflict: Theory and Practice of International Conflict Resolution. (5)** Lecture, three hours; discussion, one hour. Introduction to theory and practice of conflict resolution, with emphasis on international conflict. Transitional justice mechanisms, from international criminal tribunals, special courts, and International Criminal Court to indigenous approaches such as community justice systems. Examination of environmental conflict resolution, homeland security and terrorism, role of gender in conflict, and role of media in conflict. P/NP or letter grading.

**126. Waves of Resistance: Race, Empire, and Social Justice in Asia and Pacific Islands. (5)** Seminar, three hours. Designed for College Honors students. Examination of historical and contemporary moments of racial violence, empire, and social justice in Asia and Pacific Islands. Global forces such as capitalism, colonialism, and globalization played significant role in cultural, economic, and political organization of places such as American Samoa, Guam, Hawai'i, Marshall Islands, Philippines, Okinawa, and South Korea. Exploration of how various groups of people have responded to these forces to have better understanding of how race, empire, and social justice have connected these distant and diverse areas and peoples. P/NP or letter grading.

**127. Citizenship, Leadership, and Service. (4)** Seminar, three hours; fieldwork, three hours. Interactive participatory study of interactions between citizenship, leadership, and service, including both theoretical work in classroom and practical work in service organizations in the field. P/NP or letter grading.

**128. Humor as Means of Social Control. (5)** Seminar, four hours. Designed for College Honors students. Application of venerable humanist insights and social scientific thinking to contemporary social phenomenon of human laughter and humor. While Aristotle and Hobbes thought humor was bad for society, Locke and Bakhtin would have disputed them for different reasons. Integration of their ideas and ideas of evolutionary anthropology and linguistics, as well as social and biological science, to critically evaluate how social scientists investigate mass media political satire of today. Letter grading.

**129. Research in Psychology and Legacy of John Wooden. (5)** Seminar, four hours. Designed for College Honors students. Exploration of life and work of Coach John Wooden, with particular attention to his pyramid of success, how he was viewed and is remembered by his players, and relationship between his philosophy and academic research. His philosophical approach as lens through which to explore research in fields of sport and education psychology. Connects different elements of Coach Wooden's pyramid of success (and other aspects of his coaching philosophy) to research in psychology. P/NP or letter grading.

**130. Speeding the Cure: Activists, Experts, and Health Care (5)** Seminar, four hours. Study of how activists, experts, and political movements shape public-health policy and biomedical science. What are best



ways to confront health challenges, from rare diseases to pandemics? Analysis of scientific, medical, social, economic, and political aspects of health inequities, drug pricing, disability policy, as well as the role of scientific expertise in formulating goals and strategies. Topics include viruses and vaccines, rare diseases, aging, autism, AIDS, breast cancer, clean water, gun violence, and prostate cancer. P/NP or letter grading.

**131. Global Dimensions of Education and Inequality** (5) Seminar, three hours. Examination of role that education plays in maintaining and perpetuating poverty and inequality. Examination of how various reform strategies that have been proposed to spur development of human capital and local development are impacting poor countries and poor people who reside in rich and poor countries. Examination of how different countries have used education to promote social equality and development and analysis of why some countries appear to be making more progress than others. Consideration of how factors such as history, particularly related to colonialism, political economy, and culture affect character and performance of schools. P/NP or letter grading.

**132. New Women and Activism from America to Asia.** (5) Seminar, three hours. Designed for College Honors students. Spanning of academic disciplines and regional boundaries by looking at women's movements in U.S. and East Asia in early 20th century, with examination of how issues of women's rights, labor rights, and race/nation identities united and divided women across classes and national borders. Examination of suffrage movement in 1913 New York and parallel movements in East Asia (Japan, Korea, China) that adopted and adapted some of these same ideas to their own unique historical circumstances. Use of highly successful *Reacting to Past* historical role-playing game titled *Greenwich Village, 1913: Suffrage, Labor, and New Woman*. P/NP or letter grading.

**133. Practice and Ethics of Ethnographic Fieldwork.** (5) Seminar, three hours. Examination of ethics and practices of ethnographic fieldwork. This is not field methods course but one intended to convey rich knowledge fieldwork can produce in many disciplines and kinds of ethical issues raised in doing fieldwork. P/NP or letter grading.

**134. Democracy and Utopias.** (5) Seminar, three hours. Designed for College Honors students. Political culture of modern democracy fosters idea of progress and constant reform and is also wary of radical upheavals. Political culture of ancient Greek democracy made possible two things: awareness of having achieved unmatched superiority over any other society and birth of utopia. Democracy praised itself as perfect form of government, but it let flourish counterfactual objections to quest for absolute, just, and blissful political order. Examination of this paradoxical link between democracy and utopia by tracing its history in works of Aristophanes, Plato, Thomas More, Tommaso Campanella, Francis Bacon, and Charles Fourier to show relevance to contemporary politics. P/NP or letter grading.

**135. Poetry and Society in England, 1588 to 1688.** (5) Seminar, four hours. Reading and discussion of poems to comprehend meaning and place in configurations of rapidly transforming society. Tensions and changes in that culture, and lives of authors, these works helped negotiate. How and why metaphysical and cavalier modes emerge in period of intense struggle. Interplay of form, content, and meaning within these modes. Evidence offered about personal psychology, gender politics, and status competitions of this period and its poets, especially Donne, Herbert, Jonson, Carew, and Marvell. What kind of work were the poems doing? How, and how well, were they doing it? And, what kinds of work should we do on them now? P/NP or letter grading.

**136. Art, Entertainment, and Social Change.** (5) Seminar, three hours. Integrative examination of evolving impact of arts and entertainment industry on various aspects of society, including politics, self-concept, and experience of everyday life, among others. P/NP or letter grading.

**137. Living Dharma in America: Perspectives on Race and Buddhism.** (5) Seminar, three hours. Deconstruction of and deeper histories behind images of Buddhism such as bald, saffron-robed monks; ornate, golden temples with scent of incense; serene Zen meditation centers; and popular Buddhists from Richard Gere to Thich Nhat Hanh to the Dalai Lama. P/NP or letter grading.

**138. Empire, Border Crossing, and Multiethnic Storytelling.** (5) Seminar, four hours. Exploration of evolution of postcolonial studies through contemporary works of multiethnic American literature. How do our primary texts of fiction or creative nonfiction question literary conventions of allegedly mainstream Euro-American literature? What manifestations of empire, diasporic mobility, and generic mutability unite or separate creative works in question? What meditations on identity and intersectionality do our creative and critical texts offer as they intersect notions of race, class, gender, sexual identity, ethnicity, nationality, and migration? What aesthetic or critical possibilities does multiethnic American storytelling open up for future of postcolonial and transnational studies? P/NP or letter grading.

**139. Confucius and His Legacies.** (5) Seminar, four hours. Examination of Confucian Tradition, from Warring States period to popularization in 21st century. Society in which Confucius (551–479 BCE) lived. Study of *Analects* as core text of Confucianism. Confucius as object of ritual devotion and visual representations. Importance and impact of Confucius on Chinese and Asian culture. P/NP or letter grading.

**140. Dominants and Subordinates in Social Psychology of Privilege and Oppression in Public Education.** (6) Lecture, four hours; discussion, one hour; tutoring, three hours. Study of social arrangements and temporary inequalities in contemporary American public school, showing how such entrenched inequalities tend to become permanent. Field component included. P/NP or letter grading.

**141. Biology and Medicine in Postgenomic Era.** (5) Seminar, four hours. Prerequisite: Life Sciences 3. Discussion of human genomic project, comparative and environmental genomics, structural and functional genomics, transcriptomics, proteomics, pharmacogenomics, and metabolomics. P/NP or letter grading.

**142. Free Will and Moral Responsibility: From Neuroscience to Philosophy and Back.** (5) Seminar, four hours. Survey of motivations, methods, and conclusions of neuroscientific and psychological investigations of free will. Consideration of neuroscientific arguments that humans are not free when they choose and of philosophical arguments about what is required for freedom and what is required for responsibility. Discussion of extent to which philosophical investigations of free will inform neuroscience and whether and how experiments could be designed and carried out to better correspond with philosophical and legal debate on free will. P/NP or letter grading.

**M143. Latinx Immigration History and Politics.** (4) (Same as Chicana/o and Central American Studies M124.) Lecture, four hours. Critical introduction to U.S. immigration policies and politics, and their disproportionate impacts on Latinx community. Topics include some of root causes of Latin American migration; federal, state, and local immigration lawmaking; and how race, gender, and sexuality impact and are impacted by immigration policies (e.g., legalization, border militarization, deportation) and politics (from voting to activism). P/NP or letter grading.

**144. International Development: Using Your Major For Doing Well and Doing Good.** (5) Seminar, three hours. The adoption of the United Nations' Sustainable Development Goals (2015) called for addressing extreme poverty, disease, environmental degradation, gender inequities, unemployment, and other problems afflicting people across the globe. Sustainability entails development solutions that endure and engage local people. The aim is to leverage local capacities to improve living conditions consistently. Students address questions such as: How does your major relate to one or more of the goals? Which goal speaks to your interest? What key concept or passion do you have that can contribute to addressing one or more of the goals? P/NP or letter grading.

**M145. Politics of Crisis: Migration, Identity, and Religion.** (4) (Same as Chicana/o and Central American Studies M126.) Lecture, three hours. Examination of individual and collective religious response of Latin Americans and Latinas/Latinos in U.S. to dislocations, displacements, and fragmentation produced by conquest, colonization, underdevelopment, globalization, and migration. Letter grading.

**146. Imagining Global Climate Change.** (5) Seminar, three hours. Designed for College Honors students. Global and comparative study of regions in front line of climate change, such as tropical islands and poles that visibly confront sea level rise and glacial melt, through study of visual arts, literature, and film. Study of authors and artists from U.S., Australia, New Zealand, Guyana, Mexico, and Maldives to examine threat of climate change in its complex cultural imaginations. P/NP or letter grading.

**147. The Anthropocene: An Archaeological Perspective.** (5) Seminar, four hours. Examination of new geological period, informally labeled the Anthropocene, in which environment is profoundly impacted by human activities. Evidence that anthropogenic forces have affected conditions on Earth during past two centuries, including loss of biodiversity, burning of fossil fuels, ocean acidification, and ozone depletion. P/NP or letter grading.

**M148. Simulating Society: Exploring Artificial Communities.** (5) (Same as Sociology M118.) Seminar, three hours; computer laboratory, one hour. Examination of social behavior through computer simulations of behavior in artificial communities. P/NP or letter grading.

**149. Art and Trauma.** (5) Seminar, three hours. Examination of how slavery, war, psychiatric institutionalization, and child sexual abuse shaped singular artistic visions. Depictions of severe trauma can be expressed in several ways—external event (e.g., war), internal psychological process (e.g., depression), or symbolic unfolding (e.g., disintegration of individual). Manner in which trauma is embedded in brain and stored in memory is also critical. Exploration of research on memory and trauma, post-traumatic stress disorder (PTSD), and how severe trauma impacts brain. Studio component in form of individual and group projects to offer more tangible insight into process of art and trauma. P/NP or letter grading.

**150. Solo Performer's Toolbox: Storytelling for Artists and TED Talkers.** (5) Seminar, three hours. Designed for College Honors students. Creation and presentation of original one-person performance speech. Development and writing of original script through exploration of personal themes, tone, and subject matter. Addressing of physical or emotional strengths and weaknesses in relation to creative processes of playwriting and performing. Breakdown, interpretation, and summation of one-character plays and synthesis of this knowledge to benefit writing and performance. Identification and exploration of student's unique personal voice in order to establish clear and creative point of view in developing or performing their story. Analysis of dramatic structure, dramatic action, and creation of believable and interesting character. Focus, concentration, imagination, and relaxation during their solo performance, and maintaining professional decorum and discipline. P/NP or letter grading.

**151. Victorian Sexual Scandals.** (5) Seminar, three hours. Designed for College Honors students. Introduction to four major sex scandals that took place in London between 1870 and 1895 to understand ways in which institutions create frameworks for understanding dissident sexualities and gender identities, and relations between sexual scandals and legal actions. Sodomy trial of Ernest Boulton and Frederick Park. Examination of extent of queer networks among gay men, transgender individuals, and their apparently straight admirers during time of Offences against the Person Act 1861. The Maiden Tribute of Modern Babylon, in which journalist W. T. Stead exposed extent of sexual trafficking of children. Series of murders in which bodies of women (several of whom were sex workers) were mutilated and disemboweled, attributed to Jack the Ripper. Trials of Oscar Wilde who was sent to jail for two years in solitary confinement with hard labor for gross indecency. P/NP or letter grading.

**M152. (When) Do Leaders Make Differences? (5)** (Same as Anthropology M148 and Geography M142.) Lecture, two hours; discussion, two hours. Examination of leaders who did or did not succeed in effecting change, as background to understanding conditions under which leaders can make differences. Comparison of political leaders, business chief executive officers, sports coaches, and religious leaders. Letter grading.

**153. Comedy in Literature. (5)** Seminar, three hours. Intense discussion of work of literature, typically play, novella, or novel. Study of comic works of literature, from Greeks to 20th century. P/NP or letter grading.

**154. Hollywood and Divided America. (5)** Seminar, three hours. Exploration of role that media images and storylines play in current political and cultural debates in U.S. Examination of recent movies and television shows and other case studies to explore entertainment industry's impact on current discord in U.S. Discussion of motives of artists who speak out and arguments of their detractors. Consideration of whether Hollywood can still be positive force in divided America. P/NP or letter grading.

**155. Disease and Human Condition. (5)** Seminar, four hours. Discussion and analysis of COVID-19. Exploration of scientific characteristics and historical manifestations of group of epidemic diseases that have shaped civilization: bubonic plague, smallpox, yellow fever, tuberculosis, cholera, influenza, polio, hemorrhagic fevers, and AIDS. Examination of biomedical characteristics of disease: causative agent or process; pathological effects in human body; course of disease; and epidemiological patterns of incidence and severity. Focus on each case during the period when it exercised its greatest effects. Emphasis on how historical manifestations of, and reactions to disease, are deeply embedded in social and economic structures, and medical knowledge, of its time. P/NP or letter grading.

**156. Political Opposition in Early Modern Europe. (5)** Seminar, three hours. Designed for College Honors students. Examination of tradition of radical political movements from Italian Renaissance to French Revolution. Topics include Machiavelli's contributions to political thought, turmoil of 16th-century France and Dutch Republic and their radical underside of Protestant thought, French Wars of Religion, Dutch revolt against Spanish, English Civil Wars, and radical thought of European Enlightenment and its contributions to French Revolution. P/NP or letter grading.

**M157. International Relations of Middle East. (4)** (Same as Political Science M132B.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Role of great powers in Middle East, with emphasis on American, Soviet, and West European policies since 1945. P/NP or letter grading.

**158. Justice and Moral Responsibility in Literature. (5)** Seminar, three hours. Discussion of literature (drama and fiction) addressing themes of law, justice, government, and moral responsibility in public context. P/NP or letter grading.

**159. Feminism, Art, and Metaphors of Trauma. (5)** Seminar, three hours. Exploration into visual metaphors of remembrance. Exploration, across several centuries, of artworks of feminist artists who have been exposed to, or ally with, relentless traumas; sexual violence, casualties of war, racial and social injustice, and trafficking of women and girls. Focus on visual manifestations of anguish, persistence, and reckoning that populate and coalesce in these artworks. Topics explored through group and individual studio art projects designed to give tangible insights into emergence of artworks manifested in wake of tragedy. P/NP or letter grading.

**160. Asceticism. (5)** Seminar, three hours. Designed for College Honors students. Historical overview of literary, philosophical, and theological writings on asceticism, with particular attention to late antiquity and medieval periods. Study of asceticism from desert fathers to medieval female mystics, Weber on Protestantism, Nietzsche on ascetic ideal, and Foucault on ancient *askesis*. Literary readings include selections from Flaubert, Melville, Kafka, Eliot, and Weil. P/NP or letter grading.

**163. China's Rise: Critical Issues and Global Implications. (5)** Seminar, four hours. Study of ascendancy of China in 21st century, with emphasis on global implications. Aspects of Chinese development that lend themselves to comparative analysis, including labor, environment, nationalism, migration, inequality, rule of law, social movements and authoritarianism, state capitalism, and China in Africa. P/NP or letter grading.

**164. Between Species: Human/Non-Human Animal Relationship. (5)** Seminar, three hours. Exploration of intimate and changing relationship between human and non-human animals. Examination of how we conceptualize animals: as companions, food, workers, representatives of self, and more; rights—or lack thereof—of animals; our animal industries: factory farming, shelters and rescues, animal workers, entertainment, fighting, races, hunting, medical research, and more; boundaries between human and non-human animals; violence against animals, both individualized and institutionalized; animals as concept; and social construction the difference between human and non-human animals. Letter grading.

**165. Privacy versus National Security. (5)** Seminar, four hours. Designed for College Honors students. Edward Snowden's disclosures of extent of government surveillance conducted by National Security Agency sparked national debate about scope and necessity of government surveillance programs. What is proper balance between privacy and national security in information age? Study of debate about constitutional values and moral responsibility, complicated by public fear, competing commercial interests, and international legal and diplomatic quandaries. P/NP or letter grading.

**166. Stories of Cultural Distance and Imposed Assimilation. (5)** Seminar, three hours. Study helps discern how (auto)biographical and fictional stories reenact people's life experiences in zones of cultural difference. Focus on narratives presenting ethnic conflict and assimilation in Caucasus region and eastern Anatolia, beginning in 1850s and ending with aftermath of Armenian genocide. P/NP or letter grading.

**167. Modern Metropolis: Cultural Histories of Los Angeles. (5)** Seminar, three hours. Interdisciplinary approaches to study of Los Angeles and its rise as global metropolis. Focus on art, architecture, literature, and other forms of cultural expression rooted in diverse communities of Los Angeles. P/NP or letter grading.

**168. Paris: Biography of City from 1715 to World War II. (5)** Seminar, three hours. Designed for College Honors students. Exploration of history of Paris from death of Louis XIV to World War II. Study of consequences of rapid urbanization and reasons why Paris became fulcrum for political revolutions. Examination of Paris as locus of modernism, its rebuilding and design under Baron George Haussmann, impact of World War I and expat culture, and city's housing crisis. P/NP or letter grading.

**169. Imposture and National Identity. (5)** Seminar, three hours. Cross-cultural approach to study of imposture (assumption of false identity) as window through which to examine cultural modernity and national identity. Study of literature, history, and film from Australia, United Kingdom, the U.S., Near East, and South Asia as way of trying to define both hypocrisies and creativity of imposture. P/NP or letter grading.

**M170. Philanthropy: Confronting Challenges of Serving Disabled. (5)** (Same as Disability Studies M171.) Lecture, three hours. Enforced requisite: Disability Studies 101 or 101W. Study of history, philosophy, and practice of philanthropy using lens of disability studies theory in conversation with important themes of charity, paternalism, and systems of dependency. Analysis of multiple perspectives of philanthropy to gain practical experience setting priorities and making philanthropic investments in Los Angeles-based nonprofit organizations serving people with disabilities. Letter grading.

**171. Emotion, Reason, and Political Power. (5)** Seminar, three hours. Study of way in which philosophers, social theorists, cognitive scientists, and neuroscientists have characterized relationship between rationality, emotions, and participation in political life. Basic theoretical issues in emotion theory. Social constructivism versus basic emotion theory. Primary and com-

plex emotions. Emotion classification models. Study of pride—shame and aggression—alarm systems. Anger and fear in relation to social-dominance hierarchies. Emphasis on anger, hatred, and resentment as key political emotions. Management and control of emotions. Emotions of powerlessness and empowerment. Alienation, anomie, and emotions. P/NP or letter grading.

**172. French Thinkers of Society. (5)** Seminar, four hours. In-depth study of distinguishing perspectives of French theorists who wrote on society and its impact on individuals. Theorists include Pascal, Rousseau, Marcel Mauss, and Emile Durkheim from early modern period, contemporary thinkers such as Michel Foucault, Michel de Certeau, and Pierre Bourdieu, and two postmodern theorists, Guy Debord and Jean Baudrillard. P/NP or letter grading.

**173. American Political Thought from Revolution to Civil War. (5)** Seminar, three hours. Exploration of nature of American political thought between Revolution and Civil War. Topics include nature of rights, federalism, constitutionalism, and democracy, as well as morality of slavery and legitimacy of succession. P/NP or letter grading.

**173A. Liberty, Government, and Society in European Thought. (5)** Seminar, three hours. Examination of great works of European thought from 17th through 18th century, including works of John Locke, Montesquieu, David Hume, Edmund Burke, and Thomas Payne, with emphasis on legal, social, and moral preconditions of liberty. P/NP or letter grading.

**173B. Nature, Culture, and Capitalism in European Thought. (5)** Seminar, three hours. Course 173A is not requisite to 173B. Designed for College Honors students. Examination of great works of European thought from 17th through early 20th century, including works by Thomas Hobbes, Adam Smith, Jean-Jacques Rousseau, John Stuart Mill, and Max Weber, with emphasis on intellectual foundations of liberal democracy and capitalism. P/NP or letter grading.

**174. Future Impact of Nano in New Technologies. (5)** Seminar, four hours. Examination, for general audience, of science behind nanotechnology and way in which nano can potentially influence medical care, environment, energy issues, military, government, and economics. Demonstration of how nano, like current technology, cannot be separated from ethical, cultural, political, and social issues. P/NP or letter grading.

**M175. Terrorism, Counterterrorism, and Weapons of Mass Destruction: Practical Approach. (5)** (Same as Epidemiology CM175.) Seminar, three hours. Terrorism, its origins, and ways of addressing terrorism at local, national, and global levels. Guest speakers from variety of UCLA departments and from Los Angeles. P/NP or letter grading.

**176A. Context of Arab World: Cairo and Alexandria. (4)** Seminar, four hours; fieldwork, eight hours. Enforced corequisite: course 176B. Introduction to some of most important cultural, historical, and political currents in contemporary Arab world, with special focus on Cairo and Alexandria. Offered in summer only. P/NP or letter grading.

**176B. Reading Arab World: Cairo and Alexandria. (4)** Seminar, four hours; fieldwork, eight hours. Enforced corequisite: course 176A. Introduction to some of most salient literature in contemporary Arab world, with focus on Cairo and Alexandria. Offered in summer only. P/NP or letter grading.

**177. Biotechnology and Art. (5)** Seminar, six hours. Bioartists use cells, DNA molecules, proteins, and living tissues to bring to life ethical, social, and aesthetic issues of sciences. Study of how bioart blurs distinctions between science and art through combination of artistic and scientific processes, creating wide public debate. Exploration of history of biotechnology as well as social implications of this science. P/NP or letter grading.

**178. Secret Coups, Imperial Wars, and American Democracy since World War II. (5)** Seminar, three hours. Study of U.S. involvement, both covert and overt, in expeditionary wars since World War II, including involvement in Vietnam, Korea, Cuba, Iran,

Guatemala, Nicaragua, and Chile, and implication of these actions for vitality of American democracy. P/NP or letter grading.

**M179. Critical Vision: History of Art as Social and Political Commentary.** (5) (Same as Communication M169.) Seminar, three hours. Study of tradition of visual arts (painting, graphic art, photography, sculpture) as vehicles for social and political commentary. P/NP or letter grading.

**M180. Structure, Patterns, and Polyhedra.** (5) (Same as Chemistry M117.) Lecture, four hours; activity, two hours. Exploration of structures and their geometric underpinnings, with examples and applications from architecture (space frames, domes), biology (enzyme complexes, viruses), chemistry (symmetry, molecular cages), design (tiling), engineering (space filling), and physics (crystal structures) to effect working knowledge of symmetry, two-dimensional patterns, and three-dimensional solids. P/NP or letter grading.

**182. From Scientific Revolution to Industrial Revolution.** (5) Seminar, four hours. Designed for College Honors students. Examination of most important development in making of Western power and hegemony: rise of new science and its relationship first to British, then European, Industrial Revolution. Once seen as solely product of material factors such as abundant coal, high wages, and available labor, Industrial Revolution is shown as also possessing critically important knowledge of components, one scientific culture derived from Newtonian science and mechanics. P/NP or letter grading.

**M183. Being Human: Identity and Mental Illness.** (5) (Same as Disability Studies M183 and Society and Genetics M183.) Seminar, three hours. Exploration of relationship between identity and mental illness through different approaches to nature and treatment of mental disorder, from biomedical accounts of brain-based pathology (and identity) to Mad Pride movement emphasis on mental diversity. Enduring philosophical questions regarding personal identity, consciousness, selfhood and mind-body relationship are investigated through consideration of conditions such as dissociative identity disorder, trauma, psychosis, autism, and depression. P/NP or letter grading.

**184. Indian and Pakistan: Historic Roots of Conflict and Prospects for Cooperation.** (5) Seminar, three hours. Designed for College Honors students. History of India and Pakistan from demise of British India's Empire in mid-August 1947, with inept partition of Punjab and Bengal and bifurcated Pakistan, to current state of both nations and their potential for conflict and cooperation. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**193A. Journal Club Seminars.** (2) Seminar, two hours; discussion, two hours. Study of key research journals and important research articles. Presentations by program faculty members and other leading researchers. May be repeated for credit. P/NP grading.

**193B. Journal Club Seminars: Arts and Humanities Summer Research Program.** (2) Seminar, one hour; discussion, one hour. Limited to students selected for Humanities Summer Research Program. Study of humanities research journals and monographs. Weekly student research reports and presentations by humanities faculty members. May be repeated for credit. P/NP grading.

**193C. Journal Club Seminars: Mellon Mays Undergraduate Research Scholars.** (2) Seminar, one hour; discussion, one hour. Limited to Mellon Mays undergraduate fellows. Study of key research journals and important research articles in arts, humanities, and social sciences. Weekly research reports and presentations by Mellon Mays students. Presentations by program faculty members and other leading researchers. P/NP grading.

**199. Directed Honors Studies.** (4) Tutorial, two hours. Preparation: minimum of 4 units completed in Honors Collegium with grade of B or better, overall UCLA grade-point average of 3.0 or better. Special research/writing tutorial with director of one Honors Collegium course to pursue in greater depth significant topics from one collegium course. May be repeated for credit. P/NP or letter grading.

## HUMAN GENETICS

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Human Genetics

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Leonid Kruglyak, PhD, *Chair*

## Faculty Roster

### Professors

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Eleazar Eskin, PhD

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Brent L. Fogel, MD, PhD, *in Residence*

Nelson B. Freimer, MD, *in Residence (Maggie G. Gilbert Endowed Professor of Bipolar Disorders)*

Daniel H. Geschwind, MD, PhD, *in Residence (Gordon and Virginia MacDonald Distinguished Professor of Human Genetics)*

Michael B. Gorin, MD, PhD (*Harold and Pauline Price Professor of Ophthalmology*)

Wayne W. Grody, MD, PhD

Eran Halperin, PhD

Deborah Krakow, MD

Leonid Kruglyak, PhD

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Roel A. Ophoff, PhD, *in Residence*

Paivi E. Pajukanta, MD, PhD (*Diller-von Furstenberg Family Endowed Professor of Precision Clinical Genomics*)

Christina G.S. Palmer, PhD, *in Residence*

Matteo Pellegrini, PhD

Joseph R. Pisegna, MD, *in Residence*

Karen Reue, PhD

Jerome I. Rotter, MD, PhD, *in Residence*

Marc A. Suchard, MD, PhD

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### Professors Emeriti

Rita M. Cantor, PhD

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### Associate Professors

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### Assistant Professors

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Nandita R. Garud, PhD

Chongyuan Luo, PhD

Loes M. Olde Loohuis, PhD, *in Residence*

Michael F. Wells, PhD

Yi Yin, PhD

### Adjunct Professors

Jeanette C. Papp, PhD

Eric M. Sobel, PhD

### Adjunct Assistant Professor

Rebecca L. LeShay Araujo, MS, CGC

## Overview

The goal of the graduate program is to train the next generation of leaders in human genetics. This broad and rapidly evolving field of research incorporates multiple areas of modern experimental biology (including but not limited to molecular and behavioral genetics, epigenetics, biochemistry, cell and developmental biology, imaging, and large-scale omics approaches such as genomics, transcriptomics, and functional genomics) and of computational biology (including bioinformatics and biostatistics). In their research, students tackle Mendelian diseases and genetically complex traits of key relevance to human health.

A wide variety of courses is offered to equip future independent researchers with fundamental knowledge about state-of-the-art methods for generating experimental data on a genome-wide scale and computational and statistical approaches to draw from the data sound con-

clusions of biological and medical significance. In addition, courses on medical and ethical issues provide students with a societal perspective on human genetics.

Graduate students are expected to demonstrate integrity, creativity, critical thinking, perseverance, motivation, and determination to work hard; effective and appropriate oral and written communication skills needed for scientific presentation of the data including content, organization, logical flow, grammar, vocabulary, and proper citations; and the ability to design, revise, create, and implement experimental protocols and computational programs. They learn topics including transfer of biological information in a living organism, how genotype affects phenotype (subsuming environment), genetic variation in population, principles of research in genetics and genomics; and themes including evolution of thought in genetics and genomics history, how genetic informs disease and vice versa, genomics and integrating current tools in genomics research (statistical analysis, big data, and bioinformatics), and analysis in genetics and genomics.

The PhD is also offered with the MD as an articulated degree program.

## Graduate Majors

### Genetic Counseling MS

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Human Genetics MS, PhD

The program offers the MS and PhD degrees; graduate study leading to a PhD degree is emphasized. Under special circumstances, and only after consultation with and approval by the Department of Human Genetics, individuals may apply for admission to the MS program.

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Articulated Degree Programs

Articulated degree programs permit no credit overlap; students must complete degree requirements separately for each degree.

- Human Genetics PhD/Doctor of Medicine

## Human Genetics

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**CM113. Ethical, Legal, and Societal Topics in Genetic Counseling. (2)** (Same as Society and Genetics M113.) Lecture, two hours. Discussion of social, cultural, ethical, and legal issues in genetics and genetic counseling. Concurrently scheduled with course C413. Letter grading.

**CM124. Machine Learning Applications in Genetics. (4)** (Same as Computer Science CM124.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Computer Science 32 or Program in Computing 10C with grade of C- or better, Mathematics 33A, and one course from Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Designed for engineering students as well as students from biological sciences and medical school. Introduction to computational analysis of genetic variation and computational interdisciplinary research in genetics. Topics include introduction to genetics, identification of genes involved in disease, inferring human population history, technologies for obtaining genetic information, and genetic sequencing. Focus on formulating interdisciplinary problems as computational problems and then solving those problems using computational techniques from statistics and computer science. Concurrently scheduled with course CM224. Letter grading.

**CM136C. Societal and Medical Issues in Human Genetics. (5)** (Same as Society and Genetics M102.) Lecture, three hours; discussion, two hours. Sequence of entire human genome is now known. Consideration of how this knowledge impacts concepts of ourselves as individuals and of our place in biological universe, concepts of race/ethnicity and gender, ability of DNA-based forensics to identify specific individuals, ownership and commodification of genes, issues of privacy and confidentiality, issues of genetic discrimination, issues of predictive genetic testing. Discussion of human cloning for reproductive and therapeutic purposes. Exposure to medical genetics cases. Discussion of role of whole genome sequencing in clinical setting. Human Genome Project influence on medicine and on our concepts of self and identity. Concurrently scheduled with course C236C. Letter grading.

**C144. Genomic Technology. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 4. Survey of key technologies that have led to successful application of genomics to biology, with focus on theory behind specific genome-wide technologies and their current applications. Concurrently scheduled with course C244. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty

mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**199. Special Studies in Human Genetics. (2 to 8)** Tutorial, to be arranged. Students select instructor among eligible research faculty and carry out independent research project under instructor supervision. P/NP or letter grading.

### Graduate Courses

**M203. Stochastic Models in Biology. (4)** (Same as Biomathematics M203.) Lecture, four hours. Requisite: Mathematics 170A or equivalent experience in probability. Mathematical description of biological relationships, with particular attention to areas where conditions for deterministic models are inadequate. Examples of stochastic models from genetics, physiology, ecology, and variety of other biological and medical disciplines. S/U or letter grading.

**M207A. Theoretical Genetic Modeling. (4)** (Same as Biomathematics M207A and Biostatistics M272.) Lecture, three hours; discussion, one hour. Requisites: Mathematics 115A, 131A, Statistics 100B. Mathematical models in statistical genetics. Topics include population genetics, genetic epidemiology, gene mapping, design of genetics experiments, DNA sequence analysis, and molecular phylogeny. S/U or letter grading.

**M207B. Applied Genetic Modeling. (4)** (Same as Biomathematics M207B and Biostatistics M237.) Lecture, three hours; laboratory, one hour. Requisites: Biostatistics 200B, 202B (may be taken concurrently) or equivalent coursework or consent of instructor. Covers basic genetic concepts (prior knowledge of human genetics not required). Topics include statistical methodology underlying genetic analysis of both quantitative and qualitative complex traits. Laboratory for hands-on computer analysis of genetic data; laboratory reports required. Course complements M207A; students may take either and are encouraged to take both. S/U or letter grading.

**210. Topics in Genomics. (2)** Seminar, two hours. Survey of current biological theory and technology used in genomic research. Topics include genomic technologies, functional genomics, proteomics, statistical genetics, bioinformatics, and ethical issues in human genetics. S/U grading.

**M211. Mathematical and Statistical Phylogenetics. (4)** (Same as Biomathematics M211 and Biostatistics M239.) Lecture, three hours; laboratory, one hour. Preparation: undergraduate course in statistics and probability. Theoretical models in molecular evolution focusing on phylogenetic techniques. Topics include evolutionary tree reconstruction methods, studies of viral evolution, phylogeography and coalescent approaches. Examples provided from evolutionary biology and evolutionary medicine, with unique focus on implications for human disease processes. Laboratory for hands-on computer analysis of sequence data. S/U or letter grading.

**CM224. Machine Learning Applications in Genetics. (4)** (Same as Bioinformatics M224 and Computer Science CM224.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Computer Science 32 or Program in Computing 10C with grade of C- or better, Mathematics 33A, and one course from Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Designed for engineering students as well as students from biological sciences and medical school. Introduction to computational analysis of genetic variation and computational interdisciplinary research in genetics. Topics include introduction to genetics, identification of genes involved in disease, inferring human population history, technologies for obtaining genetic information, and genetic sequencing. Focus on formulating interdisciplinary problems as computational problems and then solving



those problems using computational techniques from statistics and computer science. Concurrently scheduled with course CM124. Letter grading.

**M226. Machine Learning in Bioinformatics. (4)** (Same as Bioinformatics M226, Biomathematics M226, and Computer Science M226.) Lecture, four hours; outside study, eight hours. Enforced prerequisite: Computer Science 32 or Program in Computing 10C with grade of C- or better. Recommended: one course from Biostatistics 100A, 110A, Civil Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, or Statistics 100A. Familiarity with probability, statistics, linear algebra, and algorithms expected. Designed for engineering students as well as students from biological sciences and medical school. Biology has become data-intensive science. Bottleneck in being able to make sense of biological processes has shifted from data generation to statistical models and inference algorithms that can analyze these datasets. Statistical machine learning provides important toolkit in this endeavor. Biological datasets offer new challenges to field of machine learning. Examination of statistical and computational aspects of machine learning techniques and their application to key biological questions. Letter grading.

**M229S. Seminar: Current Topics in Bioinformatics. (4)** (Same as Biological Chemistry M229S and Computer Science M229S.) Seminar, four hours; outside study, eight hours. Designed for graduate engineering students as well as students from biological sciences and medical school. Introduction to current topics in bioinformatics, genomics, and computational genetics and preparation for computational interdisciplinary research in genetics and genomics. Topics include genome analysis, regulatory genomics, association analysis, association study design, isolated and admixed populations, population substructure, human structural variation, model organisms, and genomic technologies. Computational techniques include those from statistics and computer science. May be repeated for credit with topic change. Letter grading.

**236A. Advanced Human Genetics A: Molecular Aspects. (4)** Lecture, three hours. Recommended preparation: prior knowledge of basic concepts in molecular biology and genetics. Advanced topics in human genetics related to molecular genetics and relevant technologies. Topics include genomic technologies, human genome, mapping and identification of disease-causing mutations, transcriptomics, proteomics, functional genomics, epigenetics, and stem cells. Reading materials include original research articles and reviews or book chapters. Letter grading.

**236B. Advanced Human Genetics B: Genetics and Genomics Aspects. (4)** Seminar, four hours; discussion, four hours. Human genetics is fundamental scientific field that studies inheritance in humans and therefore also has immediate practical value for human health and disease. Identification of genes and genetic variation involved in human diseases, traits, and behavior is one of main goals of human genetic studies. Genomic technologies are rapidly advancing and allow for comprehensive and in-depth analysis of human genome. Covers different themes in field of human genetics, including genetics of monogenic disorders, genetic mapping of complex traits, transcriptome analysis, and epigenomic studies of human disease. Overview of human genetics through examination of selection of papers that highlight each of these themes. Letter grading.

**C236C. Societal and Medical Issues in Human Genetics. (5)** Lecture, three hours; discussion, two hours. Sequence of entire human genome is now known. Consideration of how this knowledge impacts concepts of ourselves as individuals and of our place in biological universe, concepts of race/ethnicity and gender, ability of DNA-based forensics to identify specific individuals, ownership and commodification of genes, issues of privacy and confidentiality, issues of genetic discrimination, issues of predictive genetic testing. Discussion of human cloning for reproductive and therapeutic purposes. Exposure to medical genetics cases. Discussion of role of whole genome sequencing in clinical setting. Human Genome Project

influence on medicine and on our concepts of self and identity. Concurrently scheduled with course CM136C. Letter grading.

**C244. Genomic Technology. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 4. Survey of key technologies that have led to successful application of genomics to biology, with focus on theory behind specific genome-wide technologies and their current applications. Concurrently scheduled with course C144. S/U or letter grading.

**M255. Mapping and Mining Human Genome. (3)** (Same as Pathology M255.) Lecture, three hours. Basic molecular genetic and cytogenetic techniques of gene mapping. Selected regions of human genomic map scrutinized in detail, particularly gene families and clusters of genes that have remained linked from mouse to human. Discussion of localizations of disease genes. S/U or letter grading.

**M260A. Introduction to Bioinformatics. (4)** (Same as Bioinformatics M221, Chemistry CM260A, and Computer Science CM221.) Lecture, four hours; discussion, two hours. Requisites: Computer Science 32 or Program in Computing 10C with grade of C- or better, and one course from Civil and Environmental Engineering 110, Electrical and Computer Engineering 131A, Mathematics 170A, Mathematics 170E, or Statistics 100A. Prior knowledge of biology not required. Designed for engineering students as well as students from biological sciences and medical school. Introduction to bioinformatics and methodologies, with emphasis on concepts and inventing new computational and statistical techniques to analyze biological data. Focus on sequence analysis and alignment algorithms. S/U or letter grading.

**M265. Computational Methods in Genomics. (4)** (Same as Bioinformatics M225 and Computer Science M225.) Lecture, two and one half hours; discussion, two and one half hours; outside study, seven hours. Introduction to computational approaches in bioinformatics, genomics, and computational genetics and preparation for computational interdisciplinary research in genetics and genomics. Topics include genome analysis, regulatory genomics, association analysis, association study design, isolated and admixed populations, population substructure, human structural variation, model organisms, and genomic technologies. Computational techniques and methods include those from statistics and computer science. Letter grading.

**282. Topics on Scientific Careers. (2)** Lecture, two hours. Limited to graduate students. Covers topics related to scientific careers such as scientific writing and presentation (including to non-scientific audiences), grant writing and reviewing, curricula vitae, hiring process, social media usage, developing short- and long-term goals, and balancing career and non-work life. Exploration of differences between industry, government, teaching-college, and research-college careers. Active participation and oral and written presentations required. S/U grading.

**400A. Principles and Practices in Medical Genetics 1. (3)** Lecture, three hours. Limited to Genetic Counseling students, and open to medical genetics, molecular and cytogenetics fellows with permission. First course in three-course series. Focus on medical approaches to clinical genetics. Topics include molecular basis of genetic disease, modes of inheritance, principles of cytogenetics and molecular technologies, disorders of chromosomes, and fundamentals of prenatal diagnosis and screening. Addresses application of medical and genetic information to genetic counseling. Includes lectures, problem-based learning scenarios, examinations, and written reflections. Grand Rounds/Seminar series attendance is required component. Letter grading.

**400B. Principles and Practices in Medical Genetics 2. (3)** Lecture, three hours. Limited to Genetic Counseling students, and open to medical genetics, molecular and cytogenetics fellows with permission. Second course in three-course series. Focus on medical approaches to clinical genetics. Topics include cancer genetics, principles of mathematical and population genetics, multifactorial inheritance, risk assessment, teratology and dysmorphology. Addresses application of medical and genetic information to genetic

counseling. Includes lectures, problem-based learning scenarios, examinations, and written reflections. Grand Rounds/Seminar series attendance is required component. Letter grading.

**400C. Principles and Practices in Medical Genetics 3. (3)** Lecture, three hours. Limited to Genetic Counseling students, and open to medical genetics, molecular and cytogenetics fellows with permission. Third course in three-course series. Focus on medical approaches to clinical genetics. Topics include overview of various pediatrics, adult-onset and biochemical genetic disorders, newborn screening, and current treatments of genetic disorders. Addresses application of medical and genetic information to genetic counseling. Includes lectures, problem-based learning scenarios, examinations, and reflections. Grand Rounds/Seminar series attendance is required component. Letter grading.

**401. Fundamental Genetic Counseling Skills. (4)** Lecture, four hours. Limited to Genetic Counseling students. Introduction to profession of genetic counseling. Addresses fundamental genetic counseling skills and structure of genetic counseling session using didactic and active learning techniques, including role-plays, supplemented by activities in clinical settings. Topics include history of profession, theories of psychosocial counseling and its principles including reciprocal-engagement model of genetic counseling, active listening, verbal and non-verbal communication, empathy, how to ask questions, self-disclosure and self-involving skills, and structure of genetic counseling session. Practical exercises and supplementary activities address constructing genetic counseling session, contracting, obtaining family history, drawing and interpreting pedigrees, interviewing techniques, assessing level of patient and family understanding, case preparation, risk communication, development of educational materials, and referrals. General Genetics Case Conference attendance and clinic observations are required component. Letter grading.

**402. Reproductive Genetics in Practice. (4)** Lecture, four hours. Limited to Genetic Counseling students. Focus on reproductive genetic counseling. Reproductive topics include prenatal screening and prenatal diagnosis, invasive and non-invasive procedures, teratogens, ultrasound findings, carrier screening, infertility assessment, preimplantation genetic diagnosis, and in vitro fertilization, reproductive options. Practical exercises include case preparation, medical and family history analysis, risk assessment and counseling, differential diagnosis development, diagnostic testing selection (including analytic validity, clinical validity, and clinical utility of screening and diagnostic tests), results interpretation, patient education, and psychosocial counseling specific to perinatal setting. General Genetics Case Conference attendance and clinic observations are required component. Letter grading.

**403. Specialty Genetics in Practice. (4)** Lecture, four hours. Limited to Genetic Counseling students. Focus on specialty genetics topics including cancer, cardiology, and neurogenetics. Exploration of aspects of these disciplines in context of genetic counseling. Discussion of impact of our growing knowledge of both common and rare genomic etiology on risk assessment, clinical management, and genetic counseling. Practical exercises include case preparation, medical and family history analysis, risk assessment and counseling, differential diagnosis development, diagnostic testing selection (including analytic validity, clinical validity, and clinical utility of diagnostic and predictive tests), results interpretation, patient education, and psychosocial counseling specific to cancer genetics, cardiology, and neurogenetics. Patients as guest speakers offer patient perspective and experience. Letter grading.

**404. Advanced Genetic Counseling Skills. (4)** Lecture, four hours. Requisite: at least four hours visiting/observing/shadowing at least two resource clinics/centers and at least four hours observing bereavement group(s) in past year. Limited to Genetic Counseling students. Focus on advanced psychosocial topics in genetic counseling along with social and legal issues in genetics and genetic counseling. Topics

include family dynamics, burden of disease, crisis intervention, dynamics of grief and bereavement, multicultural sensitivity, coping mechanisms, transference and countertransference, and disability organizations and advocacy. Practice exercises include role-playing in range of advanced psychosocial situations, shadowing support groups and families, simulating patient full session under different scenarios including with interpreters and group presentations. Letter grading.

**405. Professional Development in Genetic Counseling.** (4) Lecture, four hours. Limited to Genetic Counseling students. Focus on professional development as genetic counselor. Students are prepared to make transition to practicing professionals in areas of job search, billing/reimbursement/insurance coverage, service delivery, professional relationships and boundaries, clinical supervision, developing effective presentations for varied audiences, self-advocacy, and other relevant areas to help develop individualized plans for continuing professional development after graduate school. Includes lectures, discussion, interactive activities, projects, and oral presentations. Letter grading.

**406. Foundations of Genomic Medicine.** (2) Lecture, two hours. Limited to Genetic Counseling students. Focus on fundamental concepts in human biology, with emphasis on implications and relevance to human genetic disease and integration of biology with mechanisms underlying disease development. Letter grading.

**410. Translational Genomics.** (3) Lecture, two hours. Limited to Genetic Counseling students, and open to medical genetics, molecular and cytogenetics fellows with permission. Introduction to next generation sequencing (NGS) technologies, bioinformatics pipeline for analyzing NGS data, clinical interpretation of variants using ACMG guidelines, various databases used for variant interpretation, interpretation of exome clinical report, process of communicating results to patients and ethical, legal, and social implications (ELSI) of personal genomics. Offers hands-on laboratory-style experience to interpreting human exome/genome variants for genetics professionals and trainees. Students acquire necessary background to understand technical and analytical aspects of exome/genome test, make informed decisions about clinically relevant variants, and communicate results to patient or patient's family. Attendance at weekly Genome Data Board meeting is required. Letter grading.

**411. Foundations in Genetic Counseling Research.** (2) Lecture, two hours. Limited to Genetic Counseling students. First of two-course series. Overview of research process, including literature review, research design, measurement methods, qualitative methods, and quantitative methods. Includes theory and elements of statistical analysis, data coding, data analysis tools, and interpretation of statistical results. Introduction to necessary tools to understand published research in genetic counseling and foundations necessary for design, conduct, and interpretation of their capstone project. How to conduct human subjects research responsibly and understand informed consent process. Letter grading.

**412. Research Applications in Genetic Counseling.** (2) Lecture, two hours. Enforced requisite: course 411. Limited to Genetic Counseling students. Second of two-course series. Practical hands-on approach to conducting research. Offers more focused discussion on specific aspects of study design and sampling, elements of developing and using instruments to measure variables of interest, criteria for systematic literature review, appropriate univariate and multivariate analyses, and interpretation and report writing. Focus on skills students need to develop and conduct their capstone projects and research in genetic counseling. Students brainstorm ideas for their capstone project, develop research question, and submit research proposal for final project. Letter grading.

**C413. Ethical, Legal, and Societal Topics in Genetic Counseling.** (2) (Formerly numbered 413.) Lecture, two hours. Limited to Genetic Counseling students. Discussion of social, cultural, ethical, and legal issues in genetics and genetic counseling. Concurrently scheduled with course CM113. Letter grading.

**414. Genetic Counseling Communication Seminar.** (1) Seminar, one hour. Limited to Genetic Counseling students. Topics in communicating genetic counseling-related subject matter to diverse audiences using various communication modalities, with emphasis on crafting presentations for health care, public, and advocacy audiences. Includes critical reading, review, and discussion of literature in context of medical genetics, health care delivery, medical management, genetic counseling, and genetics laboratory testing. S/U grading.

**430. Clinical Applications of Cytogenetics and Molecular Techniques.** (1) Lecture, one hour. Cytogenetics and molecular laboratory techniques to diagnose human genetic disorders. Topics include types of abnormalities seen in human genetic disorders, phenotypic consequences associated with these abnormalities, recurrence risk, uses and limitations of common cytogenetic and molecular technologies in clinical testing, current nomenclature, and written components of laboratory reports. Includes laboratory tours. Letter grading.

**431A. Fieldwork.** (1) Fieldwork, three to four hours; discussion, one hour. Limited to Genetic Counseling Students. First fieldwork rotation to establish basic skills in genetic counseling. Students are supervised by certified genetic counselors and medical geneticists. In group discussion setting, students present cases along with relevant psychosocial, ethical, and professional issues to engage in active reflection of clinical supervision experiences, understand dynamics and responsibilities of supervisor/supervisee relationship, and identify personal growth opportunities and limitations in scope of patient practice. S/U grading.

**431B. Fieldwork.** (3) Fieldwork, 35 hours. Requisite: course 431A. Limited to Genetic Counseling Students. Students use intermediate genetic counseling skills with direct patient contact in different clinical settings. Students are supervised by certified genetic counselors and medical geneticists. S/U grading.

**431C. Fieldwork.** (5) Fieldwork, 15 to 20 hours; discussion, one hour. Requisite: course 431B. Limited to Genetic Counseling Students. Students use progressive genetic counseling skills with direct patient contact in different clinical settings. Students are supervised by certified genetic counselors and medical geneticists. In group discussion setting, students present cases along with relevant psychosocial, ethical, and professional issues to engage in active reflection of clinical supervision experiences, understand dynamics and responsibilities of supervisor/supervisee relationship, and identify personal growth opportunities and limitations in scope of patient practice. S/U grading.

**431D. Fieldwork.** (5) Clinical, 15 to 20 hours; discussion, one hour. Enforced requisite: course 431C. Limited to Genetic Counseling students. Students utilize progressive genetic counseling skills with direct patient contact in different clinical settings. Students are supervised by certified genetic counselors and medical geneticists. Students see complex cases, and activities include follow-up activities on genetic test orders, referrals, resources, explaining genetic test results to patients, presenting cases at relevant case conferences, follow-up of action items from case conference, and exploring and addressing psychosocial aspects of patient encounters. Responsibility for conducting genetic counseling session from beginning to end. In group discussion setting, students present cases along with relevant psychosocial, ethical, and professional issues to engage in active reflection of clinical supervision experiences, understand dynamics and responsibilities of supervisor/supervisee relationship, and identify personal growth opportunities and limitations in scope of patient practice. S/U grading.

**431E. Fieldwork.** (5) Clinical, 15 to 20 hours; discussion, one hour. Enforced requisite: course 431D. Limited to Genetic Counseling students. Students utilize progressive genetic counseling skills with direct patient contact in different clinical settings. Students are supervised by certified genetic counselors and medical geneticists. Students see complex cases, and activities include follow-up activities on genetic test or-

ders, referrals, resources, explaining genetic test results to patients, presenting cases at relevant case conferences, follow-up of action items from case conference, and exploring and addressing psychosocial aspects of patient encounters. Responsibility for conducting genetic counseling session from beginning to end. In group discussion setting, students present cases along with relevant psychosocial, ethical, and professional issues to engage in active reflection of clinical supervision experiences, understand dynamics and responsibilities of supervisor/supervisee relationship, and identify personal growth opportunities and limitations in scope of patient practice. S/U grading.

**596. Directed Individual Study and Research.** (2 to 12) Tutorial, to be arranged. Individual study or research for graduate students. May be repeated for credit. S/U grading.

**597. Preparation for MS Comprehensive Examination or PhD Qualifying Examinations.** (2 to 12) Tutorial, to be arranged. Individual study for MS comprehensive examination or PhD qualifying examinations. May be repeated for credit. S/U grading.

**598. MS Thesis Research and Writing.** (2 to 12) Tutorial, to be arranged. Preparation of research data and writing of MS thesis. May be repeated for credit. S/U grading.

**599. PhD Dissertation Research and Writing.** (2 to 12) Tutorial, to be arranged. Preparation of research data and writing of PhD dissertation. May be repeated for credit. S/U grading.

## INDO-EUROPEAN STUDIES

*Interdepartmental Program  
College of Letters and Science*

100 Dodd Hall  
Box 951417  
Los Angeles, CA 90095-1417

**Indo-European Studies**  
310-825-4171

**Brent H. Vine, PhD, Chair**

## Faculty Committee

David M. Goldstein, PhD (*Linguistics*)  
Stephanie W. Jamison, PhD (*Asian Languages and Cultures*)  
Brent H. Vine, PhD (*Classics*)  
Anthony D. Yates, PhD (*Near Eastern Languages and Cultures*)

## Overview

The primary focus of the interdisciplinary Indo-European Studies program is the study of the ancient Indo-European languages and of their reconstructed ancestor, Proto-Indo-European, based on methods drawn from comparative-historical, theoretical, and computational linguistics. Goals of this study include the reconstruction of the Proto-Indo-European language, elucidating its subsequent development into the historical Indo-European languages, and showing how data from the archaic Indo-European languages contribute to a theory of language. There is also attention to other aspects of the nonmaterial culture of the speakers of Proto-Indo-European (such as social structure, religious beliefs, mythology, and poetics), and how these are reflected in the tex-

tual traditions of the ancient Indo-European languages.

## Graduate Major

### Indo-European Studies MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Indo-European Studies

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Visible Language: Study of Writing.** (5) (Same as Asian M20, Near Eastern Languages M20, Slavic M20, and Southeast Asian M20.) Lecture, three hours; discussion, one hour. Consideration of concrete means of language representation in writing systems. Earliest representations of language known are those of Near East dating to end of 4th millennium BC. While literate civilizations of Egypt, Indus Valley, China, and Mesoamerica left little evidence of corresponding earliest developments, their antiquity and, in case of China and Mesoamerica, their evident isolation mark these centers as loci of independent developments in writing. Basic characteristics of early scripts, assessment of modern alphabetic writing systems, and presentation of conceptual basis of semiotic language representation. Origins and development of early non-Western writing systems. How Greco-Roman alphabet arose in 1st millennium BC and how it compares to other modern writing systems. P/NP or letter grading.

**M70. Language and Evolution.** (5) (Same as Linguistics M4.) Lecture, three hours; discussion, one hour. *Homo Sapiens* is only species on Earth with capacity to create infinite number of utterances from small inventory of speech sounds. How and why our species developed this ability is question of fundamental scientific and humanistic importance. Survey of origin of human language from number of intellectual perspectives, including linguistics, anthropology, and evolutionary biology. Exploration of relationship between language faculty and linguistic theory. P/NP or letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Stu-

dents must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**131. European Archaeology, Neolithic to Bronze Age.** (4) Lecture, four hours. Survey of European cultures from beginning of food-producing economy in 7th millennium BC to beginning of Bronze Age in 3rd millennium BC. P/NP or letter grading.

**132. European Archaeology: Bronze Age.** (4) Requisite: course 131. Survey of European cultures from around 3000 BC to the period of destruction of the Mycenaean culture about 1200 BC. Aegean area and rest of Europe.

**140. Food in Language and Myth.** (4) Lecture, three hours; discussion, one hour. Introduction to study of food in fields of linguistics and mythology. What is special about language used to talk about food, what is history of food words, and how does language impact appreciation of food? How do myths and narratives revolving around food function in different cultures? Students explore history of food words and learn how to analyze food myths. Students become aware of how language in food is manipulated and how to tell more effective stories about food. P/NP or letter grading.

**M150. Introduction to Indo-European Linguistics.** (5) (Same as Linguistics M150.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: Linguistics 1 or 20. Indo-European languages (ancient and modern), including their relationships, chief characteristics, writing systems, and sociolinguistic contexts; nature of reconstructed Indo-European proto-language and proto-culture. One or more Indo-European languages may be investigated in detail. P/NP or letter grading.

**C160. Indo-European Comparative Mythology and Poetics.** (4) Seminar, three hours. Preparation: familiarity with at least one ancient Indo-European language. Comparison of major Indo-European mythological and poetic traditions and reconstruction of their common sources. Topics include divinities and their names; symbolic systems in social context; myths, folk narratives, belief systems; relations with other traditions; literary continuations of mythopoetic material. Concurrently scheduled with course C260. P/NP or letter grading.

**M168A. Introductory Hittite.** (4) (Formerly numbered M168.) (Same as Ancient Near East M168A.) Lecture, three hours. Recommended preparation: knowledge of language with case system. Introduction to Hittite grammar by series of graded lessons covering morphology and syntax, followed by readings of selected texts from variety of genres. P/NP or letter grading.

**M168B. Introductory Hittite.** (4) (Same as Ancient Near East M168B.) Lecture, three hours. Recommended requisite: course M168A. Readings of selected Hittite texts from variety of genres and historical periods. Individual topics in synchronic and historical grammar of Hittite and in history and culture of Hittites are treated in detail. P/NP or letter grading.

**M172. Elementary Luwian.** (4) (Same as Ancient Near East M172.) Lecture, three hours. Recommended preparation: knowledge of language with case system. Introduction to Luwian grammar through lectures covering morphology and syntax, and readings of selected hieroglyphic and cuneiform texts. P/NP or letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental read-

ings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**199. Special Studies.** (2 to 8) Tutorial, to be arranged. P/NP or letter grading.

### Graduate Courses

**200. Proseminar: Indo-European Studies.** (2) Seminar, two hours every other week. Required of graduate Indo-European studies students during first year. Introduction to graduate-level research in Indo-European studies. S/U grading.

**205. Indo-European Phonology.** (4) Lecture, three hours. Requisites: course M150, Linguistics 110. Study of proto-Indo-European phonology and its historical development into most important of oldest attested descendant languages. S/U or letter grading.

**210. Indo-European Morphology.** (4) Lecture, three hours. Comparative study of proto-Indo-European nominal and verbal morphology and its historical development into most important of oldest attested descendant languages. S/U or letter grading.

**215. Indo-European Syntax.** (4) Lecture, three hours. Requisite: course 210. Comparative and historical study of syntax in proto-Indo-European and most important of oldest attested descendant languages. S/U or letter grading.

**M222A-M222B. Vedic.** (4-4) (Same as Iranian M222A-M222B and South Asian M222A-M222B.) Lecture, three hours. Preparation: knowledge of Sanskrit equivalent to South Asian 110C. Characteristics of Vedic dialect and readings in Rig-Vedic hymns. Only course M222B may be repeated for credit. S/U or letter grading.

**M230A-M230B. Old Iranian.** (4-4) (Same as Iranian M230A-M230B.) Lecture, four hours. Studies in grammars and texts of Old Persian and Avestan. Comparative considerations. Only course M230B may be repeated for credit. S/U or letter grading.

**M238. Analyzing Historical Texts.** (4) (Same as History M266C and Linguistics M238.) Seminar, four hours. Designed for graduate students. Analysis of linguistic structure and ethnohistorical context of legal and other documents written by native-speaking scribes and translators. Topics include paleographic technique and text analysis software. May be repeated for credit. S/U grading.

**240. Comparative and Historical Grammar of Anatolian.** (2 to 4) Lecture, three hours. Requisites: courses M150, M168A. Survey of comparative and historical grammar of Anatolian languages, with special focus on its implications for Indo-European reconstruction and for language change broadly. Grammatical features are observed in context through readings of representative texts from Anatolian languages including Hittite, Luwian, Lycian, and Palaic. S/U or letter grading.

**250A-250B. European Archaeology.** (4-4) Seminar, three hours. Studies in ancient European archaeological materials and their relationship to Near East, Western Siberia, and Central Asia. May be repeated for credit. In Progress (250A) and S/U or letter (250B) grading.

**C260. Indo-European Comparative Mythology and Poetics.** (4) Seminar, three hours. Preparation: ability to read original sources in at least one ancient Indo-European language. Comparison of major Indo-European mythological and poetic traditions and reconstruction of their common sources. Topics include divinities and their names; symbolic systems in social context; myths, folk narratives, belief systems; relations with other traditions; literary continuations of mythopoetic material. Concurrently scheduled with course C160. S/U or letter grading.

**280A-280B. Seminars: Indo-European Linguistics.** (2 to 4 each) Seminar, three hours. Requisite: course 210. Selected topics in Indo-European comparative grammar for advanced graduate students. S/U or letter grading.



**281A-281B. Seminars: Indo-European Linguistics. (2-2)** Seminar, three hours. Requisite: course 210. Selected topics in Indo-European comparative grammar for advanced graduate students. May be repeated for credit. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Studies. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. Research for PhD Dissertation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## INFORMATION STUDIES

*School of Education and Information Studies*

207 School of Education and Information Studies Building

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**Department e-mail**

Todd M. Franke, PhD, *Interim Chair*

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### Professors

Michelle L. Caswell, PhD

Johanna R. Drucker, PhD (*Martin and Bernard Breslauer Professor of Bibliography*)

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Anne J. Gilliland-Swetland, PhD

Kimberley Gomez, PhD

Louis M. Gomez, PhD

Christopher M. Kelty, PhD

Leah A. Lievrouw, PhD

Safiya U. Noble, PhD

Ellen J. Pearlstein, MA

Ramesh Srinivasan, PhD

### Professors Emeriti

Marcia J. Bates, PhD

Howard A. Besser, PhD

Christine L. Borgman, PhD (*Presidential Professor Emerita of Information Studies*)

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Beverly P. Lynch, PhD

John V. Richardson, PhD

Elaine Svenonius, PhD

Diana M. Thomas, PhD

Virginia A. Walter, PhD

### Associate Professors

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### Assistant Professors

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Tonia N. Sutherland, PhD, MLIS

Thuy Vo Dang, PhD

### Lecturers

Lynn Boyden, MLIS

Melissa A. Gill, MLIS

Luiz H. Mendes, MLIS

Meredith A. Reese, MA

Yuriko Shimoda, MLIS

## Overview

The Department of Information Studies has one of the top-ranked programs of its kind in the country and has developed an international reputation in the areas of information policy, information-seeking behavior, user interface development, archives, preservation, and cataloging. Whether students choose to pursue a master's degree or a doctorate degree, they graduate with a broad understanding of both theory and practice.

For information about the **Information Studies** department and programs, see the department website.

## Career Prospects

Students with Master of Library and Information Science (MLIS) degrees go on to careers as librarians, archivists, and information professionals in a variety of organizational settings. The Doctor of Philosophy (PhD) focuses on the preparation of scholars in the field.

## Undergraduate Minor

### Information and Media Literacy Minor

The Information and Media Literacy minor is designed for students who wish to augment their major program with a group of related courses that provide a systematic, focused, and critical introduction to information and media literacies. The core courses together with electives provide students with an understanding of the processes, dynamics, and societal implications of the production and dissemination of information and media and skills for their judicious evaluation, consumption, and productive use.

### Admission

To enter the minor, students must have a cumulative grade-point average of 2.3 or better, have completed one required lower-division or upper-division course with a grade of B or better, and submit the minor application. **Applications** are available on the minor website.

### The Minor

**Required Lower-Division Core Courses (10 units):** Two courses selected from Information Studies 10, 20, 30.

**Required Upper-Division Core Courses (9 units):** Information Studies C115, M121 (or Education M121).

**Upper-Division Elective Courses (12-15 units):** Three courses selected from Education 105C, 107A, 109A, 109B, 126, M131C, 133, M135, M137, 144, CM178, Information Studies 118, M135, M137, 180, or 199.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade and be a minimum of 4 units. Students must have a cumulative grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Information Studies PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Library and Information Science

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Library and Information Science/ Latin American Studies MA

## Information Studies

### Lower-Division Courses

**10. Information and Power. (5)** Lecture, four hours. Introduction to core concepts of information and power and relation between them in range of social, economic, political, cultural, technological, and institutional contexts. Topics include markets and economies; cultural and media institutions; state interests in information; conflict and warfare; information organization, classification, and access; power and technology infrastructure; and intellectual freedom. Letter grading.



**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Digital Cultures and Societies. (5)** Lecture, four hours. Examination of social and cultural contexts of global digital networks and systems. Exploration of ethical, infrastructural, and political questions raised at intersection of technologies and cultures. Topics include data surveillance, algorithms, artificial intelligence (AI) systems, digital economies and labor, social media revolutions, indigenous and non-Western uses of technology, digital media literacies, and more. Letter grading.

**30. Internet and Society. (5)** Lecture, four hours. Introduction to key historical and sociotechnical developments that have given rise to today's Internet and related information and communication technologies, from networked computing and telecommunications in 20th century to contemporary digital networks and platforms. Focus on economic, political, and cultural consequences of those developments and technologies in society today. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**97. Variable Topics in Information Studies. (4)** Seminar, four hours. Designed for freshmen/sophomores, but open to all undergraduate students. Exploration of changing set of basic concepts and issues in study of information, information technology, and society and culture at introductory level. May be repeated for credit with consent of instructor. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**C115. Introduction to Information Literacies. (4)** Lecture, four hours. Foundational introduction to current and historical role and impact of information literacy—ability to identify, locate, critically evaluate, use, and create information effectively and ethically, for personal and scholarly uses. Topics include theory and practice related to impact of economic, legal, and social/environmental issues on development of, access to, use, and assessment of information, currently and historically; developing and refining information researching questions; conducting effective information researching; distinguishing among and critically evaluating information researching tools such as Google and databases, as well as types of items, such as ads, opinions, and factual studies; documenting sources used in information researching; effectively helping others learn information researching and critical thinking in support of equity and inclusivity; and designing, creating, and assessing online educational learning objects as positive contributions to addressing social/environmental issues. Concurrently scheduled with course C215. P/NP or letter grading.

**118. Data and Ethics in Society. (5)** Seminar, four hours; discussion, one hour. Exploration of moral, social, political, and ethical ramifications of choices we make at different stages in social construction of data. Includes cultivating critical analysis of processes of data collection, data mining, data storage, and deployment of data affected by variety of different communities, publics, nation-states, and individuals. Students learn basics of ethical and socially just frameworks to assess range of data-driven projects and platforms. Students gain understanding of social, historical, and political dilemmas of big data, algorithmic decision-making, predictive analytics, and distinct challenges associ-

ated with ethical, civil-, human-, and sovereign-rights models of engaging modern digital information era. Letter grading.

**M121. Introduction to Media Literacies. (5)** (Same as Education M121.) Seminar, four hours. Exploration of relationships between media, technology, and popular culture. Students guided to analyze media representations, question process of normalizing dominant ideologies, and create counter-hegemonic media messages. Through application of critical media literacy framework, students expand notions of literacy to be more inclusive of all types of texts; and deepen their abilities to question power of word, image, and soundbite to represent social and environmental injustice. Letter grading.

**M135. Environmental Justice through Lens of Media and Education. (5)** (Same as Education M135.) Seminar, four hours. Exploration of human relationships with natural world, historically and today. Students take critical look at ways information has been shaped, audiences positioned, and movements manipulated to promote commercial interests over public good. Exploration of progressive movements that have in past challenged—and currently challenge—neoliberal agendas, extractive policies, and unsustainable practices. Letter grading.

**M137. Critical Digital Media Literacies. (4)** (Same as Education M137.) Lecture, four hours. Students question relationships with digital media and information society and explore how media and information communication technologies are improving society, strengthening democracy, and opening up opportunities for challenging hegemony and promoting social transformation. Problematization of social media and questioning of ways it is being used to surveil, capture data, spread hate, mislead, distract, and destabilize democracies. Students analyze media representations, question process of normalizing dominant ideologies, and create counter-hegemonic media messages. Combines theoretical foundations of cultural studies and critical pedagogy with practical applications of new digital media and technology, as well as traditional print-based means of communication. Exploration of media representations of race, class, gender, sexual orientation, and other identity markers. Students analyze and create media projects related to education. Letter grading.

**139. Letterpress Laboratory. (1)** Laboratory, one hour. Hands-on printing experience in letterpress shop designed to give students in information studies, design, or other disciplines understanding of printing process. Basic instruction provided, and students work on group project for duration of term. May be repeated twice. P/NP grading.

**180. Special Topics in Information Studies. (4)** Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Selected topics or issues related to social, cultural, economic, or political aspects of information and information systems. Consult Schedule of Classes for topics and instructors. May be repeated once for credit with topic change. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**199. Directed Research in Information Studies. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**200. Information in Society. (4)** Lecture, two hours; discussion, two hours. Examination of processes by which information and knowledge are created, integrated, disseminated, organized, used, and preserved. Topics include history of communication technologies, evolution of literacy, development of information professions, and social issues related to information access. Letter grading.

**201. Ethics, Diversity, and Change in Information Professions. (4)** Lecture, two hours; discussion, two hours. Service learning course that serves as forum to discuss, learn, and understand ethical challenges of multicultural information society that shape societal, professional community, and individual views and impact professional practice, decision making, and public policy. Letter grading.

**202. History of Books and Literacy Technologies. (4)** Lecture, two hours; discussion, 90 minutes. Issues in history of books, writing, and literacy technologies. Investigation of invention of writing, diverse cultural concepts of literacy, earliest use of systematic notation systems in Mesopotamia, and current development of devices and practices that shape contemporary concepts of book of future. Discussion of historical development of technology (tablets, scrolls, codices, illumination and illustration techniques, paper and mass production, photography, digital tools), institutions (libraries, printing and publishing industries), cultural issues and politics (publishing, censorship, colonialism, globalization), formats and styles (type design, graphic design, aesthetics), and some important figures and events in book history. Focused on Western traditions, but not to exclusion of developments in Asia, Near East, Islamic empire, and elsewhere, and questions of cultural diffusion and diversity encouraged. Letter grading.

**203. Seminar: Intellectual Freedom and Information Policy Issues. (4)** Seminar, four hours. Investigation of concept of intellectual freedom, information policy issues, civil liberties and civil rights, censorship, and other restraints on access to information. Letter grading.

**206. Introduction to Economics of Information. (4)** Seminar, three and one half hours. Introduction to key concepts, scholars, and studies in economics of information. Topics include economic value and measurement of information, information industries and markets, public goods theories of knowledge and information, network externalities, consequences of intellectual property regimes, information and economic development, information work and occupations, information and organizational processes, productivity paradox, and sectoral analyses of national and global information economies. Letter grading.

**208. Scholarly Communication and Bibliometrics. (4)** Lecture, four hours. Preparation: one inferential statistics course. Survey of current theory, method, and empirical studies at intersection of scholarly communication and bibliometrics, seeking to understand flow of ideas through published record, whether in print, electronic form, or other media. Letter grading.

**210. Global Media and Information. (4)** Lecture, three and one half hours. Question of what diversity and culture mean in era of distributed networks and massive technological diffusion looms. Part of this involves problem of how to work with differing ways of knowing, with differing ontologies. It is now widely accepted that global cultures and communities differ in

way they practice knowledge, understanding, and making meaning of their worlds. How we draw boundaries around culture and community has become increasingly complicated, as culture becomes increasingly mediated and community has elements of local place and global imagination. How are political, economic, and cultural identities being shaped in global media culture? How does this shape nature of how power functions? How does this impact heritage, economy, politics, and identity? Letter grading.

**211. Artifacts and Cultures. (4)** Lecture, two hours; discussion, two hours. Exploration of social, cultural, and technical practices through which meanings, memories, ideas, and knowledge-claims are generated. Concepts are recorded, reproduced, mediated, collected, and appropriated; they are sometimes forged, stolen, or subverted and are often shared, juxtaposed, exhibited, communicated, interpreted, remixed, or repurposed. Their formats may be oral and written, verbal and pictorial, aural and visual, and inscriptive and performative. Artifacts are single-medium and multimedia, static and dynamic, numerical and narrative, scholarly and popular, and analog and digital. They constitute documents, records, data sets, and cultural objects through which information and evidence are authored, published, collocated, exchanged, preserved, and accessed. Examination of these artifacts and their properties, types, and relationships: media, formats, genres, materials, states, contents, components, subjects, structures, functions, aesthetic qualities, roles, costs, affordances, and use values. Letter grading.

**212. Values and Communities in Information Professions. (4)** Lecture, two hours; discussion, two hours. Forum to discuss, understand, and critique value systems and power structures embedded in information and work in diverse societies. Exploration of importance of thinking locally, from grassroots, in design, evaluation, and engagement with information institutions and technologies, ranging from archives and libraries to Internet. Aspects of information society that shape and are shaped by cultural, societal, professional, community, and individual values, including exploration of impact of such values on professional practice, decision making, and public policy. Letter grading.

**213. Current Issues in Librarianship. (4)** Lecture, two and one half hours; discussion, one hour. Overview of historical and evolving conceptual foundations of librarianship, including professional associations, key practices, social context of library services, and current issues in library studies. S/U or letter grading.

**214. Informatics: Principles and Practices. (4)** Lecture, three and one half hours. Theories, principles, and professional practices of informatics, including social analysis of information systems, values and design, infrastructural dynamics, user experience, and prospective analysis. S/U or letter grading.

**C215. Introduction to Information Literacies. (4)** (Formerly numbered 448.) Lecture, four hours. Foundational introduction to current and historical role and impact of information literacy—ability to identify, locate, critically evaluate, use, and create information effectively and ethically, for personal and scholarly uses. Topics include theory and practice related to impact of economic, legal, and social/environmental issues on development of, access to, use, and assessment of information, currently and historically; developing and refining information researching questions; conducting effective information researching; distinguishing among and critically evaluating information researching tools such as Google and databases, as well as types of items, such as ads, opinions, and factual studies; documenting sources used in information researching; effectively helping others learn information researching and critical thinking in support of equity and inclusivity; and designing, creating, and assessing online educational learning objects as positive contributions to addressing social/environmental issues. Concurrently scheduled with course C115. S/U or letter grading.

**226. Indigenous Librarianship. (4)** Lecture, three hours. Exploration of trends and topics in indigenous librarianship (IL), emerging branch of library and information science. Exploration of IL as category of social re-

search that seeks to understand how particularities of sociohistorical, economic, political, and cultural conditions of indigenous communities shape perspectives and practices of collection, organization, preservation, and dissemination of knowledge. Investigation of practices associated with IL, focusing on means of revitalizing indigenous library institutions and knowledge systems; and on procedures and norms to guide responsible and respectful care for materials with indigenous content that are preserved outside of indigenous communities. Recommended for students doing interdisciplinary research with advocacy focus; and for those interested in working with tribal communities and/or collections containing indigenous materials. Letter grading.

**227. Information Services in Culturally Diverse Communities. (4)** Lecture, four hours. Issues in provision of information services in multiethnic and multilingual society. Understanding role of information institutions in promoting cultural diversity and preserving ethnic heritage. Letter grading.

**228. Assessment, Measurement, and Evaluation of Information Organizations and Services. (4)** Lecture, four hours. Introduction to assessment and evaluation as formal processes of inquiry with individual components. Demonstration of use of evidence gathered for planning, decision making, and accountability in information organizations. Review and implementation of various methods appropriate to design of assessment and evaluation studies. Letter grading.

**M229C. Introduction to Slavic Bibliography. (2)** (Same as Slavic M229.) Lecture, two hours. Introduction to Slavic and East European bibliography for the humanities and social sciences. Emphasis to be determined by requirements and background of enrolled students. Topics include relevant library terminology and concepts; survey of languages and transliteration systems; acquisition of Slavic and East European library materials; Slavic and East European scholarship in the West; relevant reference sources, archival resources, and research methods; survey of online databases; compilation of bibliographies. S/U grading.

**233. Records and Information Resources Management. (4)** Lecture, three hours. Introduction to records and information resources management in corporate, government, and other organizational settings, including analysis of organizational information flow, classification and filing systems, records retention scheduling, records protection and security, reprographics and image management technology, and litigation support. Letter grading.

**234. Contemporary Children's Literature. (4)** Lecture, four hours. Reading interests and correlative types of literature surveyed with reference to growth and development of children. Emphasis on role of librarian in responding to needs and abilities of children through individualized reading guidance. S/U or letter grading.

**M238. Environmental Protection of Collections for Museums, Libraries, and Archives. (4)** (Same as Conservation M240.) Lecture, two hours; laboratory, two hours. Requisite: course 432. Review of environmental and biological agents of deterioration, including light, temperature, relative humidity, pollution, insects, and fungi. Emphasis on monitoring to identify agents and understanding of materials sensitivities, along with protective measures for collections. Letter grading.

**239. Letterpress Laboratory. (1)** Laboratory, two hours. Hands-on printing experience in letterpress shop designed to give students in information studies, design, or other disciplines understanding of printing process. Basic instruction provided, and students work on group project for duration of term. S/U grading.

**240. Management of Digital Records. (4)** Lecture, three hours. Introduction to long-term management of digital administrative, information, communications, imaging, or research systems and records. Topics include electronic recordkeeping, enterprise and risk management, systems analysis and design, metadata development, data preservation, and technological standards and policy development. Letter grading.

**241. Digital Preservation. (4)** Lecture, three and one half hours. Nature of digital media and networking necessitates reformulation of traditional concepts such as authenticity, authorship, and originals; information

systems and metadata that are specifically designed to manage preservation process; new ethical, rights, and collaborative frameworks; and economic, legal, and policy tools with which to manage digital information over long term. Introduction to strategies, techniques, and standards, as well as continuing challenges related to preserving born-digital/born-networked/digitized materials (e.g., electronic records, digital archives, video games, scientific simulations, digital humanities environments, sound and moving image materials, social media and personal digital archives). Implications for digital preservation of new technologies and their applications. Letter grading.

**M244. Collection Management for Archives, Libraries, and Museums. (4)** (Same as Conservation M244.) Lecture, two hours; fieldwork, two hours. How conservators work together with curators, collections managers, mount makers, designers, and registrars to permit collections to be both accessed and preserved. Letter grading.

**245. Information Access. (4)** Lecture, two hours; discussion, one hour. Requisites: courses 200, 260. Provides fundamental knowledge and skills enabling information professionals to link users with information. Overview of structure of literature in different fields; information-seeking behavior of user groups; communication with users; development of search strategies using print and electronic sources. Letter grading.

**246. Information-Seeking Behavior. (4)** Lecture, three hours; discussion, one hour. Study of factors and influences, both individual and social, associated with human beings needing, using, and acting on information. Topics include information theory, human information processing, information flow among social and occupational groups, and research on information needs and uses. Letter grading.

**250. Techniques and Issues in Information Access. (4)** Lecture, four hours. Requisite: course 245. General reference materials (not specific to subject access), with advanced work in reference process and in cognitive and behavioral aspects of inquirers and expert reference librarians. Letter grading.

**M253. Medical Knowledge Representation. (4)** (Same as Bioengineering M226.) Seminar, four hours; outside study, eight hours. Designed for graduate students. Issues related to medical knowledge representation and its application in healthcare processes. Topics include data structures used for representing knowledge (conceptual graphs, frame-based models), different data models for representing spatio-temporal information, rule-based implementations, current statistical methods for discovery of knowledge (data mining, statistical classifiers, and hierarchical classification), and basic information retrieval. Review of work in constructing ontologies, with focus on problems in implementation and definition. Common medical ontologies, coding schemes, and standardized indices/terminologies (SNOMED, UMLS). Letter grading.

**M254. Medical Information Infrastructures and Internet Technologies. (4)** (Same as Bioengineering M227.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Introduction to networking, communications, and information infrastructures in medical environment. Exposure to basic concepts related to networking at several levels: low-level (TCP/IP, services), medium-level (network topologies), and high-level (distributed computing, Web-based services) implementations. Commonly used medical communication protocols (HL7, DICOM) and current medical information systems (HIS, RIS, PACS). Advances in networking, such as wireless health systems, peer-to-peer topologies, grid/cloud computing. Introduction to security and encryption in networked environments. Letter grading.

**M255. Medical Decision Making. (4)** (Same as Bioengineering M228.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Overview of issues related to medical decision making. Introduction to concept of evidence-based medicine and decision processes related to process of care and outcomes. Basic probability and statistics to understand research results and evaluations, and algorithmic methods for decision-making processes (Bayes theorem, decision trees). Study design, hy-

pothesis testing, and estimation. Focus on technical advances in medical decision support systems and expert systems, with review of classic and current research. Introduction to common statistical and decision-making software packages to familiarize students with current tools. Letter grading.

**256. Information Resources for Business. (4)** Lecture, four hours. Prerequisite: course 245. Introduction to information needs of business world. Business guides, encyclopedias, directories, yearbooks, indexes, loose-leaf services, government publications, databases, and other sources of business literature. Letter grading.

**260. Description and Access. (4)** Lecture, three and one half hours. Social, cultural, and technical practices—formal and informal, institutional and personal—through which documents, records, and other forms of information are organized and represented. Design, development, and evaluation of techniques and tools, including data models, metadata schemata, search engines, and management systems in support of curatorship, stewardship, discovery, and use. Letter grading.

**262A. Data Management and Practice. (4)** Lecture, three and one half hours. Designed for MLIS and PhD students. Survey of landscape of data practices and services, including data-intensive research methods; social studies of data practices; comparisons between disciplines; management of data by research teams, data centers, libraries, and archives; practices of data sharing and reuse; and introduction to national and international policy for stewardship of data. Assessment of data archiving needs of one research community and group project to develop real data management plan in partnership with UCLA researchers in other academic departments. Letter grading.

**262B. Data Curation and Policy. (4)** Lecture, three and one half hours. Designed for MLIS students. Continuation of course 262A to address topics of data curation and policy in more depth. Data selection and appraisal, archives and repositories, economics of data management, data citation and metrics, technologies for data access and curation, provenance, intellectual property, policy roles of multiple stakeholders in data, and institutional challenges in curation and stewardship of research data. Assessment of data archives and repositories and group project to curate actual data of UCLA researchers in other academic departments. Letter grading.

**270. Systems and Infrastructures. (4)** Lecture, four hours. Social, cultural, and technical practices through which information and media infrastructures—networks, systems, technologies, algorithms, interfaces, standards, institutions, bureaucracies, markets—are designed, built, maintained, and evaluated. Ways in which information infrastructures both shape and are shaped by governmental policy, institutional decision making, socioeconomic trends, labor movements, technical advances, and professional and personal value systems, at levels ranging from local to global. S/U or letter grading.

**271. Introduction to Computer Systems and Programming. (4)** Lecture, three and one half hours. Introduction to computer programming and survey of foundational computer science topics, including boolean logic, computer architecture, operating systems, algorithms, networks, and databases. Focus on practical skills for manipulating library and archive metadata, such as searching, sorting, regular expressions, writing database queries, calling application program interface (API), and handling multiple serialization formats (XML, JSON, CSV, Excel). Emphasis on working with standard metadata encodings, such as MARC and EAD. Letter grading.

**272. Human/Computer Interaction. (4)** Lecture, four hours. Survey of social, behavioral, design, and evaluation issues in human/computer interaction, with readings from several disciplines. Extensive use of technology demonstrations and class discussions. Recommended for students in any discipline involved in design or implementation of information technologies. Letter grading.

**274. Database Management Systems. (4)** Lecture, three hours; laboratory, two hours. Theories, principles, and practicalities of database systems, including

data models, retrieval mechanisms, evaluation methods, and storage, efficiency, and security considerations. S/U or letter grading.

**275. Community Media and Design. (4)** Lecture, two hours; laboratory, two hours. Information professionals, scholars, activists, and information creators/designers/architects focus on questions of culture and community to engage students in understanding information resources as cultural objects. Role of cultural heritage institutions within dynamics presented, but most fundamentally on how communities in partnership with information professionals can create, author, and represent information on their own and within their own terms. How new media can begin to serve as tool of empowerment rather than stratification. Study of impacts of technology on larger scales through readings and introductory sketches. Letter grading.

**278. Information and Visualization. (4)** Lecture, two hours; discussion, 90 minutes. Access to and analysis of information through visualization has become increasingly prevalent as digital tools have made creation of such visualizations easier and more popular. Many software tools for such visualizations come from statistical packages; others come from GIS or spatial mapping, while others are more diagrammatic in design. Basic organization of graphical user interfaces depends on visualization of function, structure of and assumptions about user experience, and other graphical features that embody models of information in daily use. What are ways in which organization of visualization presents arguments about knowledge? What historical and critical tools can be brought into useful dialog with contemporary visualizations? Letter grading.

**279. User Experience Design. (4)** Seminar, four hours. Preparation: at least one course from 246, 272, 276, 277, 455. Prerequisites: courses 200, 260. Content varies from term to term to allow emphasis on specialized topics such as vocabulary control, file design, indexing, classification, text processing, measurement of relevance, evaluation of information systems, and social and policy issues related to information technology and services. Letter grading.

**280. Social Science Research Methodology for Information Studies. (4)** Lecture, four hours. Understanding of nature, uses, and practice of research appropriate to information studies. Identification of research problems and design and evaluation of research. Social science quantitative and qualitative methods. Emphasis on inquiry methodology and empirical research. S/U or letter grading.

**281. Historical Methodology of Information Studies. (4)** Lecture, four hours. Prerequisite: course 200. Introduction to historical research as it relates to library and information science. Identification of key primary and secondary source material for writing history in field. Critical analysis of selected histories of various areas in the profession. Problem-oriented approach. Letter grading.

**282. Design as Research Method. (4)** Seminar, three and one half hours. Theories, principles, and application of design as methods for discovery, exploration, and evaluation of user requirements, functionality, values, and system structure. S/U or letter grading.

**288. Research Apprenticeship Course. (2 to 4)** Seminar, two hours. Use of mentorship model of training graduate students in information studies, with focus on development of graduate student research topics. Assignment of common readings related to these topics; students have opportunity to offer and receive feedback. May be repeated for credit. S/U grading.

**289. Seminar: Special Issues in Information Studies. (4)** Seminar, three and one half hours. Identification, analysis, and discussion of critical intellectual, social, and technological issues facing the profession. Topics may include (but not limited to) expert systems, literacy, electronic networks, youth at risk, information literacy, historical bibliography, preservation of electronic media, etc. May be repeated with topic change. Letter grading.

**290. Research Seminar: Information Studies. (1 to 2)** Seminar, one to two hours. Designed for PhD students. Emphasis on recent contributions to theory, research, and methodology. May be repeated for credit. S/U grading.

**291A. Doctoral Seminar: Theoretical Traditions in Information Studies. (4)** Seminar, four hours. Nature of information studies—ontological, epistemological, and ethical accounts of information and of information arts and sciences. Conceptions, theories, and models of information; information-related artifacts, agents, contexts, institutions, practices, properties, values, and related phenomena. Interdisciplinary context—sub-fields of information studies and cognate disciplines. Frameworks for theory construction, such as critical theory, discourse analysis, hermeneutics, phenomenology, semiotics, social epistemology. Letter grading.

**291B-291C. Special Topics in Theory of Information Studies. (4-4)** Seminar, four hours. Enforced requisite for course 291C: course 291A. Topics include information and evidence—record-keeping and memory-making, personal and community identity, accountability and trust. Information and design—design and implementation of information systems and services, information aesthetics. Information retrieval and knowledge organization. Information seeking, access, and use—contexts, techniques, needs, barriers. Information and power—groups, ideologies, identities, structures. Information and value—information ethics, evaluation of information services. Information policy and law—processes, institutions, players, stakes. Information institutions and professions—domains, ecologies, cultures, communities. Economics, geography, history, philosophy, politics, sociology of information. Letter grading.

**298A. Doctoral Seminar: Research Methods and Design. (4)** Seminar, four hours. Survey of quantitative, qualitative, and historical research designs. Ethical issues; conceptualization and measurement; indexes, scales, and sampling; experimental, survey, field, and evaluation research; data analysis. Letter grading.

**298B-298C. Special Topics in Methodology of Information Studies. (4-4)** Seminar, four hours. Enforced requisite for course 298C: course 298A. Topics include anthropological fieldwork methods, archival methodology, bibliographical studies, textual analysis, discourse analysis, historical methods, information visualization, network analysis—bibliometrics, informetrics, scientometrics, social network analysis. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Professional Development and Portfolio Design. (2 to 4)** Lecture, two hours; discussion, two hours. Preparation: completion of information studies core courses. Drawing on literature from many fields, exploration of issues related to professional development, such as career planning, continuing education, mentoring, and reflective practice; students also engage in process of guided portfolio design for MLIS degree. S/U grading.

**410. Management Theory and Practice for Information Professionals. (4)** Lecture, two hours; discussion, two hours. Principles and practice of management in all types of organizations where information professionals work. Letter grading.

**422. College, University, and Research Libraries. (4)** Lecture, four hours. Organization, administration, collections, facilities, finances, and problems of college and university libraries and their relationships within institutions of which they are part. Functions of research libraries and work of their staffs in serving scholars. Letter grading.

**423. Public Libraries. (4)** Lecture, four hours. Government, organization, and administration of municipal, county, and regional public libraries; developments in changing patterns of public library service. S/U or letter grading.

**424. Storytelling. (4)** Lecture, two hours; demonstration, two hours. Theory and practice of telling stories to children and adults in public and school libraries. S/U grading.

**425. Library Services and Programs for Children. (4)** Lecture, two hours; discussion, two hours. Theory and practice of service to children in public libraries. Overview of professional library service to children aged 14 and under; provides opportunities for students to gain experience in particular skills needed to provide that service. Letter grading.

**426. Young Adult Literature. (4)** Lecture, four hours. Overview of literature which is of interest to young adults (seventh grade and above). Discussion of special problems in working with young people and psychology of teenagers. S/U or letter grading.

**427. Young Adult Services. (4)** Lecture, 90 minutes; discussion, two hours. Theory and practice of service to teens and tweens in libraries. Overview of professional library service to youth aged 11 and over; opportunities for students to gain experience in particular skills needed to provide that service. Discussion of special challenges in working with young people and psychology of teenagers. S/U or letter grading.

**430. Library Collection Development. (4)** Lecture, three and one half hours. Background of publishing and book trade from digital to antiquarian pertinent to development of collections in public, school, academic, and special libraries. Theory and practice of collection development and management, including evaluation of library user needs and assessments of collections. Organization and administration of acquisition and collection development departments. Letter grading.

**431. Archives, Records, and Memory. (4)** Lecture, four hours. Overview of historical and evolving conceptual foundations, major professional institutions, key practices, and contemporary issues and concerns of archival studies and American archival profession, as well as other fields interested in archives, records, and memory. S/U or letter grading.

**432. Issues and Problems in Preservation of Heritage Materials. (4)** Lecture, six hours. Introduction to fields of library conservation and preservation, with emphasis on preservation administration. Letter grading.

**433. Community-Based Archiving. (4)** Lecture, three and one half hours. Builds on student understanding of and experience working with communities on development of practical strategies for documenting their activities; managing, collecting, and preserving their records and other historical and cultural materials; and undertaking community-centric collaborative research. Students required to reflect critically on questions about definition, community memory and recordkeeping practices, motivations, positionality and politics, voice, ethics, advocacy, funding and long-term sustainability, ownership, access and use, technological implementation, and collaborations. Letter grading.

**434. Archival Use and Users. (4)** Lecture, three and one half hours. Requisite: course 431. Examination of who uses archives and why, with ultimate goal of creating ways to better understand and meet needs of these users as well as engage new audiences in archival use. While archivists have traditionally conceived of their users as academic researchers, more thorough investigation expands this conception of users to include genealogists, artists, K-12 students and educators, families of victims of human rights abuse, community members, and members of general public. Methods for studying users, ways to conduct outreach to target user groups, and ways in which archivists can engage general public. Letter grading.

**438A. Seminar: Advanced Issues in Archival Science—Archival Appraisal. (4)** Seminar, four hours. Requisite: course 431. Evaluation and examination of contributions of key figures in development of archival appraisal theory; identification and evaluation of distinct movements in archival appraisal; identification of cultural, political, sociological, and technological movements that can have impact on appraisal methodologies. Letter grading.

**438B. Seminar: Advanced Issues in Archival Science—Archival Description and Access Systems. (4)** Seminar, four hours. Requisite: course 431. Exploration of history of archival description and access systems in the U.S. and their development since World War II; data collection; access tools and implications of these issues in development of online archival access systems. Letter grading.

**439. Seminar: Special Collections. (4)** Seminar, two hours; discussion, 90 minutes. Students work with special collections materials on one focused theme or topic and have to think through research aspects of exhibit or symposium or collection assessment and then create well-focused and curated agenda for presentation, exhibition, or preservation of materials. Letter grading.

**461. Descriptive Cataloging. (4)** Lecture, four hours. Entry and description of library materials. Constitution, structure, and form of the library catalog. Cataloging services, tools, and procedures. Cataloging rules and their application. S/U or letter grading.

**462. Subject Cataloging and Classification. (4)** Lecture/discussion, four hours. Requisite: course 461. Overview of major alphabetic-subject and systematic indexing languages and their use in manual and online environments, including theory and application of Library of Congress subject headings and of Dewey decimal and Library of Congress classifications. S/U or letter grading.

**463. Indexing and Thesaurus Construction. (4)** Lecture, four hours. Principles of design and methods of construction of thesauri. Evaluation and overview of thesauri used in manual and online environments. Basic professional techniques for indexing variety of types of materials and for preparing informative and indicative abstracts. Letter grading.

**464. Metadata. (4)** Lecture, four hours. Introduction to variety of metadata provided for digitized and other electronic information resources. Introductory theory and practice designing and applying metadata. S/U or letter grading.

**480. Introduction to Media Archiving and Preservation. (4)** Seminar, four hours. Overview of history, conceptual foundations, policies, institutions, and professional methods that have shaped collections of audiovisual materials from early 20th century to present. Introduction to fundamental archival concepts and key practices, including collection development, appraisal, preservation, restoration, arrangement and description, and critical analysis of their specific application to media collections and materials. Discussion of classical and emergent models for media archive administration, including funding, programming, outreach, access, and reuse; changing role of technology in media creation, collection, and preservation; ethics and community standards; different roles of public, private, and national media archives; and cultural impact of historical and contemporary audiovisual media. Letter grading.

**495. Teaching Assistant Training Seminar. (2)** Seminar, two hours. Limited to departmental doctoral students. Preparation for teaching assistant appointments in departmental undergraduate courses. Principles of instructional design and evaluation, curriculum development, instructional technology use, and key teaching issues (diversity, students with disabilities, academic integrity, copyright). S/U grading.

**497. Fieldwork in Libraries or Information Organizations. (4 or 8)** Fieldwork, 12 or 24 hours depending on nature and complexity of experience or project. Faculty-directed field experience in approved library, archive, or other information setting. Fieldwork experiences may include opportunities in state, national, and international institutions. S/U grading.

**498. Internship. (4)** Discussion, to be arranged. Supervised professional training in a library or information center approved by internship coordinator. Minimum of 120 hours per term. May be repeated twice. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of graduate adviser and graduate dean, and host campus instructor, depart-

ment chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research. (1 to 8)** Tutorial, to be arranged. Directed special studies in fields of bibliography, librarianship, and information science. Variable conference time depending on nature of study or complexity of research. No more than 8 units may be applied toward course requirement for MLIS degree. S/U grading.

**597. Directed Studies for PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. S/U grading.

**598. MLIS Thesis Research and Writing. (2 to 8)** Tutorial, to be arranged. Designed for graduate library and information science students. Supervised independent research for candidates in MLIS thesis option. S/U grading.

**599. PhD Research and Writing. (2 to 12)** Tutorial, to be arranged. S/U grading.

## INTEGRATIVE BIOLOGY AND PHYSIOLOGY

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Rachelle H. Crosbie, PhD, *Chair*

Patricia E. Phelps, PhD, *Vice Chair*

## Faculty Roster

### Professors

Gene D. Block, PhD, *Chancellor*

Scott H. Chandler, PhD

Rachelle H. Crosbie, PhD

Mark A. Frye, PhD

David L. Glanzman, PhD

Fernando Gómez-Pinilla, PhD, *in Residence*

Walter H. Metzner, PhD

Ketema N. Paul, PhD

Patricia E. Phelps, PhD

Gina R. Poe, PhD (*Eleanor Leslie Professor of Innovative Brain Research*)

Barnett A. Schlinger, PhD

James G. Tidball, PhD

David W. Walker, PhD

Stephanie A. White, PhD (*William Scheibel Professor of Neuroscience*)

Roy Wollman, PhD

Xinshu Grace Xiao, PhD

Xia Yang, PhD

### Professors Emeriti

Arthur P. Arnold, PhD

R. James Barnard, PhD

V. Reggie Edgerton, PhD

Gordon L. Fain, PhD

Gerald W. Gardner, PhD

Alan Garfinkel, PhD

Alan D. Grinnell, PhD



Margaret E. Haberland-Noce, PhD  
 Peter M. Narins, PhD  
 Judith L. Smith, PhD  
 Allan J. Tobin, PhD (*Eleanor I. Leslie Professor Emeritus of Neuroscience*)

### Associate Professors

Stephanie M. Correa, PhD  
 Eric J. Deeds, PhD  
 Elaine Y. Hsaio, PhD (*De Logi Professor of Biological Sciences*)  
 Amy C. Rowat, PhD (*Marcie H. Rothman Presidential Professor of Food Studies*)  
 Claudio J. Villanueva, PhD

### Assistant Professors

Kacie D. Deters, PhD  
 Pearl J. Quijada, PhD

### Senior Lecturer

Ronald H. Cooper, PhD

### Lecturer

Joseph Esdin, PhD

### Adjunct Professors

Tama W. Hasson, PhD  
 Million Mulugeta, DVM, PhD

### Adjunct Associate Professors

Anthony R. Friscia, PhD  
 Janel E. Le Belle, PhD  
 Mark J. Tramo, PhD

### Adjunct Assistant Professors

J. Edward Van Veen, PhD  
 Sharmila Venugopal, PhD

## Overview

The cornerstone of the Physiological Science curriculum is vertebrate physiology, with emphases on integrative functions. The research and educational programs of the Department of Integrative Biology and Physiology focus on integrative physiology at several levels of organization from molecules to living organisms, microscopic structures to macroscopic organization, and cellular properties to organ functions. Students receive comprehensive instruction in all areas of physiological science, while elective courses reflect faculty research expertise, including developmental neurobiology, gene regulation/neural development, cellular neurobiology, molecular neurobiology, neuromuscular physiology, neuroendocrine physiology, cardiac physiology, diet and degenerative disease, auditory and visual behavior, biomechanics of rehabilitative medicine, muscle cell biology, inflammatory cell biology, vascular biology, cardiac electrophysiology, neuromotor control, and social control of neuronal plasticity.

## Undergraduate Major

### Physiological Science BS

#### Learning Outcomes

The Physiological Science major has the following learning outcomes:

- Demonstrated broad-based knowledge of the fundamentals of anatomy and vertebrate physiology
- Demonstrated ability to address scientific questions or solve problems using quantitative and inquiry-related skills, including developing hypotheses, designing and performing experiments, analyzing data, and interpreting results
- Reading and understanding of primary scientific literature
- Understanding key questions and hypotheses
- Interpretation of results and conclusions
- Discrimination of quality through critique
- Appreciation for research by participating in one or more laboratory experiences
- Value science and research and their relevance to one's own life and society

## Entry to the Major

### Admission

To enter the Physiological Science major, students must complete Chemistry and Biochemistry 14A, 14B, and 14C, or 20A, 20B, and 30A, Life Sciences 7A, 7B, Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A, or Life Sciences 30A, 30B, and 40, or Statistics 13, and Physics 1A or 5A, with a minimum grade of C in each course and a grade-point average of 2.5 or better in all before fall quarter of their third year. Repetition of more than one of these nine preparation courses results in denial of admission to the major. After successful completion of the courses, students must contact the Undergraduate Advising Office to declare the major.

### Transfer Students

Transfer applicants to the Physiological Science major with 90 or more quarter units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, and one semester of organic chemistry with laboratory. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Transfer credit for UCLA Extension coursework and for any departmental courses is subject to prior approval by the department; consult with the undergraduate counselor before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

#### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, 14CL, and 14D, or 20A, 20B, 20L, 30A, 30AL, 30B, and 30BL; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

### The Major

*Required:* Physiological Science 107, 111A, 111B, 111L, Chemistry and Biochemistry 153A.

A total of five upper-division physiological science electives is required. Eight units of course 199 or 4 units each (8 units total) of courses 198A and 198B, for students in the departmental honors program, may be applied toward the elective requirement.

### Honors Program

The honors program provides exceptional students with the opportunity for individual research culminating in an honors thesis.

## Policies

### Preparation for the Major

For all preparation courses, students must complete each course with a grade of C or better. Repetition of more than one preparation course results in dismissal from the major.

### The Major

One 200-level graduate course may be applied toward the elective requirement with departmental approval. Courses 189HC, 191H, 192, 193, 195, 196, and graduate courses at the 300, 400, or 500 level may not be applied toward the elective requirement.

Each required and elective course must be taken for a letter grade, and a C average must be maintained in all upper-division courses taken for the major. A grade of C or better is required in Physiological Science 107 and 111A to enroll in course 111B. If students fail to meet these requirements, they may be dismissed from the major.

### Honors Program

Students must have a 3.0 overall grade-point average (GPA) and a 3.2 GPA in the Life Sciences core curriculum. After completion of all requirements and with the recommendation of the faculty adviser, the undergraduate affairs committee confers departmental honors at graduation.

## Graduate Major

### Physiological Science MS

Applicants interested in pursuing graduate study may apply directly to the interdepartmental [Molecular, Cellular, and Integrative Physiology PhD](#) program or the interdepartmental [Neuroscience PhD](#) program.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Physiological Science

### Lower-Division Courses

**3. Introduction to Human Physiology.** (5) Lecture, three hours; laboratory, two hours. Not open to Physiological Science majors. Courses 3 and 5 may be taken independently, concurrently, or in either sequence. Understanding of human body, its organization from molecular to cellular to tissues and organs, and how component parts function in integrated manner to permit life as we know it. P/NP or letter grading.

**5. Issues in Human Physiology: Diet and Exercise.** (5) Lecture, three hours; discussion, 30 minutes; laboratory, 90 minutes. Not open to Physiological Science majors. Basic introduction to principles of human biology, with special emphasis on roles that exercise and nutrition play in health, and prevention and management of such illnesses as hypertension, diabetes, and heart disease. P/NP or letter grading.

**6. The Human Machine: Physiological Processes.** (4) Not open to Physiological Science majors. General introduction to human musculoskeletal, cardiovascular, and respiratory systems and their function, with special emphasis on mechanical and physiological aspects of homeostasis and environmental interaction. Application of physical principles in selected areas of biomechanics, hemodynamics, ergonomics, orthopedics, and robotics. P/NP or letter grading.

**7. Science and Food: Physical and Molecular Origins of What We Eat.** (5) Lecture, three hours; laboratory, two and one half hours. Preparation: high school chemistry, mathematics, physics. What makes lettuce crispy and some cuts of meat chewier than others? Exploration of origins of food texture and flavor, using concepts in physical sciences to explain macroscopic properties such as elasticity and phase behavior, as well as physiological role of food molecules in plants and animals we eat. Letter grading.

**13. Introduction to Human Anatomy.** (5) Lecture, four hours; laboratory, five hours. Not open to Physiological Science majors. Structural survey of human body, including skeletomuscular, nervous, circulatory, respiratory, digestive, and genitourinary systems. Laboratory includes examination of human cadaver specimens. Letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Introduction to Physiological Science.** (2) Lecture, one hour; discussion, one hour. Limited to freshmen/sophomores. Introduction to current topics in physiological science by a team of departmental faculty members. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100. Experimental Statistics.** (4) Lecture, four hours. Introduction to statistics with focus on computer simulation instead of formulas. Bootstrap and Monte Carlo methods used to analyze physiological data. P/NP or letter grading.

**M106. Neurobiology of Bias and Discrimination.** (4) (Same as Neuroscience M187 and Psychology M166.) Lecture, four hours. Limited to junior/senior neuroscience, physiological science, and psychology students. Exploration of aspects of mammalian brain function that generate preference, bias, and discrimination. Consideration of research at multiple levels of analysis from genetics to neural circuits to behavior. Discussion of societal implications of these research findings, including their relevance to public policies and criminal justice system. Letter grading.

**107. Systems Anatomy.** (5) Lecture, four hours; laboratory, three hours; tutorial, two hours. Requisites: Life Sciences 2 or 7C, and Physics 1A, 5A, or 6A. Students must receive grade of C or better to proceed to next course in series. Systems anatomy focused primarily on human anatomy. Topics include cardiorespiratory, reproductive, nervous, and skeletomuscular systems, with introduction to biomechanical principles. Letter grading.

**108. Head and Neck Anatomy: Evolutionary, Biomechanical, Developmental, and Clinical Approach.** (4) Lecture, three hours; laboratory, two hours. Requisite: course 107. Strongly recommended: course 153. Prior to first meeting, students must complete Bloodborne Pathogens training course through UCLA Environment, Health and Safety. Introduction to head and neck anatomy. Dissection of head and neck, with focus on vasculature, innervation, and musculature to put them in three-dimensional context. Coverage of evolutionary, developmental, physiological, and biomechanical aspects of skull, including comparative anatomy of other vertebrate skulls, dental evolution and mechanics, respiratory anatomy, and developmental origins of head structures. Letter grading.

**109. Cellular and Molecular Insights into Cardiovascular Development and Disease.** (4) Lecture, three hours; discussion, one hour. Requisite: course 111B. Discussion of cellular and molecular players involved in cardiac morphogenesis, postnatal heart growth, and cardiac regeneration, to better understand emergence of cardiac diseases such as congenital heart disease, coronary artery disease, and atherosclerosis. Use of primary literature to highlight modern genetic tools such as transgenic animal models and sequencing technologies to investigate how various cardiac cell lineages and/or gene perturbations contribute to cardiac pathophysiology such as cardiomyocyte death, cardiac fibrosis, and vascular dysfunction. Letter grading.

**110. How Cancer Co-opts Normal Physiology.** (4) Lecture, three hours. Requisites: courses 111A, 111B. Students gain understanding of how cancer-causing mutations co-opt normal physiological processes to promote disease progression. Covers homeostatic challenges induced by cancer and cancer therapies. Heavy focus on how animal models are designed and used to study human cancer. Topics include genetic engineering and preclinical analysis of transgenic mouse models of lung cancer, melanoma, and breast cancer. Classes are mixture of lecture and discussion focused on relevant classical and current literature. Letter grading.

**111A-111B. Foundations in Physiological Science.** (6-6) Lecture, four hours; discussion, two hours. Letter grading. **111A.** Requisites: course 107, Chemistry 14C or 30A, Life Sciences 1, 2, 3, 4, 23L, Physics 1B or 5C or 6B. Students must receive grade of C or better to proceed to next course in series. Introduction to principles of muscular and neural physiology, including factors controlling membrane excitability, neuronal circuits, sensorimotor regulation, special senses, cortical functions, and neuronal plasticity. **111B.** Requisites: course 111A, Chemistry 14D or 30B. Students must receive grade of C or better to proceed to next course in series. Introduction to principles of systems physiology, including endocrinology, transport physiology, and cardiovascular and pulmonary physiology.

**111L. Physiological Science Laboratory.** (3) Laboratory, four hours. Requisites: courses 111A and 111B, with grades of C- or better. Required of Physiological Science majors. Designed to illustrate physiological principles studied in courses 111A, 111B. Letter grading.

**120. Kidney: Understanding It from Development to Disease to Therapy.** (4) Lecture, three hours. Enforced requisites: courses 111A, 111B. Review of knowledge of basic renal function, with emphasis on broad range of renal diseases and their molecular mechanisms. Introduction to research methods typically employed in studies of kidney and exploration of state-of-art research on kidney repair and regeneration. Letter grading.

**121. Disease Mechanisms and Therapies.** (5) Lecture, three hours; discussion, one hour. Requisites: Chemistry 153A, and Life Sciences 2, 3, and 4 or 7A, 7B, and 7C. Designed for junior/senior Biochemistry and life sciences majors. Use of disease mechanisms as pedagogical tools to develop higher-order knowledge of basic scientific concepts. Integration of concepts from genetics, molecular and cell biology, physiology, and biochemistry to create molecular solutions to problem of inherited neuromuscular disease. Letter grading.

**122. Biomedical Technology and Physiology.** (4) Lecture, four hours. Requisites: courses 111A, 111B, Life Sciences 2 or 7C, Physics 1A, 1B, and 1C, or 5A, 5B, and 5C, or 6A, 6B, and 6C. Developments in biotechnology and their impact on diagnosis and treatment of disease, basic engineering principles, and designs that lend themselves to deciphering physiological states, and application of new technologies in clinical practice and biomedical research. Letter grading.

**CM123. Neurobiology of Sleep.** (4) (Same as Neuroscience CM123.) Lecture, three hours; discussion, one hour. Requisites: courses M101A and M101B or 111A and 111B or consent of instructor. Detailed look into science of sleep. Cellular and molecular mechanisms of falling asleep, many discrete brain structures involved in control of sleep wakefulness, and homeostatic regulation of sleep. How our sleep needs shaped by our evolutionary history, age, and gender. Latest insights into question of function of sleep, critical role sleep plays in memory formation and, close association between sleep and metabolism. Sleep disorders are considered as they provide insights into mechanisms underlying sleep. For background on science of sleep and circadian rhythms, completion of course C126 is highly recommended. Concurrently scheduled with course CM223. Letter grading.

**124. Molecular Biology of Aging.** (4) Lecture, three hours. Requisites: Chemistry 153A, Life Sciences 1, 2, 3, 4, and 23L, or 7A, 7B, 7C, and 23L. Discoveries of new science of aging biology, with examination of aging as plastic trait modulated by genes and physiological processes. Discussion of how these findings integrate with both nutritional modulation of lifespan and complex and profound relationship between underlying aging process and diseases of aging. Topics include dietary restriction, mitochondria, insulin/IGF signaling, and link between tumor suppression and organismal aging. Letter grading.

**125. Molecular Systems Biology.** (5) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 2, 3, 4, and 23L, or 7A, 7B, 7C, and 23L. Quantitative description of molecular systems that underlie myriad phenotypes in living cells. Topics include various -omics fields and high-throughput technologies, network biology, and synthetic biology. Introductory lectures on molecular biology, emerging bioinformatic approaches, and systems modeling integrated with discussions of their applications in disease-related research. Review of recent literature to gain overall perspectives about new science of systems biology. Letter grading.

**C126. Biological Clocks.** (4) Lecture, three hours; discussion, one hour. Requisites: courses 111A and 111B, or M180A and M180B. Most organisms, including humans, exhibit daily rhythms in physiology and behavior. In many cases these rhythms are generated from within organisms and are called circadian rhythms. Biological basis of these daily rhythms or cir-

cadian oscillations. Exploration of molecular, cellular, and system-level organization of these timing systems. Temporal role of these variations in maintaining homeostatic mechanisms of body and impact on nervous system. Concurrently scheduled with course C226. Letter grading.

**C127. Neuroendocrinology of Reproduction. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 111B. Understanding of reproductive neuroendocrinology throughout mammalian lifespan, with emphasis as appropriate on human condition. Discussion of general concepts of endocrine feedback and feed-forward loops, sexual differentiation, and structure and function for components of hypothalamo-pituitary-gonadal axis. Exploration of sex differences in physiology and disease. Concurrently scheduled with course C227. Letter grading.

**128. Me, Myself, and Microbes: The Microbiome in Health and Disease. (5)** Lecture, four hours; discussion, 90 minutes. Requisites: course 107 or Chemistry 153A, Life Sciences 2 and 3, or 7A, 7B, and 7C. Exploration of host-microbiome interactions in health and disease, drawing upon basic properties for microbial communities, intersections with immunology, metabolism, and neurobiology. Letter grading.

**C130. Sex Differences in Physiology and Disease. (4)** Lecture, three hours. Requisites: course 111B, Life Sciences 7A, 7B, 7C. Investigation of biological origins of sex differences in physiology (mostly vertebrate), and susceptibility to disease, including history of development of concepts to define sex, and interface between biological factors and effects of gendered environments. Topics include evolution of sex chromosomes, molecular and environmental determination of gonadal type, dosage compensation, gonadal steroid hormone effects on tissues, physiology of reproduction as it applies to sex differences, interaction of genetic and environmental factors in differentiation of two sexes, defining sex and gender, gendered environments and their influence on physiology, and politics of financial support for research of sex and gender differences in disease. Concurrently scheduled with course C230. Letter grading.

**M135. Dynamical Systems Modeling of Physiological Processes. (5)** (Same as Neuroscience M135.) Lecture, four hours; laboratory, two hours. Examination of art of making and evaluating dynamical models of physiological systems and of dynamical principles inherent in physiological systems. Letter grading.

**136. Pathophysiology of Cardiovascular Diseases. (5)** Lecture, four hours. Requisite: course 111B. Exploration of function of cardiovascular system and how cardiovascular disease develops during the lifespan. Emphasis on molecular and cellular mechanisms that mediate chronic diseases such as atherosclerosis, hypertension, diabetes, obesity, and metabolic syndrome. Includes current clinical interventions for treatment and prevention of cardiovascular disease emphasizing lifestyle modifications. Letter grading.

**138. Neuromuscular Physiology and Adaptation. (4)** Requisites: course 111B, Chemistry 153A. Cellular responses to acute and chronic exercise and environmental states of neuromuscular system.

**140. Hormones and Behavior in Humans and Other Animals. (4)** (Formerly numbered M140.) Lecture, three hours; discussion, one hour. Examination of hormones, and physiology and genetics involved in hormonal processes and function. Interactions among hormonal levels, environmental stimuli, and behavior. Sexual behavior, pregnancy, and lactation, parental behavior, development and emigration, stress, social behavior, dominance relationships, aggression, chemical communication, and reproductive suppression. Critique of primary literature on behavioral endocrinology about humans and other species. Consideration of spectrum of noninvasive to highly invasive endocrine sampling methods, and which types of questions can be answered in laboratory and field, as well as ethics of hormonal studies and their implications for humans and other animals. Letter grading.

**C144. Neural Control of Physiological Systems. (4)** Lecture, four hours. Requisite: course 111B or M180B. Role of central nervous system in control of respiration, circulation, sexual function, and bladder control.

Material for each section to be developed by combination of lecture and open discussion. Concurrently scheduled with course C244. Letter grading.

**M145. Neural Mechanisms Controlling Movement. (5)** (Same as Neuroscience M145.) Lecture, four hours. Requisite: course 111A or M180A or Neuroscience M101A. Examination of central nervous system organization required for production of complex movements such as locomotion, mastication, and swallowing. Letter grading.

**146. Principles of Nervous System Development. (5)** Lecture, three hours; discussion, two hours. Requisites: courses 107 (or Neuroscience 102) and 111A (or M180A). Examination of construction of vertebrate nervous system as series of integrated steps beginning with several embryonic cells and culminating as complex highly ordered system. Topics include neuroulation, regionalization, neurogenesis, migration, axonal outgrowth, and synapse formation. Letter grading.

**147. Neurobiology of Learning and Memory. (5)** Lecture, four hours; discussion, one hour. Requisite: course 111A or M180A. Changes in central nervous system that accompany learning, with emphasis on cellular mechanisms.

**148. Physiological Regulation of Metabolism and Nutrient Sensing. (4)** Lecture, two and one half hours; discussion, two hours. Requisite: course 111B. Study of energy metabolism and processing of macronutrients like carbohydrates, lipids, and proteins in mammals. Students gain tools and knowledge for synthesizing new information from advances in nutrition research to add to basic understanding of macronutrient metabolism. Use of clinical case studies to understand how human mutations in metabolic pathways lead to metabolic disorders. Discussion of diabetes, atherosclerosis, glycogen storage disease, inborn errors of metabolism, mitochondrial disorders, and lysosomal storage diseases. Study of how cells sense nutrients and adapt metabolism to unique needs of cells—for example, how cells respond to excess cholesterol. Discussion of mechanisms involved in import, export, and synthesis of nutrients. Use of primary literature to analyze primary research related to topics covered in lectures. Letter grading.

**149. Systems Biology and Mechanisms of Major Cardiometabolic Diseases. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 7A, 7B, 7C. Strongly recommended: Chemistry 153A. Designed for juniors/seniors. Integration of principles gained through basic science curriculum with modern systems biology concepts, approaches, and presently understood mechanisms of selected human cardiovascular disease, diabetes, and obesity. Letter grading.

**C150. Musculoskeletal Mechanics. (5)** Lecture, three hours. Requisite: course 111B. Introduction to biomechanical analysis of human musculoskeletal system. Examination of cinematographic, force platform, and digital computer techniques to characterize and evaluate kinematic and kinetic components of movement. Topics include biostatistics, biodynamics, and modeling. Concurrently scheduled with course C250B. Letter grading.

**C152. Musculoskeletal Anatomy, Physiology, and Biomechanics. (5)** Lecture, three hours. Requisite: course 111A. Anatomical, physiological, and mechanical characteristics of cartilaginous, fibrous, and bony tissues examined in normal and abnormal stress situations. Connective tissue growth processes, normal physiology, and repair mechanisms analyzed in conjunction with musculoskeletal injuries and effects of exercise. Concurrently scheduled with course C252.

**153. Dissection Anatomy. (5)** Lecture, two hours; laboratory, six hours. Requisite: course 107. Prior to first meeting, students must complete Bloodborne Pathogens training course through UCLA Environment, Health and Safety. Study and dissection of upper and lower extremities of human cadavers; dissection of thorax and abdomen limited to musculature and neurovascular supply. Letter grading.

**154. Cellular Communication and Regulation of Physiological Processes. (4)** Lecture, three hours. Limited to juniors/seniors. Signal transduction concepts, with focus on role of receptors, G proteins, and

intracellular messengers such as cyclic AMP and calcium. Integration of these concepts with variety of physiological processes, including stimulus-secretion coupling, vascular smooth muscle contraction, and role of growth factors in cell proliferation. Contemporary scientific research articles used as basis for material presented. Students required to present journal article for discussion. Letter grading.

**155. Development and Structure of Musculoskeletal System. (4)** Requisite: course 111B. Development, histology, cell biology, and biochemistry of musculoskeletal soft tissues. Integration of knowledge of muscle and connective tissue structure and function on each of these levels to understand organization and physiological behavior of the intact system.

**156. Molecular Mechanisms and Therapies for Muscular Dystrophy. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: course 111A (may be taken concurrently), Life Sciences 4 with grade of B or better. Causes and pathogenesis of Duchenne muscular dystrophy and some fundamental scientific findings using original scientific research. Exploration of therapies aimed at individual stages of pathogenetic disease as method to develop critical expert-like thinking skills. Lectures based on experiments from primary scientific literature, and students expected to understand genetic and phenotypic animal models of muscular dystrophy, to design experiments, and to predict outcomes from research data. Letter grading.

**165. Comparative Animal Physiology. (5)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 1, 2, 3, and 23L, or 7A, 7B, 7C, and 23L. Physiological response and function at molecular, cellular, system, and whole organism levels of variety of animals to range of environmental conditions. Major topics include neural and muscular structure and function, hormones, gas exchange, energetics, and thermoregulation. Examination of wide variety of vertebrates and invertebrates to understand how animals solve physiological challenges presented by physical environment. Letter grading.

**166. Animal Physiology. (6)** Lecture, three hours; laboratory, five hours. Requisites: Chemistry 14B and 14BL, or 20B and 30AL, 153A, Life Sciences 7A, 7B, 7C, Physics 1C and 4BL, or 5C. Not open for credit to students with credit for Ecology and Evolutionary Biology 170 or to Physiological Science majors. Introduction to physiological principles, with emphasis on organ systems and intact organisms. Letter grading.

**167. Physiology of Nutrition. (4)** Lecture, four hours. Enforced requisites: Chemistry 14A, 14B, 14C, and 14D, or 20A, 20B, 30A, and 30B. Limited to Physiological Science majors and Food Studies minors. Topics include physiological adaptation to starvation and physiological responses to oxidants/antioxidants, vitamins, minerals, photochemicals, and their relationship to common chronic diseases and physiology of fuel utilization during aerobic and anaerobic exercise. Letter grading.

**M171. Variable Topics Research Seminars: Contemporary Biology. (2)** (Same as Neurobiology M171.) Seminar, two hours. Limited to undergraduate fellows in Integrated and Interdisciplinary Undergraduate Research Program. Presentations of scientific data from primary research articles and from students' own research. May be repeated for credit. P/NP grading.

**173. Anatomy and Physiology of Sense Organs. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 111A, or M180A and M180B, or Molecular, Cell, and Developmental Biology M175A and M175B. Structure and function of sense organs. Adoption of quantitative and comparative approach to provide insight into evolution of sense organs in both invertebrates and vertebrates. Letter grading.

**174. Cell Biophysics in Physiology and Disease. (5)** Lecture, three hours; discussion, two hours. Requisites: Chemistry 153A, Life Sciences 2, 3, 4, and 23L, or 7A, 7B, 7C, and 23L, Physics 5A, 5B, and 5C, or 6A, 6B, and 6C. Search for information in biological research has traditionally focused on genes and biochemical pathways. While physical aspects of cell biology are critical in physiology and disease, they have received so much less attention in research. For example, mechanical properties of cells determine how physical forces alter gene expression and can signal

transformation in physiological state of cells, such as in malignant transformation. Exploration of cell biophysics in health and disease from basic physical principles that underlie structure and organization of cytoskeleton to role of cell deformability in diseases such as cancer. Use of articles from primary literature regarding current research. Letter grading.

**175. Why Fido Can't Speak: Biological Evolution of Language.** (5) Lecture, three hours; discussion, one hour. Requisite: course 111A or Neuroscience M101A. *Homo sapiens* are only species currently on planet to possess language. Exploration of whether other species possess potential building blocks for language. Topics range from examination of how bees and ants signal about food sources to whether structured songs of birds, whales, and monkeys contain compositional meaning. Topics intersect with those in fields of anthropology, biopsychology, linguistics, molecular genetics, neuroscience, and physiology. Letter grading.

**M176. Auditory Neuroscience of Speech Perception and Vocal Communication.** (4) (Same as Neuroscience M176.) Lecture, two and one half hours; discussion, 90 minutes. Requisite: course 107 or Neuroscience M101A. Interdisciplinary approach to understanding how humans and other animals communicate emotion and meaning using sound. Weekly research topics in disciplines of systems neuroscience, cognitive neuroscience, psychophysics, and psycholinguistics. Emphasis on fundamental principles in neurophysiology, neuroanatomy, neuroimaging, psychology, and neurology. Letter grading.

**177. Neuroethology.** (5) Lecture, four hours; discussion, two hours. Requisite: course 111A or M180A. Physical properties of animal signals and physiological mechanisms underlying their generation. Topics include classical neuroethological models: acoustic and vibration communication in vertebrates, sound localization in owls, electrosensing and electrocommunication in electric fish, and neurobiology of birdsong. Letter grading.

**M178. Quantitative Regulatory Biology and Signal Transduction.** (4) (Formerly numbered 178.) (Same as Computational and Systems Biology M178 and Microbiology M178.) Lecture, three hours; laboratory, one hour. Requisites: Life Sciences 7A, 7B, 7C, 30A, 30B. Introduction to key biological regulatory circuit motifs and systems biology concepts that are critical to understanding how cellular responses are controlled. Letter grading.

**M180A. Neuroscience: From Molecules to Mind—Cellular and Systems Neuroscience.** (5) (Same as Molecular, Cell, and Developmental Biology M175A, Neuroscience M101A, and Psychology M117A.) Lecture, four hours; discussion, 90 minutes. Requisites: Chemistry 14C or 30A (14C may be taken concurrently), Life Sciences 7C, Physics 1B or 1BH or 5C or 6B. Students must receive grade of C– or better to proceed to next course in series. Cellular neurophysiology, membrane potential, action potentials, and synaptic transmission. Sensory systems and motor system; how assemblies of neurons process complex information and control movement. P/NP or letter grading.

**M180B. Neuroscience: From Molecules to Mind—Molecular and Developmental Neuroscience.** (5) (Same as Neuroscience M101B, Molecular, Cell, and Developmental Biology M175B, and Psychology M117B.) Lecture, four hours; discussion, 90 minutes. Requisites: course M180A (with grade of C– or better), Life Sciences 7C. Molecular biology of channels and receptors: focus on voltage dependent channels and neurotransmitter receptors. Molecular biology of supramolecular mechanisms: synaptic transmission, axonal transport, cytoskeleton, and muscle. Classical experiments and modern molecular approaches in developmental neurobiology. P/NP or letter grading.

**M180C. Neuroscience: From Molecules to Mind—Behavioral and Cognitive Neuroscience.** (5) (Same as Neuroscience M101C, Molecular, Cell, and Developmental Biology M175C, and Psychology M117C.) Lecture, four hours; discussion, 90 minutes. Requisite: course M180A with grade of C– or better. Neural mechanisms underlying motivation, learning, and cognition. P/NP or letter grading.

**187A. Seeing Brain in Action.** (2) Seminar, two hours. Enforced requisites: courses 111A and 111B (or Neuroscience M101A and M101B). Introduction to latest technical approaches and conceptual advances in one preeminent subfield of neuroscience—live functional imaging. Students provided with critiqued scientific presentation experience and complete one exercise in scientific writing and peer review. Letter grading.

**187B. From Cell to Circuit.** (2) Seminar, two hours. Enforced requisites: courses 111A and 111B (or Neuroscience M101A and M101B), 187A. Introduction to latest technical approaches and conceptual advances in one preeminent subfield of neuroscience—specification of neural circuits. Students provided with critiqued scientific presentation experience and complete one exercise in scientific writing and peer review. Letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Physiology.** (2) Seminar, two hours. Enforced corequisite: course 111A. Focused reading in single subdiscipline of physiology, with focus on critical analysis of primary research literature. Emphasis on understanding methods for research in physiology and interpretation of experimental results, and how they bear on concepts of physiology. Development of culminating paper. May be repeated for credit. Letter grading.

**191H. Honors Seminars: Current Topics in Physiology.** (4) Seminar, four hours. Requisites or corequisites: courses 198A, 198B. Limited to neuroscience and physiological science honors program students. Designed for juniors/seniors and required of departmental honors students. Presentation of primary paper from physiology literature. Reading and critical evaluation of current research literature. Presentation of student laboratory research hypothesis, approach, and results in form of oral and poster presentations. Letter grading.

**192. Practicum in Systems Anatomy for Undergraduate Assistants.** (3) Seminar, two hours; additional hours in laboratory setting, to be arranged. Requisite: course 107. Limited to juniors/seniors. Training and supervised practicum in systems anatomy for undergraduate assistants. Consult Undergraduate Office for

further information. May not be applied toward elective requirements and may not be repeated for credit. Departmental application required. P/NP or letter grading.

**192A. Introduction to Collaborative Learning Theory and Practice.** (1) Seminar, one hour. Preparation: at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. Training seminar for undergraduate students who are selected for learning assistant (LA) program. Exploration of current topics in pedagogy and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. P/NP or letter grading.

**192B. Methods and Application of Collaborative Learning Theory in Physical Sciences.** (2 to 4) Seminar, two hours; laboratory, six hours. Requisites: course (may be taken concurrently), and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated four times for credit. P/NP or letter grading.

**193. Journal Club Seminars: Physiological Science.** (1) Seminar, one hour. Limited to undergraduate students. Discussion of readings selected from current literature in field. May be repeated for credit. P/NP grading.

**194A. Research Group Seminars: Physiological Science.** (2) Seminar, two hours. Required of undergraduate students in research traineeships such as MARC and UC Leads programs. Discussion of research methods and current literature in field or of research of faculty members or students. May be repeated for credit. Letter grading.

**194B. Research Group Seminars: Physiological Science.** (1) Seminar, two hours. Corequisite: course 198A or 198B or 198C or 199. Limited to juniors/seniors. Involvement in weekly laboratory research group meetings to encourage student participation in research and to stimulate progress in specific research areas. Discussion of use of specific research methods and current literature in field or of research of faculty members or students. May be repeated for credit. P/NP grading.

**195. Field Studies in Physiological Science.** (4) Tutorial, one hour; fieldwork, eight hours. Limited to seniors. Supervised field studies in specific careers related to physiological science. May not be repeated for credit and may not be applied toward elective requirements for major. Individual contract with supervising faculty member required. P/NP grading.

**196. Research Apprenticeship in Physiological Science.** (2 to 4) Tutorial, three hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit; consult department. Individual contract required. P/NP grading.

**198A. Honors Research in Physiological Science.** (4) Tutorial, 12 hours. Requisites: courses 111A, 111B, 193 (193 may be taken concurrently). Limited to junior/senior physiological science honors program students. Directed independent research for departmental honors with faculty member, involving definition of research topic and extensive reading and research in field of proposed honors thesis. May be repeated for credit. Individual contract required. In Progress grading (credit to be given only on completion of course 198B).

**198B. Honors Research in Physiological Science.** (4) Tutorial, 12 hours. Requisites: courses 193 (may be taken concurrently), 198A. Limited to junior/senior physiological science honors program students. Continued reading and research that culminate in final honors thesis. May be repeated for credit. Individual contract required. Letter grading.



**198C. Advanced Studies for Honors Research in Physiological Science.** (4) Tutorial, 12 hours. Requirement: course 198B. Corequisite: course 193. Limited to junior/senior physiological science honors program students. Additional course to provide further research opportunities for departmental honors students. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Physiological Science.** (2 to 4) Tutorial, 12 hours. Requisites: courses 111A, 111B, 193 (193 may be taken concurrently). Limited to Physiological Science majors with advanced junior standing and 3.0 grade-point average in major, or seniors. Supervised individual research under guidance of faculty mentor. Culminating paper or project required. Course application must be submitted to undergraduate affairs chair during first week of classes. Eight units of course 199 may be applied toward elective requirements for major. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Advanced Experimental Statistics.** (4) Lecture, four hours; laboratory, one hour. Introduction to statistics with focus on computer simulation instead of formulas. Bootstrap and Monte Carlo methods used to analyze physiological data. S/U or letter grading.

**M202. Cellular Neurophysiology.** (4) (Same as Neurobiology M200F and Neuroscience M202.) Lecture, three hours; discussion, two hours. Requisites: courses 111A (or M180A or Physics 5C), 166. Advanced course in cellular physiology of neurons. Action and membrane potentials, channels and channel blockers, gates, ion pumps and neuronal homeostasis, synaptic receptors, drug-receptor interactions, transmitter release, modulation by second messengers, and sensory transduction. Letter grading.

**M210. Molecular and Cellular Mechanisms of Neural Integration.** (5) (Same as Neuroscience M230 and Physiology M210.) Lecture, four hours; discussion, one hour. Requisite: Neuroscience M202. Introduction to mechanisms of synaptic processing. Selected problems of current interest, including regulation and modulation of transmitter release, molecular biology and physiology of receptors, cellular basis of integration in sensory perception and learning, neural nets and oscillators, and molecular events in development and sexual differentiation. Letter grading.

**211. Exercise Cardiovascular Physiology.** (4) Attention to cardiovascular adaptations to acute exercise as well as adaptations associated with regular exercise training.

**215. Molecular and Cellular Foundations of Physiology.** (5) Lecture, three hours; discussion, two hours. Application of molecular and cellular approaches to systems level questions. Basic foundation for study of major physiological systems, with emphasis on levels of organization from molecular to macroscopic. Letter grading.

**CM223. Neurobiology of Sleep.** (4) (Same as Neuroscience CM223.) Lecture, three hours; discussion, one hour. Detailed look into science of sleep. Cellular and molecular mechanisms of falling asleep, many discrete brain structures involved in control of sleep wakefulness, and homeostatic regulation of sleep. How our sleep needs shaped by our evolutionary history, age, and gender. Latest insights into question of function of sleep, critical role sleep plays in memory formation and, close association between sleep and metabolism. Sleep disorders are considered as they provide insights into mechanisms underlying sleep. For background on science of sleep and circadian rhythms, completion of course C126 is highly recommended. Concurrently scheduled with course CM123. Letter grading.

**C226. Biological Clocks.** (4) Lecture, three hours; discussion, one hour. Requisites: courses 111A and 111B, or M180A and M180B. Most organisms, including humans, exhibit daily rhythms in physiology and behavior. In many cases these rhythms are generated from within organisms and are called circadian

rhythms. Biological basis of these daily rhythms or circadian oscillations. Exploration of molecular, cellular, and system-level organization of these timing systems. Temporal role of these variations in maintaining homeostatic mechanisms of body and impact on nervous system. Concurrently scheduled with course C126. Letter grading.

**C227. Neuroendocrinology of Reproduction.** (4) (Formerly numbered CM227.) Lecture, three hours; discussion, one hour. Enforced requisite: course 111B. Understanding of reproductive neuroendocrinology throughout mammalian lifespan, with emphasis as appropriate on human condition. Discussion of general concepts of endocrine feedback and feed-forward loops, sexual differentiation, and structure and function for components of hypothalamo-pituitary gonadal axis. Exploration of sex differences in physiology and disease. Concurrently scheduled with course C127. Letter grading.

**C230. Sex Differences in Physiology and Disease.** (4) Lecture, three hours. Requisites: course 111B, Life Sciences 7A, 7B, 7C. Investigation of biological origins of sex differences in physiology (mostly vertebrate), and susceptibility to disease, including history of development of concepts to define sex, and interface between biological factors and effects of gendered environments. Topics include evolution of sex chromosomes, molecular and environmental determination of gonadal type, dosage compensation, gonadal steroid hormone effects on tissues, physiology of reproduction as it applies to sex differences, interaction of genetic and environmental factors in differentiation of two sexes, defining sex and gender, gendered environments and their influence on physiology, and politics of financial support for research of sex and gender differences in disease. Concurrently scheduled with course C130. Letter grading.

**235. Advanced Dynamical Systems Modeling of Physiological Processes.** (5) Lecture, four hours; laboratory, two hours. Examination of art of making and evaluating dynamical models of physiological systems and of dynamical principles inherent in physiological systems. Letter grading.

**241. Neural Plasticity and Repair.** (4) Lecture, four hours. Preparation: basic neuroscience background. Progress in basic and clinical neuroscience provides new insight to understand mechanisms of cell repair and strategies to promote neural healing. Focus on physiological, molecular, and anatomical basis governing repair processes in brain and spinal cord and their clinical implications. Letter grading.

**C244. Neural Control of Physiological Systems.** (4) Lecture, four hours. Requisite: course 111B or M180B. Role of central nervous system in control of respiration, circulation, sexual function, and bladder control. Material for each section to be developed by combination of lecture and open discussion. Concurrently scheduled with course C144. Letter grading.

**245. Neural Mechanisms Controlling Movement.** (5) Lecture, four hours. Requisite: course 111A or M180A or Neuroscience M101A. Examination of central nervous system organization required for production of complex movements such as locomotion, mastication, and swallowing. Letter grading.

**250A. Muscle Dynamics.** (4) Lecture, four hours. Integrated study of electrical and dynamic parameters of muscle-action, including topics in length-tension and force-velocity interrelationships; critical analysis of electromyographic and digital computer techniques. Letter grading.

**C250B. Musculoskeletal Mechanics.** (5) Lecture, three hours. Requisites: course 107, Physics 6A. Introduction to biomechanical analysis of human musculoskeletal system. Examination of cinematographic, force platform, and digital computer techniques to characterize and evaluate kinematic and kinetic components of movement. Topics include biostatistics, biodynamics, and modeling. Concurrently scheduled with course C150. Letter grading.

**C252. Musculoskeletal Anatomy, Physiology, and Biomechanics.** (5) Lecture, three hours. Requisite: course 111A. Anatomical, physiological, and mechanical characteristics of cartilaginous, fibrous, and bony tissues examined in normal and abnormal stress situa-

tions. Connective tissue growth processes, normal physiology, and repair mechanisms analyzed in conjunction with musculoskeletal injuries and effects of exercise. Concurrently scheduled with course C152.

**M255. Seminar: Neural and Behavioral Endocrinology.** (2) (Same as Neurobiology M255 and Psychology M294.) Seminar, one hour; discussion, one hour. Topics include hormonal biochemistry and pharmacology. Hypothalamic/hypophyseal interactions, both hormonal and neural. Structure and function of hypothalamus. Hormonal control of reproductive and other behaviors. Sexual differentiation of brain and behavior. Stress: hormonal, behavioral, and neural aspects. Aging of reproductive behaviors and function. Letter grading.

**260. Neuromuscular Factors in Movement Regulation.** (4) Lecture, four hours. Requisite: course 138. Interaction of neural and muscular factors in regulation of muscle fiber properties and importance of these properties in neural strategies of movement regulation. S/U or letter grading.

**263. Neuronal Mechanisms Controlling Rhythmical Movements.** (4) Lecture, four hours. Requisite: course M145. Advanced topics on brainstem mechanisms responsible for controlling cyclic and stereotypic movements such as mastication and locomotion. Emphasis on cellular neurophysiology and interaction between neuronal networks. Introduction to primary literature and techniques used in these areas. Students expected to critically evaluate data and conclusions drawn. S/U or letter grading.

**270A-270B. Modern Concepts in Physiology.** (4-4) Lecture, two hours; discussion, two hours. Study and evaluation of primary research literature. Study of foundations of modern techniques in physiology research, analysis of research design. Letter grading.

**270A.** Highly recommended requisite or corequisite: course 111A. Foundation for experimental study of principles of muscular and neural physiology and cellular and systems neuroscience, including factors controlling membrane excitability, neuronal circuits, sensorimotor regulation, special senses, cortical functions, and neural plasticity. **270B.** Highly recommended requisite or corequisite: course 111B. Foundation for experimental study of principles of systems physiology, including endocrinology, transport physiology, and neural, cardiovascular, and pulmonary physiology.

**M272. Neuroimaging and Brain Mapping.** (4) (Same as Neuroscience CM272 and Psychology M213.) Lecture, three hours. Requisites: course M202, Neuroscience M201. Theory, methods, applications, assumptions, and limitations of neuroimaging. Techniques, biological questions, and results. Brain structure, brain function, and their relationship discussed with regard to imaging. Letter grading.

**289A-289B. Honing Your Skills as Researcher in Integrative Biology and Physiology.** (2-3) Seminar, one hour. Limited to graduate students in Physiological Science master's program. Scientific method and analytical tools of research in physiology and biology; evaluation of research literature in physiology; scientific communication—written and oral presentations; scientific ethics; and professional development—writing curriculum vitae (CV) and cover letter. Letter grading. **289B.** Requisite: course 289A.

**M290. Seminar: Comparative Physiology.** (2) (Same as Ecology and Evolutionary Biology M290.) Seminar, two and one half hours. Discussion of specific topics in comparative physiology of animals. Topics vary from year to year, with emphasis on systems physiology, neuroethology, or behavioral physiology. S/U or letter grading.

**291A-291B-291C. Seminars: Cardiovascular Function and Adaptation.** (2 to 4 each) Seminar, two to four hours. Selected topics on cardiovascular function and adaptation. Students required to present two-hour seminar. Letter grading.

**292. Evolution and Development of Auditory System.** (2 or 4) Seminar, two hours. Discussion of specific topics related to evolution, embryology, morphogenesis, cytodifferentiation, and onset of function of auditory system, with special attention to centrifugal pathways. Emphasis on primary literature sources as

well as current methodological approaches. Two-hour seminar presentation required for 2 units; seminar paper and two-hour seminar presentation required for 4 units. S/U or letter grading.

**293A-293B-293C. Seminars: Musculoskeletal Function and Adaptation. (2 to 4 each)** Seminar, one hour. Requisites: courses 138, 260. Selected topics on muscular determinants of movement, metabolic aspects of exercise, and mechanics of connective tissue. Students required to present two-hour seminar. S/U or letter grading.

**294. Recent Advances in Neurophysiology. (1)** Seminar, one hour. Requisite: Life Sciences 2 or undergraduate degree in science. Critical examination and discussion of recent data and publications that focus on synaptic function. Student presentations, readings, and participation in discussions required. S/U grading.

**295A-295B-295C. Seminars: Cellular Neuroscience. (2 to 4 each)** Seminar, two to four hours. Requisite: course M202. Selected topics in sensory transduction, cellular integration, synaptic processing, central nervous system function, and learning. Students required to present two-hour seminar. S/U or letter grading.

**296. Research Seminar: Physiological Science. (2)** Review of literature, discussion of original research, and analysis of current topics in physiological science. May not be applied toward MS or PhD course requirements. May be repeated for credit. S/U grading.

**297. Seminar: Muscle Cell Biology. (2 to 4)** Seminar, two hours. Selected topics in muscle cell biology. Students required to present two-hour seminar. May be repeated for credit.

**298. Seminar: Nervous System Development. (1 to 2)** Seminar, two hours. Selected topics in developmental neurobiology, such as neuronal migration, axonal guidance, gene expression, and synaptogenesis. Weekly primary literature student presentations. One-hour seminar presentation on assigned weekly reading required of all students; students enrolled for 2 units must also complete written analysis of additional primary literature papers. May be repeated for credit. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. In-Service Practicum for Teaching Assistants in Physiological Science. (2)** Seminar, to be arranged. Required of all teaching assistants. Supervised practicum in teaching laboratory courses in physiological science; material preparation and use of teaching aids. May not be applied toward degree requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Individual Studies for Graduate Students. (2 to 8)** Tutorial, to be arranged. To enroll for letter grade, petition signed by faculty sponsor, graduate adviser, and graduate affairs committee chair must be submitted prior to end of second week of class. Eight units may be applied toward degree requirements for MS or PhD degree, provided that students enroll in two different 4-unit 596 courses in different laboratories under supervision of different mentors. Term paper required for letter grading. S/U or letter grading.

**597. Preparation for MS Comprehensive Examination or PhD Qualifying Examinations. (2 to 16)** Tutorial, to be arranged with faculty member serving as student's comprehensive examination chair or PhD committee chair. May not be applied toward MS or PhD course requirements. May be repeated as necessary. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 16)** Tutorial, to be arranged with faculty member serving as student's thesis committee chair. May not be applied toward MS course requirements. May be repeated as necessary. S/U grading.

**599. Research for and/or Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. May not be applied toward PhD course requirements. May be repeated as necessary. S/U grading.

## INTERNATIONAL AND AREA STUDIES

*Interdepartmental Program  
College of Letters and Science*

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**International and Area Studies**

310-206-6571

**Program e-mail**

Adam D. Moore, PhD, *Chair*

### Faculty Committee

Robin L.H. Derby, PhD (*History*)

Nile S. Green, PhD (*History*)

Patrick C. Heuveline, PhD (*Sociology*)

Jennifer J. Jung-Kim, PhD (*Asian Languages and Cultures*)

Namhee Lee, PhD (*Asian Languages and Cultures*)

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Helen M. Rees, PhD (*Ethnomusicology*)

Bonnie Taub, PhD (*Anthropology, Community Health Sciences*)

Kevin B. Terraciano, PhD (*History*)

Michael F. Thies, PhD (*Political Science*)

### Overview

The International Institute offers a variety of area studies majors and minors through the International and Area Studies Interdepartmental Program (IDP). The overarching goal of each of these programs is to address the need for students to have a broad understanding of the international nature of the world and guide them through a course of study that allows them to apply that knowledge to a particular region of interest. The majors are structured so that area-specific content proceeds in tandem with instruction in the humanities and social sciences disciplines that provide the tools for analyzing the cultures, social structures, politics, and histories of the regional areas.

Emphasizing the contemporary world since 1750, the majors establish a common conceptual and thematic basis for study of regional areas. Students take a common core course that illuminates the international character of the contemporary world and introduces a set of contemporary issues and challenges that cross borders and regions. Thematic and conceptual courses equip students with a variety of disciplinary tools they can use to study a particular area or region. Studies culminate in a capstone seminar.

### Undergraduate Study

Students considering a major or minor in the interdepartmental program should consult with

the academic counselor as soon as possible in their UCLA career, but in no case later than the point at which they are about to begin taking upper-division courses. Students should select courses to fulfill major or minor requirements in consultation with the academic counselor.

## Undergraduate Majors

### African and Middle Eastern Studies BA

The African and Middle Eastern Studies major allows students to analyze the area or a subregion (e.g., Middle east, North Africa, Arab states, sub-Saharan Africa) from an interdisciplinary and modern perspective. The major seeks to ground students in broad international issues that they can then use to focus on particular concerns of that part of the world.

### Study Abroad

African and Middle Eastern Studies majors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the [UCLA International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

### Capstone Major

The African and Middle Eastern Studies major is a designated capstone major. Students must complete a capstone seminar or study-abroad program in which they engage in an in-depth analysis of a specific region or a thematic subject that spans regions. Through conceiving and executing a project, students demonstrate their working knowledge of scholarly discourse relative to a specialized topic. Student research, analytic, and writing skills are exhibited through their capstone work, along with their collaborative and oral communication skills.

### Learning Outcomes

The African and Middle Eastern Studies major has the following learning outcomes:

- In-depth analysis of a specific region or a thematic subject that spans regions
- Demonstrated critical understanding of issues relevant to a specific region or theme
- Demonstrated skills, including research, analysis, and writing
- Identification and analysis of appropriate sources, material evidence, and other forms of primary documents
- Demonstrated proficiency at collaborative engagement with peers through constructive

feedback on written drafts and oral presentations

- Demonstrated proficiency at using peer feedback to enhance student's own work
- Effective communication of complex ideas in a seminar setting
- Demonstrated effective oral and written communication of research findings
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

## Entry to the Major

### Admission

To be eligible to declare the African and Middle Eastern Studies major, students must have completed all nonlanguage preparation for the major courses and the foreign language courses through at least level 3 (elementary level). Any remaining language courses may be completed after students have been accepted to the major.

### Pre-major

Incoming first-year and transfer students may be admitted as African and Middle Eastern Studies pre-majors on acceptance to UCLA. Pre-major students must apply for major standing at the end of fall quarter of their junior year; they are not automatically accepted into the major.

### Transfer Students

Transfer applicants to the African and Middle Eastern Studies pre-major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two courses from sociocultural anthropology, cultural geography, contemporary world history, and world literature and two courses from comparative politics, economic geography, macroeconomics, microeconomics, and introductory sociology. Transfer students must apply for the major by the end of fall quarter of their junior year.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Policies

Each preparation for the major course must be taken for a letter grade, and students must have a UC grade-point average of 2.0 or better in those courses. In addition, students must have earned a grade of C or better in International and Area Studies 1.

## Requirements

### Preparation for the Major

*Required:* (1) International and Area Studies 1, (2) one *area studies* course from Art History 28, History 9D, 10B, 97F, 97J, Middle Eastern Studies M50CW, or Portuguese 40A, (3) two *international politics and markets* courses from Economics 1, 2, Geography 4, 6, Political Science 50 (or 50R), Sociology 1, (4) two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or

2DW or 4DW), Ethnomusicology 5, M25, Geography 3, History 2B, 22, World Arts and Cultures 20, 33, and (5) one area-related foreign language sequence through the intermediate level (e.g., Arabic 102C, Armenian 102C, 105C, Hebrew 102C, Iranian 102C, Turkic Languages 102C, 112C, 116C). The language requirement can also be fulfilled in part or in total by taking a placement examination given through the appropriate language department.

### The Major

The major consists of International and Area Studies 191 (capstone seminar) and 11 upper-division courses divided among area studies and international themes courses.

*Area Studies:* (1) *Three humanities and arts group 1* courses from Arabic M110, 120, C141, M151, Armenian 150A, C151, C152, C153, 160A, 160B, Art History C120, C145A, C145B, Comparative Literature M148, M162, 169, Ethnomusicology 136A, C136B, 161E (2 units), 161L (2 units), 161N (2 units), French 121, 142, Hebrew M113, C140, Iranian 141, 142, 150A, 150B, Islamic Studies 151, Jewish Studies M142, M144, 151B, 175, Turkic Languages 160, 165, 180; (2) *three social sciences group 1* courses from Anthropology 135, 166P, M166Q, 167, Geography 138, History 105C, 107C, 109B, 111C, 164B through 164E, 166B, 167A, 167B, 167C, 168B, M184D, Honors Collegium M157, Political Science 132A, 151A, 151B, 151C, 157, 165; and (3) one additional elective course selected from either item 1 or 2 above.

*International Themes:* (1) *Two international politics and markets* courses from Anthropology 143, Economics 111, 112, 121, 122, Environment 134, Geography M127, 148, 150, International Development Studies 130, Management 109, 127C, Political Science 120B, 122A, M122B, 123A, 124A, 125A, 126, 129, 134, 137A, 138B, 150, 166, M167C, 167D, 168, Sociology 182, 183, Urban Planning M165 and (2) *two international societies and cultures* courses from Anthropology 130, 140, 146, 147, Art History C160, Communication 179, Comparative Literature 100, Environment M133, Film and Television 112, Geography M131, 139C, 140, 141, 158, 161, History M186B, Honors Collegium M152, International Development Studies 110, Sociology 116, 151, 154, 191D, 191F, World Arts and Cultures CM130.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of three upper-division courses with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies electives as long as the distribution between humanities and arts and social sciences is maintained. They may be selected from either of the following lists: *humanities and arts group 2:* Ancient Near East 124, M130, 150B, C165, Arabic 130, 132, 150, Armenian 130, 131, C155, Art History M110A, M110B, 119A, French 160, Hebrew 130, 135, Iranian M110A, M110B, M110C, 120, 131, 140, Islamic Studies 130, Jewish Studies 140A, 140B, 143, M150A, 150B, M151A, M155, M182A, M182B, M182C, M184B, Turkic Languages 170, World Arts and Cultures C139 or *social sciences group 2:* Geography 135, His-

tory M103A, M103B, 105A, 105B, M106, 107A, 107D, 108A, 108B, 111A, 111B, 116A, 116B, 166A, 168A.

### Honors Program

The honors program is designed to offer highly motivated majors the opportunity to design and conduct their own independent research under the guidance of a faculty adviser and consists of a three-term directed-study series of courses—International and Area Studies 198A, 198B, 198C—culminating in an honors thesis.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade.

### The Major

To count as one 4-unit course, 2-unit courses must either be taken twice or two courses from the same category (if applicable) may be taken. Each course must be taken for a letter grade, with a minimum overall grade-point average of 2.0.

## Honors Program

### Admission

To enter the honors program, students must (1) have completed all preparation for the major requirements with a minimum 3.5 grade-point average in those courses, (2) have a 3.5 grade-point average in all upper-division coursework for the major, (3) obtain agreement from a faculty member to supervise their honors thesis, and (4) formally submit an application to the honors program. Application should normally be made during the junior year so as to best plan for completion of the honors thesis during the senior year. Contact the academic counselor for more details about the application, thesis requirements, and guidelines regarding the selection of a faculty thesis adviser.

### Requirements

Honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.5 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an honors thesis (approximately 35 to 50 pages) determined to be of honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Highest honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.75 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an exceptional honors thesis (approximately 35 to 50 pages) determined to be of highest honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Honors and highest honors are recorded on the final transcript and diploma after students successfully complete the program.



## Asian Studies BA

The Asian Studies major allows students to analyze the area or a subregion (e.g., Central Asia, East Asia, South Asia, Southeast Asia) from an interdisciplinary and modern perspective. The major seeks to ground students in broad international issues that they can then use to focus on particular concerns of that part of the world.

### Study Abroad

Asian Studies majors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

### Capstone Major

The African Studies major is a designated capstone major. Students must complete a capstone seminar or study-abroad program in which they engage in an in-depth analysis of a specific region or a thematic subject that spans regions. Through conceiving and executing a project, students demonstrate their working knowledge of scholarly discourse relative to a specialized topic. Student research, analytic, and writing skills are exhibited through their capstone work, along with their collaborative and oral communication skills.

### Learning Outcomes

The Asian Studies major has the following learning outcomes:

- In-depth analysis of a specific region or a thematic subject that spans regions
- Demonstrated critical understanding of issues relevant to a specific region or theme
- Demonstrated skills, including research, analysis, and writing
- Identification and analysis of appropriate sources, material evidence, and other forms of primary documents
- Demonstrated proficiency at collaborative engagement with peers through constructive feedback on written drafts and oral presentations
- Demonstrated proficiency at using peer feedback to enhance student's own work
- Effective communication of complex ideas in a seminar setting
- Demonstrated effective oral and written communication of research findings
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

## Entry to the Major

### Admission

To be eligible to declare the Asian Studies major, students must have completed all nonlanguage preparation for the major courses and the foreign language courses through at least level 3 (elementary level). Any remaining language courses may be completed after students have been accepted to the major.

### Pre-major

Incoming first-year and transfer students may be admitted as Asian Studies pre-majors on acceptance to UCLA. Pre-major students must apply for major standing at the end of fall quarter of their junior year; they are not automatically accepted into the major.

### Transfer Students

Transfer applicants to the Asian Studies pre-major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two courses from sociocultural anthropology, cultural geography, contemporary world history, and world literature and two courses from comparative politics, economic geography, macroeconomics, microeconomics, and introductory sociology. Transfer students must apply for the major by the end of fall quarter of their junior year.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Policies

Each preparation for the major course must be taken for a letter grade, and students must have a UC grade-point average of 2.0 or better in those courses. In addition, students must have earned a grade of C or better in International and Area Studies 1.

## Requirements

### Preparation for the Major

*Required:* (1) International and Area Studies 1, (2) one *area studies* course from Art History 29, 31, Asian 30, Chinese 40, 50 (or 50W), M60 (or M60W), 80, Clusters 25A, History 9A, 9C, 9E, 11B (or 11BH), 97G, 97M, 97N, International and Area Studies 31, 33, Japanese 50, 70, 75, 80, Korean 40W, 50, M60, 70, 80, South Asian M60, Southeast Asian M20, 50, 70, or Vietnamese 40, (3) two *international politics and markets* courses from Economics 1, 2, Geography 4, 6, Political Science 50 (or 50R), Sociology 1, (4) two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Ethnomusicology 5, M25, Geography 3, History 2B, 22, World Arts and Cultures 20, 33, and (5) one area-related foreign language sequence through the intermediate level (e.g., Chinese 6 or 6A, Filipino 6, Hindi-Urdu 100C, Indonesian 6, Japanese 6, Korean 6, Thai 6, Vietnamese 6). The language requirement can also be fulfilled in part or in total by taking a placement examination given through the appropriate language department.

## The Major

The major consists of International and Area Studies 191 (capstone seminar) and 11 upper-division courses divided among area studies and international themes courses.

*Area Studies:* (1) Three *humanities and arts group 1* courses from Art History C148D, C148E, C150B, C154C, 154D, Asian 151, 161, 162, Chinese C120, 124, 125, 130B, 131, 139, C144, C150A, C150B, 151, 152, 155, C156, CM160, 165, 174, 176, 180, 185, 191B, Comparative Literature M176, C178, Ethnomusicology 146, 147, C150, C156A, 156B, 157, C159, 160, 161B (2 units), Filipino 155, 170, Japanese 124, CM127, 130A, 130B, 130C, 151, 154, 155, M156, CM160, 161, 170, C182, 191B, Korean C105A, C105B, C105C, CM127, 148A, C151, 153, 154, 155, CM160, 172, C177, 179, 180C, 182, 183, 184B, 185, M186, 187, 191B, South Asian 155, Southeast Asian 130, 135, C140, C150, Theater 102A, Vietnamese CM155, 180B, M186; (2) three *social sciences group 1* courses from Anthropology M145T, 163P, 163Q, 163R, Asian American Studies 171A through 171E, 172C, Gender Studies M164A, M170C, M173B, Geography 175A, 175B, 176A, History 170B, 170D, 172C, M173C, 174C, 175A, 175C, 176B, 176C, Political Science 135, 158, 159A, 159B, 160, Sociology 181A, 181B; and (3) one additional elective course selected from either item 1 or 2 above.

*International Themes:* (1) Two *international politics and markets* courses from Anthropology 143, Economics 111, 112, 121, 122, Environment 134, Geography M127, 148, 150, International Development Studies 130, Management 109, 127C, Political Science 120B, 122A, M122B, 123A, 124A, 125A, 126, 129, 134, 137A, 138B, 150, 166, M167C, 167D, 168, Sociology 182, 183, Urban Planning M165 and (2) two *international societies and cultures* courses from Anthropology 130, 140, 146, 147, Art History C160, Communication 179, Comparative Literature 100, Environment M133, Film and Television 112, Geography M131, 139C, 140, 141, 158, 161, History M186B, Honors Collegium M152, International Development Studies 110, Sociology 116, 151, 154, 191D, 191F, World Arts and Cultures CM130.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of three upper-division courses with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies electives as long the distribution between humanities and arts and social sciences is maintained. They may be selected from either of the following lists: *humanities and arts group 2:* Art History C148A, C148B, C148C, 150A, 152A through C152D, 154A, 154B, 156, Chinese C175, M183, 186, 191A, Japanese 165, 172, 174, Korean C150, 165, 180A, 180B, 184A, 191A, South Asian CM160, or *social sciences group 2:* Anthropology 116P, 116Q, Asian American Studies 111, 113, 121, 122B, 130A, M130C, 131A, 131B, 131C, 132A, 133, 134, History 152, 169A, 170A, 172A, 172B, 174A, M174D, M174G, 176A.



## Honors Program

The honors program is designed to offer highly motivated majors the opportunity to design and conduct their own independent research under the guidance of a faculty adviser and consists of a three-term directed-study series of courses—International and Area Studies 198A, 198B, 198C—culminating in an honors thesis.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade.

### The Major

To count as one 4-unit course, 2-unit courses must either be taken twice or two courses from the same category (if applicable) may be taken. Each course must be taken for a letter grade, with a minimum overall grade-point average of 2.0.

## Honors Program

### Admission

To enter the honors program, students must (1) have completed all preparation for the major requirements with a minimum 3.5 grade-point average in those courses, (2) have a 3.5 grade-point average in all upper-division coursework for the major, (3) obtain agreement from a faculty member to supervise their honors thesis, and (4) formally submit an application to the honors program. Application should normally be made during the junior year so as to best plan for completion of the honors thesis during the senior year. Contact the academic counselor for more details about the application, thesis requirements, and guidelines regarding the selection of a faculty thesis adviser.

### Requirements

Honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.5 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an honors thesis (approximately 35 to 50 pages) determined to be of honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Highest honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.75 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an exceptional honors thesis (approximately 35 to 50 pages) determined to be of highest honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Honors and highest honors are recorded on the final transcript and diploma after students successfully complete the program.

## European Studies BA

The European Studies major allows students to analyze the area or a subregion (e.g., Central and Eastern Europe, Mediterranean Europe,

Scandinavia, Western Europe/European Union) from an interdisciplinary and modern perspective. The major seeks to ground students in broad international issues that they can then use to focus on particular concerns of that part of the world.

## Capstone Major

The European Studies major is a designated capstone major. Students must complete a capstone seminar or study-abroad program in which they engage in an in-depth analysis of a specific region or a thematic subject that spans regions. Through conceiving and executing a project, students demonstrate their working knowledge of scholarly discourse relative to a specialized topic. Student research, analytic, and writing skills are exhibited through their capstone work, along with their collaborative and oral communication skills.

## Study Abroad

European Studies majors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Learning Outcomes

The European Studies major has the following learning outcomes:

- In-depth analysis of a specific region or a thematic subject that spans regions
- Demonstrated critical understanding of issues relevant to a specific region or theme
- Demonstrated skills, including research, analysis, and writing
- Identification and analysis of appropriate sources, material evidence, and other forms of primary documents
- Demonstrated proficiency at collaborative engagement with peers through constructive feedback on written drafts and oral presentations
- Demonstrated proficiency at using peer feedback to enhance student's own work
- Effective communication of complex ideas in a seminar setting
- Demonstrated effective oral and written communication of research findings
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

## Entry to the Major

### Admission

To be eligible to declare the European Studies major, students must have completed all non-language preparation for the major courses and the foreign language courses through at least level 3 (elementary level). Any remaining language courses may be completed after students have been accepted to the major.

### Pre-major

Incoming first-year and transfer students may be admitted as European Studies pre-majors on acceptance to UCLA. Pre-major students must apply for major standing at the end of fall quarter of their junior year; they are not automatically accepted into the major.

### Transfer Students

Transfer applicants to the European Studies pre-major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two courses from sociocultural anthropology, cultural geography, contemporary world history, and world literature and two courses from comparative politics, economic geography, macroeconomics, microeconomics, and introductory sociology. Transfer students must apply for the major by the end of fall quarter of their junior year.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Policies

Each preparation for the major course must be taken for a letter grade, and students must have a UC grade-point average of 2.0 or better in those courses. In addition, students must have earned a grade of C or better in International and Area Studies 1.

## Requirements

### Preparation for the Major

*Required:* (1) International and Area Studies 1, (2) one *area studies* course from Central and East European Studies 91, Comparative Literature 1C, 2CW, 4CW, Dutch 10, English 88G, French 12, 14 (or 14W), 41, 60, German 50B, 59, 61A, History 1C (or 1CH), 97C, International and Area Studies 40, Italian 42B, 46, 50B, Portuguese 40A, Romanian 90, Russian 25 (or 25W), 30, 31, 32, 90B (or 90BW), Scandinavian 50 (or 50W), Slavic 90, Spanish 42, (3) two *international politics and markets* courses from Economics 1, 2, Geography 4, 6, Political Science 50 (or 50R), Sociology 1, (4) two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Ethnomusicology 5, M25, Geography 3, History 2B, 22, World Arts and Cultures 20, 33, and (5) one area-related foreign language sequence through the intermediate level (e.g., Czech 102C, Dutch 103C, French 6, German 6, Hungarian 102C, Italian 6, Polish 102C, Portuguese 3, Romanian 102C, Russian 6, Scandinavian 5, Serbian/Croatian 102C, Spanish 5, Ukrainian 102C, Yiddish 102C). The language requirement can also be fulfilled in part or in total by taking a placement examina-

tion given through the appropriate language department.

## The Major

The major consists of International and Area Studies 191 (capstone seminar) and 11 upper-division courses divided among area studies and international themes courses.

*Area Studies:* (1) Three *humanities and arts group 1* courses from Art History 127B, M127C, Central and East European Studies 125, C126, Comparative Literature C163, C164, Dutch 113, 131, English 115B, 164A, 164B, 164C, Ethnomusicology 133, Film and Television 106B, French 114C, 119, 120, 138, 139, 141, German 102, 103, 104, 110, 112, 173, 174, Italian 102C, 120, 121, 150, M158, Polish 152B, 152C, Russian 107B, 120, 121, 122, 125, 126, M127, 128, 130A, 130B, 130C, 131, M132, 140A through 140D, 150, Scandinavian C141A, 141C, C155, 156, 157, 161, C163A, C163B, C163C, 173A, C174A, 174B, C180, Yiddish 131A, 131B; (2) three *social sciences group 1* courses from Economics 181, Geography 173A, 174A, History 120A, 120B, 120C, 121D, 121E, 121F, 122F, 123B, 123C, 124B, 124C, 125B, 125C, 125D, 127B, 127C, 127D, 129B, 131A, 131B, 134B, 134C, 135C, 136B, 136C, 183A, 183B, Honors Collegium 173A, Political Science 127A, 128A, 128B, 153A, 156A; and (3) one additional elective course selected from either item 1 or 2 above.

*International Themes:* (1) Two *international politics and markets* courses from Anthropology 143, Economics 111, 112, 121, 122, Environment 134, Geography M127, 148, 150, International Development Studies 130, Management 109, 127C, Political Science 120B, 122A, M122B, 123A, 124A, 125A, 126, 129, 134, 137A, 138B, 150, 166, M167C, 167D, 168, Sociology 182, 183, Urban Planning M165 and (2) two *international societies and cultures* courses from Anthropology 130, 140, 146, 147, Art History C160, Communication 179, Comparative Literature 100, Environment M133, Film and Television 112, Geography M131, 139C, 140, 141, 158, 161, History M186B, Honors Collegium M152, International Development Studies 110, Sociology 116, 151, 154, 191D, 191F, World Arts and Cultures CM130.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of three upper-division courses with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies electives as long as the distribution between humanities and arts and social sciences is maintained. They may be selected from either of the following lists: *humanities and arts group 2:* French 114A, 114B, 115, 116, 117, 118, 169, German 170, Italian 102A, 102B, 103A, 103B, 110, 113, 114B, 116A, 116B, 140, Russian C124C, C124D, C124G, C124N, C124P, C124T, Scandinavian 142A, 143C, 154 or *social sciences group 2:* History 121A, 121B, 121C, 122A, 122B, 122C, 125A, 126, Political Science 111C.

## Honors Program

The honors program is designed to offer highly motivated majors the opportunity to design and conduct their own independent research under the guidance of a faculty adviser and consists of a three-term directed-study series of courses—International and Area Studies 198A, 198B, 198C—culminating in an honors thesis.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade.

### The Major

To count as one 4-unit course, 2-unit courses must either be taken twice or two courses from the same category (if applicable) may be taken. Each course must be taken for a letter grade, with a minimum overall grade-point average of 2.0.

## Honors Program

### Admission

To enter the honors program, students must (1) have completed all preparation for the major requirements with a minimum 3.5 grade-point average in those courses, (2) have a 3.5 grade-point average in all upper-division coursework for the major, (3) obtain agreement from a faculty member to supervise their honors thesis, and (4) formally submit an application to the honors program. Application should normally be made during the junior year so as to best plan for completion of the honors thesis during the senior year. Contact the academic counselor for more details about the application, thesis requirements, and guidelines regarding the selection of a faculty thesis adviser.

### Requirements

Honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.5 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an honors thesis (approximately 35 to 50 pages) determined to be of honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Highest honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.75 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an exceptional honors thesis (approximately 35 to 50 pages) determined to be of highest honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Honors and highest honors are recorded on the final transcript and diploma after students successfully complete the program.

## Latin American Studies BA

The Latin American Studies major allows students to analyze the area or a subregion (e.g., Amazonia, Caribbean, Central America, South

America, Southern Cone) from an interdisciplinary and modern perspective. The major seeks to ground students in broad international issues that they can then use to focus on particular concerns of that part of the world.

## Study Abroad

Latin American Studies majors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Capstone Major

The Latin American Studies major is a designated capstone major. Students must complete a capstone seminar or study-abroad program in which they engage in an in-depth analysis of a specific region or a thematic subject that spans regions. Through conceiving and executing a project, students demonstrate their working knowledge of scholarly discourse relative to a specialized topic. Student research, analytic, and writing skills are exhibited through their capstone work, along with their collaborative and oral communication skills.

## Learning Outcomes

The Latin American Studies major has the following learning outcomes:

- In-depth analysis of a specific region or a thematic subject that spans regions
- Demonstrated critical understanding of issues relevant to a specific region or theme
- Demonstrated skills, including research, analysis, and writing
- Identification and analysis of appropriate sources, material evidence, and other forms of primary documents
- Demonstrated proficiency at collaborative engagement with peers through constructive feedback on written drafts and oral presentations
- Demonstrated proficiency at using peer feedback to enhance student's own work
- Effective communication of complex ideas in a seminar setting
- Demonstrated effective oral and written communication of research findings
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic

## Entry to the Major

### Admission

To be eligible to declare the Latin American Studies major, students must have completed all nonlanguage preparation for the major courses and the foreign language courses through at least level 3 (elementary level). Any remaining language courses may be completed after students have been accepted to the major.

### Pre-major

Incoming first-year and transfer students may be admitted as Latin American Studies pre-majors on acceptance to UCLA. Pre-major students must apply for major standing at the end of fall quarter of their junior year; they are not automatically accepted into the major.

### Transfer Students

Transfer applicants to the Latin American Studies pre-major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two courses from socio-cultural anthropology, cultural geography, contemporary world history, and world literature and two courses from comparative politics, economic geography, macroeconomics, microeconomics, and introductory sociology. Transfer students must apply for the major by the end of fall quarter of their junior year.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Policies

Each preparation for the major course must be taken for a letter grade, and students must have a UC grade-point average of 2.0 or better in those courses. In addition, students must have earned a grade of C or better in International and Area Studies 1.

## Requirements

### Preparation for the Major

*Required:* (1) International and Area Studies 1, (2) one *area studies* course from History 8A (or 8AH), 8B, 8C, 97E, International and Area Studies 50, Portuguese 40B, 46, Spanish 44, (3) two *international politics and markets* courses from Economics 1, 2, Geography 4, 6, Political Science 50 (or 50R), Sociology 1, (4) two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Ethnomusicology 5, M25, Geography 3, History 2B, 22, World Arts and Cultures 20, 33, and (5) two area-related foreign language sequences through the intermediate level (e.g., Portuguese 3 or 11B, Spanish 5 or 7A, an indigenous language of Latin America such as Nahuatl, Quechua, or Zapotec, through that level). The language requirement can also be fulfilled in part or in total by taking a placement examination given through the appropriate language department.

### The Major

The major consists of International and Area Studies 191 (capstone seminar) and 11 upper-division courses divided among area studies and international themes courses.

*Area Studies:* (1) Three *humanities and arts group 1* courses from Art History C142A, C142B, 144, Comparative Literature 177, Ethnomusicology M108A, 108B, 113, 161K (2 units), Film and Television 106C, Music M131, Portuguese 130A, 130B, 141B, 142A, 142B, Spanish 120, World Arts and Cultures C139; (2) three *social sciences group 1* courses from African American Studies M154C, M178, Anthropology 161, 162, Chicana/o and Central American Studies 111, 117, M132, C141, 143, 151, 169, Community Health Sciences 132, Gender Studies M147C, Geography 135, 172A, 172C, History 159, 160A, 160B, 162A, Labor Studies M125, M144, Political Science 124C, 154A, 154B, Public Health M106, Sociology 186, 191J; and (3) one additional elective course selected from either item 1 or 2 above.

*International Themes:* (1) Two *international politics and markets* courses from Anthropology 143, Economics 111, 112, 121, 122, Environment 134, Geography M127, 148, 150, International Development Studies 130, Management 109, 127C, Political Science 120B, 122A, M122B, 123A, 124A, 125A, 126, 129, 134, 137A, 138B, 150, 166, M167C, 167D, 168, Sociology 182, 183, Urban Planning M165 and (2) two *international societies and cultures* courses from Anthropology 130, 140, 146, 147, Art History C160, Communication 179, Comparative Literature 100, Environment M133, Film and Television 112, Geography M131, 139C, 140, 141, 158, 161, History M186B, Honors Collegium M152, International Development Studies 110, Sociology 116, 151, 154, 191D, 191F, World Arts and Cultures CM130.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of three upper-division courses with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies electives as long the distribution between humanities and arts and social sciences is maintained. They may be selected from either of the following lists: *humanities and arts group 2:* Art History CM139A, C139B, CM141, Chicana/o and Central American Studies M105D, M105E, 109, 142, Ethnomusicology M116, Portuguese 143A or *social sciences group 2:* Anthropology 114P, 114Q, Chicana/o and Central American Studies M119, M159B, 184, M187, History 157B.

### Honors Program

The honors program is designed to offer highly motivated majors the opportunity to design and conduct their own independent research under the guidance of a faculty adviser and consists of a three-term directed-study series of courses—International and Area Studies 198A, 198B, 198C—culminating in an honors thesis.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade.

#### The Major

To count as one 4-unit course, 2-unit courses must either be taken twice or two courses from the same category (if applicable) may be taken.

Each course must be taken for a letter grade, with a minimum overall grade-point average of 2.0.

## Honors Program

### Admission

To enter the honors program, students must (1) have completed all preparation for the major requirements with a minimum 3.5 grade-point average in those courses, (2) have a 3.5 grade-point average in all upper-division coursework for the major, (3) obtain agreement from a faculty member to supervise their honors thesis, and (4) formally submit an application to the honors program. Application should normally be made during the junior year so as to best plan for completion of the honors thesis during the senior year. Contact the academic counselor for more details about the application, thesis requirements, and guidelines regarding the selection of a faculty thesis adviser.

### Requirements

Honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.5 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an honors thesis (approximately 35 to 50 pages) determined to be of honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Highest honors are awarded to students who (1) complete all requirements for the major with a cumulative grade-point average of 3.75 or better in upper-division courses required for the major, (2) successfully complete courses 198A, 198B, and 198C, and (3) produce an exceptional honors thesis (approximately 35 to 50 pages) determined to be of highest honors quality by a committee of two faculty members—the chair of International and Area Studies and the faculty adviser of the student.

Honors and highest honors are recorded on the final transcript and diploma after students successfully complete the program.

## Undergraduate Minors

### African and Middle Eastern Studies Minor

The African and Middle Eastern Studies minor is designed for students who wish to augment their major with concerted study of the history, culture, and society of the Africa and the Middle East from an interdisciplinary and modern perspective.

### Study Abroad

African and Middle Eastern Studies minors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study pro-



gram consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Admission

To enter the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

## The Minor

*Required Lower-Division Courses (13 to 15 units):* International and Area Studies 1 and two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Economics 1, 2, Ethnomusicology 5, M25, Geography 3, 4, 6, History 2B, 22, Political Science 50 (or 50R), Sociology 1, World Arts and Cultures 20, 33. Students may substitute one *area studies* preparation course (from History 9D, 97F, or Middle Eastern Studies M50CW) toward the *international societies and cultures* preparation requirement.

*Required Upper-Division Courses (20 to 21 units):* Five area studies group 1 courses as follows: (1) two *humanities and arts group 1* courses from Arabic M110, 120, C141, M151, Armenian C151, C152, C153, Art History C120, Comparative Literature M148, M162, Ethnomusicology 161N (must be taken twice to equal one 4-unit course), Hebrew M113, C140, Iranian 141, 142, Islamic Studies 151, Jewish Studies M142, M144, 175, (2) two *social sciences group 1* courses from Anthropology 135, M166Q, 167, History 105C, 107C, 109B, 111C, 167A, M184D, Honors Collegium M157, Political Science 132A, 157, 165, and (3) one additional elective course selected from the group 1 lists above or from the group 2 list below.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of one upper-division course with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies additional elective category (item 3 above). The course may be selected from the following *group 2* list: Ancient Near East M130, 150B, C165, Arabic 130, 132, 150, Armenian C155, Art History M110A, M110B, 119A, Hebrew 130, 135, History M103A, M103B, 105A, 105B, M106, 107A, 107D, 111A, 111B, 116A, 116B, Iranian M110A, M110B, M110C, 120, 131, 140, Islamic Studies 130, Jewish Studies M150A, 150B, M151A, M155, M182A, M182B, or M182C.

## Policies

One upper-division language course (advanced level) may be applied to item 3 above by petition to the chair of the program.

A minimum of 20 units applied toward the minor requirements must be in addition to units

applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## African Studies Minor

The African Studies minor is designed for students who wish to augment their major with concerted study of the history, culture, and society of Africa from an interdisciplinary and modern perspective.

## Study Abroad

African Studies minors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Admission

To enter the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

## The Minor

*Required Lower-Division Courses (13 to 15 units):* International and Area Studies 1 and two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Economics 1, 2, Ethnomusicology 5, M25, Geography 3, 4, 6, History 2B, 22, Political Science 50 (or 50R), Sociology 1, World Arts and Cultures 20, 33. Students may substitute one *area studies* preparation course (from Art History 28, Ethnomusicology 20B, French 60, History 10B, 97J, or Portuguese 40A) toward the *international societies and cultures* preparation requirement.

*Required Upper-Division Courses (20 to 21 units):* Five *area studies group 1* courses as follows: (1) two *humanities and arts group 1* courses from Art History C145A, C145B, Ethnomusicology 136A, C136B, 161E (must be taken twice to equal one 4-unit course), French 121, 142, (2) two *social sciences group 1* courses from Anthropology 135, 166P, M166Q, Geography 138, History 164B through 164E, 166B, 167A, 167B, 167C, 168B, Political Science 151A, 151B, 151C, and (3) one additional elective course selected from the group 1 lists above or from the group 2 list below.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maxi-

mum of one upper-division course with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies additional elective category (item 3 above). The course may be selected from the following *group 2* list: Ancient Near East M130, 150B, C165, Art History M110A, M110B, French 160, Geography 135, History M103A, M103B, 166A, 168A, or World Arts and Cultures C139.

## Policies

One upper-division language course (advanced level) may be applied to item 3 above by petition to the chair of the program.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## East Asian Studies Minor

The East Asian Studies minor is designed for students who wish to augment their major with concerted study of the history, culture, and society of East Asia—China, Korea, and Japan—from an interdisciplinary and modern perspective.

## Study Abroad

East Asian Studies minors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Admission

To be admitted to the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

## The Minor

*Required Lower-Division Courses (13 to 15 units):* International and Area Studies 1 and two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Economics 1, 2, Ethnomusicology 5, M25, Geography 3, 4, 6, History 2B, 22, Political Science 50 (or 50R), Sociology 1, World Arts and Cultures 20, 33. Students may substitute one *area studies* preparation course (from Art History 29, Asian 30, Chinese



40, 50, 50W, M60, M60W, 80, Clusters 25A, History 9C, 11B, 97G, International and Area Studies 33, Japanese 50, 70, 75, 80, Korean 40W, 50, M60, 70, 75, or 80) toward the *international societies and cultures* preparation requirement.

*Required Upper-Division Courses (20 to 21 units):* Five *area studies group 1* courses as follows: (1) two *humanities and arts group 1* courses from Art History C148D, C148E, C150B, Asian 151, 161, 162, Chinese C120, 124, 125, 130B, 131, 139, C144, C150A, C150B, 151, 152, 155, C156, CM160, 165, 180, 191B, Comparative Literature M176, Ethnomusicology C156A, C159, 160, 161J (must be taken twice to equal one 4-unit course), Japanese 124, CM127, 130A, 130B, 130C, 151, 154, 155, M156, CM160, 161, 170, 174, C182, 191B, Korean C105A, C105B, C105C, CM127, 148A, C151, 153, 154, 155, CM160, 172, C177, 179, 180C, 182, 183, 184B, 185, M186, 187, 191B, Theater 102A, (2) two *social sciences group 1* courses from Anthropology M145T, 163P, 163Q, 163R, Asian American Studies 171A, 171B, 171C, Gender Studies M170C, M173B, Geography 175A, 175B, History 169B, 170B, 170D, 172C, 173A, M173C, Political Science 135, 159A, 159B, 160, Sociology 181A, 181B, and (3) one additional elective course selected from the group 1 lists above or from the group 2 list below.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of one upper-division course with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies additional elective category (item 3 above). The course may be selected from the following *group 2* list: Anthropology 116Q, Art History C148A, C148B, C148C, 152A, C152B, C152D, 154B, Asian American Studies 111, 113, 121, 122B, 130A, M130C, 131A, 131B, 131C, 132A, Chinese C175, M183, 186, 191A, History 152, 170A, 172B, Japanese 165, 172, 191A, Korean C150, 165, 180A, 180B, 184A, or 191A.

## Policies

One upper-division language course (advanced level) may be applied to item 3 above by petition to the chair of the program.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## European Studies Minor

The European Studies minor is designed for students who wish to augment their major with concerted study of the history, culture, and society of Europe from an interdisciplinary and modern perspective.

## Study Abroad

European Studies minors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Admission

To enter the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

## The Minor

*Required Lower-Division Courses (13 to 15 units):* International and Area Studies 1 and two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Economics 1, 2, Ethnomusicology 5, M25, Geography 3, 4, 6, History 2B, 22, Political Science 50 (or 50R), Sociology 1, World Arts and Cultures 20, 33. Students may substitute one *area studies* preparation course (from Comparative Literature 1C, 2CW, 4CW, Dutch 10, English 88G, French 12, 14, 14W, 41, 60, German 50B, 59, 61A, History 1C, 1CH, 97C, International and Area Studies 40, Italian 42B, 46, 50B, Portuguese 40A, Romanian 90, Russian 25, 25W, 30, 31, 32, 90B, 90BW, Scandinavian 50, 50W, Slavic 90, or Spanish 42) toward the *international societies and cultures* preparation requirement.

*Required Upper-Division Courses (20 to 25 units):* Five *area studies group 1* courses as follows: (1) two *humanities and arts group 1* courses from Art History 127B, M127C, Central and East European Studies 125, Comparative Literature C163, C164, Dutch 113, 131, English 115B, 164A, 164B, 164C, 171B, 171C, Ethnomusicology 133, Film and Television 106B, French 114C, 119, 120, 138, 139, 141, German 102, 103, 104, 110, 112, 173, 174, Italian 102C, 120, 121, 150, M158, Russian 107B, 120, 121, 122, M127, 128, 130A, 130B, 130C, 131, M132, 140A, 140B, 140C, Scandinavian C141A, 141C, C155, 156, 157, 161, C163A, C163B, C163C, 173A, C174A, 174B, C180, Yiddish 131A, 131B, (2) two *social sciences group 1* courses from Economics 181, Geography 173A, 174A, History 120A through 120D, 121D, 121E, 121F, 122F, 123B, 123C, 124B, 124C, 125B, 125C, 125D, 127B, 127C, 127D, 128C, 129B, 131A, 131B, 134B, 134C, 135C, 136B, 136C, 137A, 137B, 183A, 183B, Honors Collegium 173A, Political Science 127A, 128A, 128B, 153A, 156A, and (3) one additional elec-

tive course selected from the group 1 lists above or from the group 2 list below.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of one upper-division course with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies additional elective category (item 3 above). The course may be selected from the following *group 2* list: French 114A, 114B, 115, 116, 117, 118, 169, German 170, History 121A, 121B, 121C, 122A, 122B, 122C, 125A, 126, Italian 102A, 102B, 103A, 103B, 110, 113, 114B, 116A, 116B, 140, Political Science 111C, Russian C124C, C124D, C124G, C124N, C124P, C124T, Scandinavian 142A, 143C, or 154.

## Policies

One upper-division language course (advanced level) may be applied to item 3 above by petition to the chair of the program.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Latin American Studies Minor

The Latin American Studies minor is designed for students who wish to augment their major with concerted study of the history, culture, and society of Latin America from an interdisciplinary and modern perspective.

## Study Abroad

Latin American Studies minors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Admission

To enter the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

## The Minor

*Required Lower-Division Courses (13 to 15 units):* International and Area Studies 1 and two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Economics 1, 2, Ethnomusicology 5, M25, Geography 3, 4, 6, History 2B, 22, Political Science 50 (or 50R), Sociology 1, World Arts and Cultures 20, 33. Students may substitute one *area studies* preparation course (from Clusters 26A, History 8A, 8AH, 8B, 8C, 97E, International and Area Studies 50, Portuguese 40B, 46, or Spanish 44) toward the *international societies and cultures* preparation requirement.

*Required Upper-Division Courses (20 to 25 units):* Five *area studies group 1* courses as follows: (1) two *humanities and arts group 1* courses from Art History C142A, C142B, 144, Comparative Literature 177, English 135, Ethnomusicology M108A, 108B, 161K (must be taken twice to equal one 4-unit course), Film and Television 106C, Portuguese 130A, 130B, 141B, 142A, 142B, Spanish 120, World Arts and Cultures C139, (2) two *social sciences group 1* courses from African American Studies M154C, M154D, M178, Anthropology 161, 162, Chicana/o and Central American Studies 111, 117, M125, M132, C141, 143, 151, 169, Community Health Sciences 132, Gender Studies 129, M144, M147C, Geography 135, 172A, 172C, History 159, 160A, 160B, 162A, 162B, 162C, Political Science 124C, 154A, 154B, Public Health M106, Sociology 186, 191J, and (3) one additional elective course selected from the group 1 lists above or from the group 2 list below.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of one upper-division course with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies additional elective category (item 3 above). The course may be selected from the following *group 2* list: Anthropology 114P, 114Q, Art History CM139A, C139B, CM141, Chicana/o and Central American Studies M105D, M105E, 109, M119, 142, M159B, 184, M187, Ethnomusicology M116, History 157A, 157B, or Portuguese 143A.

## Policies

One upper-division language course (advanced level) may be applied to item 3 above by petition to the chair of the program.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## South Asian Studies Minor

The South Asian Studies minor is designed for students who wish to augment their major with

concerted study of the history, culture, and society of South Asia from an interdisciplinary and modern perspective.

## Study Abroad

South Asian Studies minors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Admission

To enter the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

## The Minor

*Required Lower-Division Courses (13 to 15 units):* International and Area Studies 1 and two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Economics 1, 2, Ethnomusicology 5, M25, Geography 3, 4, 6, History 2B, 22, Political Science 50 (or 50R), Sociology 1, World Arts and Cultures 20, 33. Students may substitute one *area studies* preparation course (from Art History 31, History 9A, 97N, or South Asian M60) toward the *international societies and cultures* preparation requirement.

*Required Upper-Division Courses (20 to 21 units):* Five *area studies group 1* courses as follows: (1) two *humanities and arts group 1* courses from Art History C154C, 154D, Asian 151, 162, 163, Comparative Literature C178, Ethnomusicology 146, 147, South Asian 150, 155, (2) two *social sciences group 1* courses from Asian American Studies 172C, Gender Studies M164A, History 174B, 174C, 175A, 175C, and (3) one additional elective course selected from the group 1 list above or from the group 2 list below.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of one upper-division course with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies additional elective category (item 3 above). The course may be selected from the following *group 2* list: Anthropology 116P, Art History 154A, 154B, Asian 164, Asian American Studies M172A, 172B, History 174A, South Asian CM160, or 185.

## Policies

One upper-division language course (advanced level) may be applied to item 3 above by petition to the chair of the program.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Southeast Asian Studies Minor

The Southeast Asian Studies minor is designed for students who wish to augment their major with concerted study of the history, culture, and society of Southeast Asia—Brunei, Cambodia, East Timor, Indonesia, Laos, Malaysia, Myanmar (Burma), Philippines, Singapore, Thailand, and Vietnam—from an interdisciplinary and modern perspective.

## Study Abroad

Southeast Asian Studies minors are highly encouraged to study abroad. Students can travel to all areas through a variety of programs with various lengths (summer or during the academic year).

Students may partially fulfill the area studies elective requirement by participating in an International Institute Summer Travel Study program consisting of two courses in and on a particular region of the world. Contact the academic counselor for more information on available programs.

More information about [study abroad programs](#) is available through the UCLA [International Education Office](#) by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Admission

To enter the minor, students must be in good academic standing (overall grade-point average of 2.0 or better) and have completed all lower-division minor courses with a GPA of 2.0 or better in those courses.

## The Minor

*Required Lower-Division Courses (13 to 15 units):* International and Area Studies 1 and two *international societies and cultures* courses from Anthropology 3, Comparative Literature 1D (or 2DW or 4DW), Economics 1, 2, Ethnomusicology 5, M25, Geography 3, 4, 6, History 2B, 22, Political Science 50 (or 50R), Sociology 1, World Arts and Cultures 20, 33. Students may substitute one *area studies* preparation course (from Art History 31, History 9E, 97M, International and Area Studies 31, Southeast Asian M20, 50, M60, 70, 90, or Vietnamese 40) toward the *international societies and cultures* preparation requirement.

*Required Upper-Division Courses (20 to 21 units):* Five *area studies group 1* courses as fol-

lows: (1) two *humanities and arts group 1* courses from Ethnomusicology 161B (must be taken twice to equal one 4-unit course), Southeast Asian 130, 135, C140, C150, Vietnamese CM155, 180B, M186, (2) two *social sciences group 1* courses from Asian American Studies M171D, 171E, Gender Studies M164A, History 176B, 176C, 176E, 177A, 177B, 185B, 185C, Political Science 158, and (3) one additional elective course selected from the group 1 list above or from the group 2 list below.

The area studies electives listed above (group 1) focus on contemporary issues of that region after 1750. Students may substitute a maximum of one upper-division course with focus on earlier historical aspects of the region or on diasporas with origins related to the region toward the area studies additional elective category (item 3 above). The course may be selected from the following *group 2* list: Art History 156, Asian American Studies 111, 113, 121, 122B, 133, 134, History 152, 176A, or Vietnamese 180A.

## Policies

One upper-division language course (advanced level) may be applied to item 3 above by petition to the chair of the program.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

# International and Area Studies

## Lower-Division Courses

**1. Introduction to International and Area Studies. (5)** Lecture, three hours; discussion, one hour. Introduction to international and area studies from interdisciplinary framework, covering themes related to international politics and markets, as well as international societies and cultures, to illuminate and clarify profoundly international character of world we live in and to introduce set of contemporary issues and challenges that cross borders and affect every region of world. P/NP or letter grading.

**M6A-M6B-M6C. Elementary Amharic. (4-4-4)** (Same as African American Studies M9A-M9B-M9C.) Lecture, five hours. Course M6A is requisite to M6B, which is requisite to M6C. Introduction to Amharic, Semitic language that is official language of Ethiopia. Coverage of basic Amharic grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**M7A-M7B-M7C. Elementary Yoruba. (4-4-4)** (Same as African American Studies M7A-M7B-M7C.) Lecture, five hours. Course M7A is requisite to M7B, which is requisite to M7C. Introduction to Yoruba, one of major languages of West Africa, which is spoken widely throughout southwest Nigeria, Benin, and Togo. Coverage of basic Yoruba grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**10. Explorations in International Studies. (2)** Lecture, two hours. Exploration of key international events through active learning, designed to develop understanding of international issues and diverse skill set, including persuasive speaking, critical thinking, re-

search skills, problem solving, teamwork, expository writing, and leadership skills. May be repeated for credit without limitation. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**31. Introduction to Southeast Asia. (5)** Lecture, three hours; discussion, one hour (when scheduled). Interdisciplinary survey designed as introduction to modern Southeast Asia. P/NP or letter grading.

**33. Introduction to East Asia. (5)** Lecture, three hours; discussion, one hour (when scheduled). Interdisciplinary survey designed as introduction to modern East Asia. P/NP or letter grading.

**40. Introduction to Europe. (5)** Lecture, three hours; discussion, one hour (when scheduled). Interdisciplinary survey designed as introduction to modern Europe. P/NP or letter grading.

**50. Introduction to Latin America. (5)** Lecture, three hours; discussion, one hour (when scheduled). Interdisciplinary survey designed as introduction to modern Latin America. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**110A-110B. Field Studies in International and Area Studies. (4-4)** Seminar, three hours. Exploration of culture, economy, history, and politics of important locations around world. Hands-on experiential programs offered for students participating in UCLA Travel Study Program. Field trips included to gain firsthand experience. May be repeated with topic and/or location change. Offered in summer only. P/NP or letter grading.

**111A. Art of Citizen Diplomacy. (2)** Seminar, two hours. Examination of theory, tools, and practice of civic engagement by highlighting student leadership. Provides students with practical tools in leadership, civic responsibility, and conflict resolution in order to tackle global issues such as climate change, gender equality, income equality, and human rights. Class activities to understand how ordinary citizens can build bridges between cultures. Letter grading.

**111B. Introduction to Experiential Learning Abroad. (2)** Seminar, two hours. Intended for students planning to participate in international study abroad program during upcoming summer. Practical tools in effective listening, intercultural understanding, understanding multiple narratives, sharpening leadership skills, and articulating thoughts. Prepares students for study abroad experiences and offers them tools to appreciate their travel. Letter grading.

**111C. Engaging Global Cultures: Reflecting on Fieldwork. (2)** Seminar, two hours. Academic venue for students who have attended study abroad programs to reflect on and share their experiences in order to enhance benefits of program in which they

participated. Practical tools in active listening and applying knowledge acquired during international travel. Students analyze complex layers of intercultural communication, world affairs, and conflict. Post-study abroad follow-up activities, including presentations on campus and in community, other on-campus education activities, and writing of journal article. Letter grading.

**160. Selected Topics in International and Area Studies. (4)** Lecture, three hours; discussion, one hour (when scheduled). Examination of one or more topics related to international and area studies. May be repeated for credit with topic change. P/NP or letter grading.

**188. Special Courses in International and Area Studies. (4)** Seminar, three hours. Program-sponsored experimental or temporary courses, such as those taught by resident or visiting faculty members. May be repeated for credit with topic change. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Senior Research Seminars: International and Area Studies. (4)** Seminar, three hours. Enforced requisite: course 1. Limited to senior international and area studies majors. Organized on topics basis with readings, discussions, papers, and development of culminating project. May not be repeated for credit. Letter grading.

**193. Colloquia and Speaker Series. (1)** Seminar, two hours. Introduction to current scholarship in field of international and area studies. Attendance at selected presentations with required response papers. May be repeated for credit. P/NP grading.

**195CE. Community or Corporate Internships in International and Area Studies. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. May be applied toward major requirements. May be repeated for credit with consent of Center for Community Learning. Individual contract with supervising faculty member required. P/NP or letter grading.

**198A-198B-198C. Honors Research in International and Area Studies. (4-4-4)** Tutorial, to be arranged. Limited to international and area studies honors program students. May be repeated for credit. Individual contract required. Letter grading. **198A.** Supervised individual research or investigation under guidance of faculty mentor. Development and planning of honors thesis. **198B.** Enforced requisite: course 198A. Supervised individual research or investigation under guidance of faculty mentor. Continued development and refinement of honors thesis. **198C.** Enforced requisite: course 198B. Final drafting and submission of completed honors thesis. Culminating paper of 35 to 50 pages required.

**199. Directed Research in International and Area Studies. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper required. May be applied toward requirements via petition. May be repeated for credit. Individual contract required. Letter grading.



## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4) Seminar,** to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# INTERNATIONAL DEVELOPMENT STUDIES

*Interdepartmental Program  
College of Letters and Science*

10274 Bunche Hall  
Box 951487  
Los Angeles, CA 90095-1487

**International Development Studies**  
310-825-5187

**Program e-mail**

Jennifer J. Chun, PhD, *Chair*

## Faculty Committee

Hannah C. Appel, PhD (*Anthropology*)

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Kevan K. Harris, PhD (*Sociology*)

Patrick C. Heuveline, PhD (*Sociology*)

Michael F. Lofchie, PhD (*Political Science*)

Daniel N. Posner, PhD (*Political Science*)

Shaina S. Potts, PhD (*Geography*)

Alden H. Young, PhD (*African American Studies, Sociology*)

## Overview

Through an interdisciplinary lens, the International Development Studies major offers students the opportunity to study, analyze, and critically assess the social, political, and economic forces that, throughout history, have shaped inequality in the modern world. The central objective of the program is to engage students with debates around the widening patterns of disparities of wealth, power, privilege, and access to social justice that occur both within and between the countries of the global north and global south.

## Undergraduate Major

### International Development Studies BA

The curriculum introduces students to key theoretical debates around development and to detailed case studies of successful and failed interventions; and provides methodological training. Core and elective courses illuminate the extent to which realities that affect people often arise owing to economic class, gender, race, ethnicity, religion, migrant status and other identities, and investigate the impact of

policy solutions and forms of citizen engagement on communities and the environment. Students are trained to both think critically about these issues and explore ways to engage with development work at home and abroad through experiential learning, internships, immersive study abroad programs, independent faculty-guided research, and collaborative group projects.

## Study Abroad

International Development Studies majors are highly encouraged to study abroad in developing areas of the world. Students can do so through a variety of programs with various lengths (summer or during the academic year). More information about study abroad programs is available through the UCLA **International Education Office**. Contact the **office** by e-mail, in person at 1332 Murphy Hall, or by phone at 310-825-4995.

## Capstone Major

The International Development Studies major is a designated capstone major. Seniors must complete an advanced seminar that provides unique opportunity to work closely with a faculty member on a focused topic of research. Students completing the capstone should be able to demonstrate skills and expertise acquired in earlier coursework; identify, analyze, and select relevant data from primary and secondary sources; acquire a working knowledge of broader scholarly discourse; conceive and execute an original research paper; and engage with a community of scholars, presenting their work to peers as well as providing feedback on peers' work. The seminar culminates in a written paper or project and a formal class report.

## Learning Outcomes

The International Development Studies major has the following learning outcomes:

- Demonstrated specific skills and expertise, including original research, data analysis, clear and cogent writing, and general knowledge/critique of majors issues in the field
- Identification, analysis, selection, and use of relevant data from primary and secondary sources
- Working knowledge and formation of an opinion about diverse perspectives and discourses
- Design of an original research project that identifies, engages, and addresses a focused problem
- Active engagement with a community of scholars by expressing viewpoints through robust and informed discourse

## Entry to the Major

### Admission

Admission to the International Development Studies major is by application only. To be eligible to apply, students must have first completed all nonlanguage preparation courses and the foreign language courses through at least level 3 (elementary level). Any remaining language courses may be completed after students have been accepted to the major.

## Pre-major

Incoming first-year and transfer students may be admitted as International Development Studies pre-majors on acceptance to UCLA. Pre-major students must apply for major standing at the end of fall quarter of their junior year; they are not automatically accepted into the major.

## Transfer Students

Transfer applicants to the International Development Studies pre-major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two introductory macroeconomics, microeconomics, and/or economic geography courses; one statistics course; three courses, each from a separate category, selected from sociocultural anthropology, cultural or economic geography, cultural area studies, world history, comparative politics, and introductory sociology; and demonstrated proficiency equivalent to level 3 at UCLA in one modern foreign language. Transfer students must apply for the major by the end of fall quarter of their junior year.

Refer to the **UCLA transfer admission guide** for up-to-date information regarding transfer selection for admission.

## Entry to the Major Policies

Each preparation for the major course must be taken for a letter grade, and students must have a UC grade-point average of 2.0 or better in those courses.

The application period is once per year, and students must apply no later than the end of fall quarter of their junior year.

Meeting the above minimums does not guarantee admission to the program. Admission is on a competitive basis, using the above qualifications as minimum standards for consideration.

## Requirements

### Preparation for the Major

*Required:* (1) International Development Studies 1; (2) one course from Economics 1, 2, Geography 4, Public Affairs 30, or 40; (3) one methods course from Economics 41, Education 35, History 96W, Political Science 6, 6R, Public Affairs 60, Sociology 20, Statistics 10, or 12; (4) three social sciences/area studies courses, each from a different category, selected from (a) Anthropology 3, (b) Gender Studies 10, (c) Geography 3, 5, 6, (d) Global Studies 1, International and Area Studies 1, 31, 33, 50, (e) History 8A, 8B, 8C, 9A, 9D, 9E, 10B, 10BW, 11B, 12B, 12C, 22, (f) Political Science 20, 50, (g) Sociology 1, (h) Comparative Literature 4DW, Spanish 44; and (5) demonstrated proficiency in one modern foreign language equivalent to level 6 at UCLA.

### The Major

*Required:* (1) Three *core* courses selected from International Development Studies 110, M120, 130, and 140; (2) *capstone seminar* course: International Development Studies 191; (3) one *research methodology* course from Anthropology 138P, Asian American Studies 103, C142A,



C142B, Chicana/o and Central American Studies M119, M122, 123, Economics 103, Political Science 170A, Public Affairs 115, 116, Sociology 113, Statistics 112, Urban Planning M122; (4) three *social and critical theory* courses, each from a different department, from Anthropology 130, 140, 143, 146, 147, Economics 111, 112, 134, Environment M125, M133, M161, Gender Studies 102, 103, Geography M125, M127, 130, 140, 141, 148, 150, 151, 158, International Development Studies 110 or M120 or 130 or 140 (if not taken under item 1), M150, Political Science 122A, M122B, 124A, 167D, 168, Public Affairs 110, Sociology 101, 102, M115, 122, 123, 182, 183, 191D, Urban Planning M110, 121, M160, CM166; (5) two *regional* courses, either from the same or separate developing regions of the world (East Asia and East Central Asia, Eastern Europe and West Central Asia, Latin America and Caribbean Basin, Middle East and North Africa, South and Southeast Asia and Pacific Islands, Sub-Saharan Africa) and one disciplinary elective listed below:

*East Asia and East Central Asia:* Anthropology 163P, Asian American Studies 171A, Chinese 152, Gender Studies M170C, Geography 175B, History M170C, 170D, Korean 154, 155, 180C, Political Science 135, 159A, 159B, Sociology 181A.

*Eastern Europe and West Central Asia:* Anthropology 163Q, Central and East European Studies 125, C126, Gender Studies M127, History 107C, 120B, 120D, 127B, 127C, Political Science 128B, 156A, Russian 120, 121, 122, M127, 131.

*Global North:* Asian American Studies 134, Chicana/o and Central American Studies M132, Education M108, English 106, Sociology 152, Theater 107.

*Latin America and Caribbean Basin:* African American Studies M154C, M178, Anthropology 161, 162, Art History C142B, Chicana/o and Central American Studies M125, M126, M144, CM147, 169, Community Health Sciences 132, Gender Studies 123, M144, M147C, Geography 172A, 172C, History 157B, 162A, Honors Collegium M145, Political Science 124C, 154A, 154B, M184A, Portuguese 142A, 143A, Sociology M178, 186.

*Middle East and North Africa:* Anthropology M166Q, 167, History 105C, M108C, 109B, 111C, Honors Collegium M157, Political Science 132A, M132B, 157, 165.

*South and Southeast Asia and Pacific Islands:* Anthropology 168P, Asian American Studies 122A, 122B, M171D, 171E, 172C, M173, Gender Studies M164A, Geography 176A, History M144C, 174B, 174C, 175A, 175C, 176B, 176C, 177B, Honors Collegium 184, Political Science 158, Southeast Asian 135, 157, Vietnamese CM155, 180B.

*Sub-Saharan Africa:* Anthropology 166P, Art History C145A, C145B, Comparative Literature 169, Geography 138, History 164D, 164E, 166B, 168B, Political Science 151A, 151B.

*Disciplinary Electives:* Anthropology M145R, M148, Community Health Sciences 100, Economics 121, 122, 137, 150, 151, Education 109A, English 130, 131, Environment 186, Film and Television 106C, 112, M124, Gender Studies M154Q, M154R, Geography M131, 139C, M142, Global Studies 102, 103, 104, History

131A, Honors Collegium M152, Political Science 116A, 123A, 126, 137A, 150, Sociology 154, 191F.

## Honors Program

In addition to completing all courses required for the major, students must take courses 198A, 198B, and 198C, in which they research, write, and present an honors thesis.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade.

### The Major

Each course must be taken for a letter grade. Students must earn a grade of C or better in International Development Studies 110, M120, 130, and 140; no more than one of these three courses may be repeated. All three core courses must be taken prior to the capstone senior seminar 191 course.

## Honors Program

Majors who have completed International Development Studies 110, M120, and 130 and who have a 3.5 grade-point average in all courses offered for the major are eligible to formally apply for the honors program.

To receive honors at graduation, students must have at least a 3.5 GPA in courses applied toward the major (including 198A, 198B, 198C) and an overall GPA of 3.0.

Highest honors are awarded to students who complete the major (including courses 198A, 198B, 198C) with a 3.75 GPA and who produce an exceptional thesis.

# International Development Studies

## Lower-Division Courses

**1. Introduction to International Development Studies. (5)** Lecture, three hours; discussion, one hour. Exploration of historical and contemporary context of socioeconomic inequalities between Global South and Global North. Focus on cultural, political, and economic realities of developing world, which includes countries of Asia, eastern Europe, Africa, Middle East, and Latin America. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**110. Culture, Power, and Development. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 1. Broad introduction to theoretical traditions in development studies, with focus on dynamics of culture, power, markets, states and social movements, with selected case studies in developing nations and comparative case analysis across Global South and North. Letter grading.

**M120. Political Economy of Development. (4)** (Same as Political Science M167C.) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 1. Political economy approach to puzzle of why some countries are rich and others are poor and why, among latter, some have been able to achieve rapid rates of economic growth and others have not. Explanation and review of logic behind most important arguments that have been advanced to account for differences across countries in rates and levels of economic development. Letter grading.

**130. Theory and History in International Development. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 1. Social scientific survey of debates over policies contributing to economic development and underdevelopment. Topics include measurement and statistics, social and industrial policies, inequality, poverty, and historical differences for development paths across Europe, Asia, Africa, and Latin America. Letter grading.

**140. Decolonizing Political Economy: Colonialism and Development. (4)** Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 1. Introduction to approaches and intellectual traditions of critical development studies. Violence of colonization and struggle for decolonization were two of defining processes of 20th century. Consideration of how development as global good can be reconciled with its origins in colonialism, and how development became hegemonic way of imagining decolonization. Particular focus on voices of critique and special emphasis to models of development that emerged from Africa, Middle East, and South Asia. Discussion of relationship between rival notions of development and competing ideas of international relations. Letter grading.

**M150. Political Economy of Climate Change. (4)** (Same as Political Science M152.) Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 1. Exploration of how governments at international, national, and regional levels are addressing—or not addressing—extraordinary challenge of climate change. Use of combination of readings, lectures, and discussions to better understand causes, consequences, and policies to address most important political problem of our time—not just in U.S., but in other major countries as well. Concentration on challenge of mitigating, rather than adapting to, climate change; and concentration on energy use, rather than agriculture, forestry, and land use. Letter grading.

**160. Selected Topics in International Development Studies. (4)** Lecture, three hours; discussion, one hour (when scheduled). Examination of one or more topics related to international development. May be repeated for credit with topic change. P/NP or letter grading.

**M177. Superfoods: Cultural and Global Perspectives. (4)** (Same as Food Studies M177 and Global Studies M177.) Seminar, four hours. Exploration of superfoods, which are nutrient rich foods considered beneficial for well-being, health, and longevity, as they are high in minerals, vitamins, and antioxidants. While superfoods have been part of cultures' diets for centuries, in recent decades they have been researched in scientific and medical communities. Citizens globally have begun to increasingly demand and consume foods that are nutritious, organic, and sustainable. It is

important also to address issues such as marketing, misinformation, and hyper about superfoods. Surge of interest in superfoods is increasingly important in context of ongoing global inequities with regards to food access and production. Study addresses paradox that communities cope simultaneously with malnutrition/hunger and obesity, and how farming practices for superfoods and staple crops are related. P/NP or letter grading.

**188. Special Courses in International Development Studies. (4)** Seminar, three hours. Program-sponsored experimental or temporary courses on selected contemporary topics in international development taught by visiting instructors or affiliated faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: International Development Studies—Senior Seminar. (4)** Seminar, three hours. Prerequisites: three courses from 110, M120, 130, 140. Limited to senior International Development Studies majors. Organized on topics basis with readings, discussions, papers. May not be repeated for credit. Letter grading.

**192. Undergraduate Practicum in International Development Studies. (2)** Seminar, two hours; practicum, to be arranged. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students to serve as undergraduate course assistants in international development studies courses. Students assist in preparation and presentation of materials and development of innovative programs with guidance of faculty members. Consult academic counselor for further information. May not be applied toward major requirements. May be repeated for credit. P/NP grading.

**193. Colloquia and Speaker Series. (1)** Seminar, two hours. Introduction to current scholarship in field of international development studies or of topics related to guest speaker series. May be repeated for credit. P/NP grading.

**194. Research Group Seminar. (1)** Seminar, two hours. Designed to encourage participation and stimulate progress in specific research areas for undergraduate students who are part of departmental research group or internship. Discussion of research methods and current literature in field of international development studies or of research of faculty members or students. May be repeated for credit. P/NP grading.

**195. Community or Corporate Internship in International Development Studies. (4)** Tutorial, to be arranged; fieldwork, 10 to 12 hours. Limited to juniors/seniors. Supervised internship in corporate, community, governmental, or nonprofit setting coordinated by International Development Studies. Additional supervision to be provided by internship site supervisor. Students meet with adviser and provide final reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP grading.

**198A-198B-198C. Honors Research in International Development Studies. (4-4-4)** Tutorial, to be arranged. Preparation: 3.5 grade-point average in courses for major, formal application to honors program. Prerequisites: courses 110, M120, 130. Limited to junior/senior International Development Studies majors. May be repeated for credit. Individual contract required. **198A.** Research, discussion, and planning of

honors thesis under direct supervision of faculty member. Letter grading. **198B.** Enforced requisite: course 198A. Research, discussion, and planning of honors thesis under direct supervision of faculty member. In Progress grading. **198C.** Enforced requisite: course 198B. Final drafting and submission of honors thesis under direct supervision of faculty member. Letter grading.

**199. Directed Research in International Development Studies. (4)** Tutorial, to be arranged. Limited to junior/senior International Development Studies majors. Supervised intensive directed research program in which students conduct interdisciplinary research under guidance of faculty mentor. Culminating paper required. May be applied toward major via petition. May not be repeated. Individual contract required. Letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# INTERNATIONAL MIGRATION STUDIES

*Interdisciplinary Minor  
College of Letters and Science*

10389B Bunche Hall  
Box 951487  
Los Angeles, CA 90095-1487

## International Migration Studies

Roger Waldinger, PhD, *Chair*

## Faculty Committee

Leisy J. Abrego, PhD (*Chicana/o and Central American Studies*)  
Victor Agadjanian, PhD (*Sociology*)  
Rubén Hernández-León, PhD (*Sociology*)  
Hiroshi Motomura, JD (*Law*)  
Marjorie E. Faulstich Orellana, PhD (*Education*)  
H. Glenn Penny, PhD (*History*)  
Roger Waldinger, PhD (*Sociology*)  
J. Christopher Zepeda-Millán, PhD (*Chicana/o and Central American Studies, Public Policy, Sociology*)

## Overview

International migration is a global phenomenon—comprising broad and deep linkages within and between the developed and developing worlds. As the issues surrounding global migration processes cross manifold intellectual boundaries, understanding demands insights and methods from a broad array of disciplines. Standard models in economics or demography offer powerful explanations of why people migrate and how migration might have an effect on wages and employment in both sending and receiving societies. However, migration is ultimately about the lived experience of people—those moving and those they encounter. Understanding migrants' emergent identities and the problems of belonging and acceptance that

migration generates requires attention, both to the micro level, as well as to the specific historical and cultural contexts surrounding both migration flows and societal responses.

# Undergraduate Minor International Migration Studies Minor

The minor in International Migration Studies orients students toward comparative, historical, and international dimensions, providing structured exposure to the relevant scholarship. It aims to build an appreciation of international migration and its dilemmas as it draws on the insights generated from a broad array of disciplines and methodological approaches needed for grappling with a vast social and intellectual phenomenon.

## Admission

Admission to the International Migration Studies minor is by application and is competitive, using courses, grades, grade-point averages, and personal statements as minimum standards for consideration. To better ensure that they can be successful in their research, students must also secure a faculty member who serves as their thesis adviser, generally to be chosen from the list of affiliated faculty.

Applicants must be in good academic standing with an overall grade-point average of 2.0 or better and demonstrate a genuine interest in the subject matter. Applicants are not automatically accepted into the minor and only a limited number of students are admitted each year. Applications must be submitted no later than spring quarter of the junior year.

## The Minor

*Required Upper-Division Courses (28 to 32 units):* (1) one core course: Sociology 151 or 152; (2) four elective courses, from at least two departments, selected from Asian American Studies M130C, M166A, 167, Chicana/o and Central American Studies 120, M124, M126, 164XP, C179, Economics 103, 151, English 134, German 175, History 145A, M146B, 146C, Political Science 143C, M181B, Psychology 129C, 133G, Slavic CM114, Sociology 116, 154, 156, Urban Planning 141; (3) two courses, International Migration Studies 155 and 199, to include an advanced theory course, and a thesis tutorial culminating in a thesis.

Students who take both core courses may apply the second course toward the elective requirement.

This minor culminates in a thesis.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade of C– or better. Successful completion of the minor is indicated on the transcript and diploma.

# International Migration Studies

## Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**155. Theory, Research, and Methods in Study of International Migration.** (4) Seminar, three hours. Limited to International Migration Studies minors. Overview of key debates in study of international migration, focusing on emigration, immigration, and connections between place of origin and destination. Letter grading.

**193. Colloquia and Speaker Series.** (2) Seminar, two hours. Introduction to current scholarship in field of international migration studies. Attendance at selected presentations with required response papers. May be repeated for credit. P/NP grading.

**199. Directed Individual Research in International Migration Studies.** (4) Tutorial, to be arranged. Requirement: course 155. Limited to International Migration Studies minors. Supervised individual research under guidance of faculty mentor. Culminating paper required. Individual contract required. Letter grading.

# LABOR STUDIES

Interdepartmental Program  
College of Letters and Science

9244 Bunche Hall  
Box 951478  
Los Angeles, CA 90095-1478

**Labor Studies**

310-206-0812

**Program e-mail**

J. Christopher Zepeda-Millán, PhD, *Chair*

## Faculty Committee

Maylei S. Blackwell, PhD (*Chicana/o and Central American Studies, Gender Studies*)

Jennifer J. Chun, PhD (*Asian American Studies*)

Christopher L. Erickson, PhD (*Management*)

F. Tobias Higbie, PhD (*History*)

Jasmine D. Hill, PhD (*Public Policy, Sociology*)

Gaye T. Johnson, PhD (*African American Studies, Chicana/o and Central American Studies*)

Kelly A. Lytle Hernández, PhD (*African American Studies, History*)

Sarah T. Roberts, PhD (*Gender Studies, Information Studies*)

Abel Valenzuela, Jr., PhD (*Chicana/o and Central American Studies, Urban Planning*)

Noah D. Zatz, JD, MA (*Law*)

J. Christopher Zepeda-Millán, PhD (*Chicana/o and Central American Studies, Public Policy, Sociology*)

## Overview

Labor studies is an interdisciplinary field of scholarship that encompasses historical and contemporary study of the sociocultural economic, legal policy, and political forces that shape the lives of working people, labor markets, employment practices, and social movements seeking greater economic equity for workers and their communities. Labor studies also embraces the insights of critical race, ethnic, working class, and gender studies in order to understand work and social movements as a multidimensional site of study. Labor studies students gain a strong background in social scientific analysis and applied research, and have many opportunities for civic engagement. The program is intended for students who wish to gain an in-depth understanding of the broad array of issues related to labor, work, and social movements. Students are strongly encouraged to meet with a faculty and student coordinator, to create a pathway to graduation and to create a curriculum guide that consists of either a coherent integration of courses according to a thematic or topical investigation or, alternatively, a comprehensive survey of the main issues involved in the study of labor and social change.

## Career Prospects

Graduates with a bachelor's degree in Labor Studies are prepared for careers in nonprofit advocacy, public service, and labor and social movements broadly defined. With ample opportunities to develop and apply a variety of research modalities through coursework, students are also prepared to succeed in graduate and professional school programs in a wide variety of fields.

## Undergraduate Study

Labor Studies is interdisciplinary by its nature, drawing on a variety of fields for instructors and researchers. Labor Studies majors and minors become part of an existing interdisciplinary research community with strong ties to researchers and teachers in the social sciences and professional schools.

## Undergraduate Major

### Labor Studies BA

The Labor Studies major offers an interdisciplinary approach to the study of inequality at work and in the community. The program prepares undergraduates for a wide range of careers including but not limited to labor relations; human resource management; human rights, labor and community organizing; business; law; domestic and international government work; nonprofit management; organizational leadership; economic forecasting; education; social work; and social welfare. To be admitted to the Labor Studies major, students must have a

minimum grade point average of 2.5 and must have completed all non-language Labor Studies preparation for the major courses. Students must complete an application process, and file a petition to be admitted for the major at the program office.

## Capstone Major

The Labor Studies major is a designated capstone major. Undergraduate students fulfill a research-intensive capstone course or service learning experience in their senior year.

## Learning Outcomes

The Labor Studies major has the following learning outcomes:

- Demonstrated familiarity and competence in a range of interdisciplinary methodologies and approaches
- Demonstrated knowledge of the field of labor studies acquired through coursework
- Demonstrated familiarity with dynamics of social movements through study and/or experience
- Demonstrated ability to conceive and execute an original research project, either individually or in a research group
- Demonstrated ability to communicate research findings to academic and nonacademic audiences

## Entry to the Major

### Admission

To be admitted to the Labor Studies major, students must have a minimum grade point average of 2.5 and must have completed all non-language Labor Studies preparation for the major courses. Students must complete an application process, and file a petition to be admitted for the major at the program office.

### Transfer Students

Transfer applicants to the Labor Studies major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one interdisciplinary labor history or one social structure and contemporary conditions course related to labor and/or social movements.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Labor Studies 10 and two lower-division courses selected from African American Studies 1, M5, Asian American Studies 10, 20, 40, 50, Chicana/o and Central American Studies 10B, Gender Studies 10, Geography 4, History 2B, 8B, 12A, 12B, 12C, Honors Collegium 82, Political Science 60, Public Policy 10A, 10B, Sociology M5, 51, Spanish 44; or Labor Studies M1A, M1B, M1CW.

### The Major

*Required Core Course (4 units):* Labor Studies 101.



**Elective Courses (36 units):** Nine courses (36 units), at least four (16 units) of which must be from labor studies; the remaining five courses (20 units) may be selected from African American Studies CM113XP, M173, Asian American Studies 113, M116, Chicana/o and Central American Studies M125, M127, M128, M129, Economics 150, 151, Gender Studies 102, M137E, M163, History 141B, 146A, M146B, 146C, M150C, Labor Studies M114C, M116, M117, M119, M121, M122, M123, M125, 126, M127, M128, M134XP, M136, 140, M144, M149, 152, M165, M166A, M166B, M166C, M167, 168, M170 through 177, 179A, 179B, M180, 181, 182, 187, 188, 191A, 194A, 194B, 195A, 195B, 199, Political Science 116A, M180A, Sociology 157, M163, 171, 173.

**Capstone Research and/or Community-Engaged/Internship Experience (8 units):** During their senior year, students must complete research-intensive capstone courses, community-engaged/internship experiences, or a combination of both, selected from Labor Studies 191A, 194A, 194B, 195A, 195B, 199, or an approved internship through the Center for Community Learning.

## Policies

### Preparation for the Major

Students may petition, prior to enrollment in the course, to apply other topical lower-division courses with substantial labor-related content.

### The Major

Students may petition, prior to enrollment in the course, to apply other topical upper-division courses with substantial labor-related content.

Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

## Undergraduate Minor

### Labor Studies Minor

The Labor Studies minor augments study in a traditional field. Students are required to complete both a departmental major and this minor. The faculty adviser certifies completion of the program.

### Admission

To enter the minor, students must be in good academic standing, have a 2.5 grade-point average or better, have completed 45 units, and file a petition and meet with the faculty adviser and [minor coordinator](#) in 9244 Bunche Hall, 310-206-0812. Students are encouraged to meet early with the academic adviser to declare the minor and design a coherent program of coursework.

### The Minor

**Required Core Course (4 units):** Labor Studies 101.

**Required Elective Courses (24 units minimum):** Six courses, with no more than two lower-division courses (8 units), selected from African American Studies CM113XP, M173, Asian American Studies 113, M116, Chicana/o and

Central American Studies M125, M127, M128, M129, Economics 150, 151, Gender Studies 102, M137E, M163, History 141B, 146A, M146B, 146C, M150C, Labor Studies M1A, M1B, M1CW, 10, M114C, M116, M117, M119, M121, M122, M123, M125, 126, M127, M128, M134XP, M136, 140, M144, M149, 152, M165, M166A, M166B, M166C, M167, 168, M170 through 177, 179A, 179B, M180, 181, 182, 187, 188, 191A, 194A, 194B, 195A, 195B, 199, Political Science 116A, M180A, Sociology 157, M163, 171, 173.

## Policies

Students may petition, prior to enrollment in the course, to apply other topical courses with substantial labor-related studies content.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have a minimum grade of C (2.0) in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Labor Studies

### Lower-Division Courses

**M1A-M1B-M1CW. Work, Labor, and Social Justice in U.S. (6–6–6)** (Formerly numbered Labor and Workplace Studies M1A-M1B-M1CW.) (Same as Clusters M24A-M24B-M24CW.) Course M1A is enforced requisite to M1B, which is enforced requisite to M1CW. Limited to first-year freshmen. Letter grading. **M1A-M1B.** Lecture, three hours; discussion, two hours. Exploration of ways in which work has been transformed over last century, impact of this transformation on working people, and role of labor movement as force for social justice. **M1CW.** Special Topics. Seminar, three hours. Enforced requisite: course M1B. Topics include labor law/history, gender, race, and workplace. Satisfies Writing II requirement.

**10. Introduction to Labor and Workplace Studies. (5)** (Formerly numbered Labor and Workplace Studies 10.) Lecture, three hours; discussion, one hour. Assumptions about work, including why some work is favored, whether those with good jobs really are better people than those without, and how this understanding of work and value came to be common sense. Unpacking of these and other assumptions about work, value, and power, with focus on low-wage workers, their communities, and their place in contemporary society. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for

maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Introduction to Labor Studies Research. (4)** Seminar, three hours. Designed for freshmen/sophomores. Study of current topics and particular research methods in labor studies through readings and other assignments at introductory level. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Introduction to Labor and Social Movements in Los Angeles. (4)** (Formerly numbered Labor and Workplace Studies 101.) Lecture, three hours; discussion, one hour. Students gain exposure to concepts of social justice, social movements, and workers and labor issues in context of global city of Los Angeles. In-depth examination of experience of workers and role of labor movement in Los Angeles, both historically and currently. Topics include changing organization of work in U.S. and reconfiguration of employment relationships; response of labor movement, historically and in present, to managerial initiatives; way in which organized labor has handled issues of class, race, ethnicity, gender, and immigration status; and challenges facing workers in 21st century and their institutional responses in Los Angeles. P/NP or letter grading.

**M105. American Working Class Movements. (4)** (Same as History M146B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Major episodes in social, trade union, and cultural history of American working class from Colonial times to present, with emphasis on both organized and unorganized labor, history of Knights of Labor, AFL-CIO, and development of labor politics. P/NP or letter grading.

**M108. Common Thread: Garment Workers Past, Present, Future. (4)** (Same as Chicana/o and Central American Studies M128C and Gender Studies M169.) Lecture, three hours. Study blends frameworks from economics, labor history, and ethnic studies to offer in-depth exploration of lives and experiences of garment industry workers from early 19th century to present. In contrast to traditional narratives, study locates garment workers—majority of whom are immigrant women—at vanguard of U.S. labor movement, showing how they pioneered new forms of worker education and other social welfare programs, and became leaders in fight for women's, civil, and immigrant rights. Exploration of garment work relationship to American culture, tracing how sweatshop became symbol of worker exploitation, how popular culture and fashion trends impacted lived realities of workers in those shops, and how racial and gendered expectations shaped public perceptions of garment workers. By doing so, study reveals garment work to be central thread that ties together histories of global trade, industrialization, gender and sexuality, immigration, radicalism, unionization, and American imperialism. P/NP or letter grading.

**M114C. African American Political Thought. (4)** (Formerly numbered Labor and Workplace Studies M114C.) (Same as African American Studies M114C and Political Science M180A.) Lecture, three or four hours; discussion, one hour (when scheduled). Intensive introduction to African American political thought, with focus on major ideological trends and political philosophies as they have been applied and interpreted by African Americans. Debates and conflicts in black political thought, historical contest of African American social movements, and relationship between black political thought and major trends in Western thought. P/NP or letter grading.



**M115. We Gone Be Alright: Developing Next Generation of Black Organizers.** (4) (Same as African American Studies M115.) Seminar, four hours. Learning from and building on Black labor and community organizing traditions, students develop skills and mindsets needed for transformative leadership. Students connect with leaders of community organizations, student organizers, and prepare for more intensive community-based work. P/NP or letter grading.

**M116. Asian American Social Movements.** (4) (Formerly numbered Labor and Workplace Studies M116.) (Same as Asian American Studies M116.) Lecture, three hours. Designed for juniors/seniors. Examination of several dimensions of Asian American social movements, including grassroots, mass movement character, political and social vision, and social and political relevance to current issues. How movement participants linked struggle for change with own personal transformation and growth. P/NP or letter grading.

**M117. Negotiation.** (4) (Formerly numbered Labor and Workplace Studies M117.) (Same as Communication M117.) Lecture, four hours. Art and science of negotiation in securing agreements between independent parties. Theory and practice that underlies successful negotiation. Experiential course in which students learn broad array of negotiation skills, including identifying one's own (and others') communication style, identifying and incorporating components of successful negotiation, and resolving conflict between parties. Letter grading.

**M119. Asian American and Pacific Islander Labor Issues.** (4) (Formerly numbered Labor and Workplace Studies M119.) (Same as Asian American Studies M119.) Lecture, three hours. Examination of historical and contemporary labor issues in Asian and Pacific Islander American communities, with emphasis on key role that Asian and Pacific Islander American students can play in supporting labor struggles of low-income immigrants. P/NP or letter grading.

**M121. Issues in Latina/Latino Poverty: Mexican and Central American Voices from Los Angeles.** (4) (Formerly numbered Labor and Workplace Studies M121.) (Same as Chicana/o and Central American Studies M121 and Urban Planning M140.) Lecture, four hours. Examination of key issues (work, housing, and neighborhoods) in urban poverty, with particular focus on Mexican and Central American immigrant populations in Los Angeles. Exploration of major theoretical models that explain urban poverty and application of them in comparative context while exploring differences between Mexican and Central American immigrants. Social conditions and forces that help us understand lives of poor people in comparative context while looking at differences between two major Latino-origin populations in Los Angeles. Critical analysis of new forms of urban poverty in contemporary American society. Letter grading.

**M122. Planning Issues in Latina/Latino Communities: Preserving and Strengthening Community Assets in Mexican and Salvadoran Los Angeles.** (4) (Formerly numbered Labor and Workplace Studies M122.) (Same as Chicana/o and Central American Studies M122 and Urban Planning M171.) Lecture, four hours. How community and economic development interact, role of assets in community development, and unique synergies and pitfalls that enable or disable communities from developing to their potential. How to strengthen and how to preserve community resources in Pico-Union neighborhood in Los Angeles. Research entails historical analysis, reviews, interviews, electronic asset mapping, web-based data processing and analysis, oral and written reports, and cyber-based research. Letter grading.

**M123. Chicano/Latino Community Formation: Critical Perspectives and Oral Histories.** (4) (Formerly numbered Labor and Workplace Studies M123.) (Same as Chicana/o and Central American Studies M119.) Lecture, four hours. Analysis of historical formation and development of Chicano/Latino communities in 20th century, with focus on labor, immigration, economic structures, electoral politics, and international dimensions. Letter grading.

**M124. Future of Work in Decarcerated California.** (4) (Same as African American Studies CM166.) Seminar, three hours. Limited to students in Community Scholars program. Exploration of scope of employment and nature of jobs that are attached to current system of mass incarceration in California, with focus on Los Angeles county. Study of history and evolution of carceral system and its relationship to oppression of Black people, poor, and other stigmatized groups. Exploration of history of employment discrimination against Black workers and how successful demand for unionized government jobs (public sector work) evolved as anti-discrimination remedy. Investigation of work, especially by people of color, in existing carceral regimes, and its impact on individual worker wellness and community well-being. Examination of tension between racial justice agendas to decarcerate California and those to prevent downward mobility of workers of color recruited by state to carry out failed policies of war on drugs. P/NP or letter grading.

**CM166B. Future of Work in Decarcerated California II: Applied Research and Policy Analysis for Implementation of Justice Transformation.** (4) (Same as African American Studies CM166B.) Seminar, three hours. Limited to students in Community Scholars program. Requisite: course M124. Second course in two-quarter participatory action research program that partners students with community-based change agents. Study involves project-based learning in groups made up of undergraduate and graduate students and community members. Students contribute to development of collective policy platform that centers recommendations of formerly employed and formerly incarcerated people in broader community vision for transitioning to decarcerated workforce. P/NP or letter grading.

**M125. U.S./Mexico Relations.** (4) (Formerly numbered Labor and Workplace Studies M125.) (Same as Chicana/o and Central American Studies M125.) Lecture, four hours. Examination of complex dynamics in relationship between Mexico and U.S., using political economy approach to study of asymmetrical integration between advanced industrial economies and developing countries. P/NP or letter grading.

**126. Farm Worker Transnational Struggle.** (4) (Formerly numbered Labor and Workplace Studies 126.) Lecture, three hours; discussion, one hour. Focus on historical and contemporary issues farm workers face in restructured economy, and class, racial, and gender dynamics that shape their work experiences and economic and political opportunities in society at large. Study also covers gender, race, and class conflicts in workplace and during collective struggles for equality in contemporary society. Topics include political and cultural legacy of farm workers' struggle in U.S. and its long-lasting impact on labor movement and immigrant workers' and social justice movements. Special focus on assessing and understanding role farm-worker-led labor and civil rights movements have had in promoting multiethnic and multiracial campaigns for workplace and economic justice from cross-border perspective. Students develop theoretical and practical understanding of farm workers' experiences across U.S.-Mexico border, and of legacy of United Farm Workers and other farm worker unions. P/NP or letter grading.

**M127. Farmworker Movements, Social Justice, and United Farm Workers Legacy.** (4) (Formerly numbered Labor and Workplace Studies M127.) (Same as Chicana/o and Central American Studies M127.) Lecture, four hours. Designed for juniors/seniors. Historical and social context of farmworker organizing, including its multiracial origins and its influence on fight for equality of working women. Specific focus on organizing of United Farm Workers and Farm Laborers Organizing Committee, and their relationship to AFL-CIO, other unions, and their influence on Chicano Movement. Letter grading.

**M128. Race, Gender, and U.S. Labor.** (4) (Formerly numbered Labor and Workplace Studies M128.) (Same as Chicana/o and Central American Studies M128.) Lecture, four hours. Designed for juniors/seniors. Introduction to history and organization of labor movement in U.S. and North America. Discussion of race, class, and gender issues raised within move-

ment, and various strategies for social change and economic equity pursued through organized labor and other means. Letter grading.

**M129. Community-Engaged Research Methods.** (4) (Same as Chicana/o and Central American Studies M129 and Public Affairs M117C.) Lecture, four hours. Students are trained in designing, drafting, piloting, and administering new survey focused on transitions to adulthood. Written in collaboration with labor and community partners serving Latinx, Asian Americans and Pacific Islanders, Black, and Indigenous youth and low-wage workers, this survey gathers data on workforce development, labor rights, education, health, mental health, and civic engagement of young people residing in Black, Indigenous, and people of color communities. Students are exposed to historical development of racial statistics, role of racial statistics in contemporary life, and critical quantitative science. Includes testing questions on racial identity and attitudes, gender identity, workforce development, labor rights, healing and wellness, and other topics determined by labor and community partners. P/NP or letter grading.

**M134XP. Engaging Immigrants and Their Families.** (5) (Formerly numbered M134SL.) (Same as Chicana/o and Central American Studies M134XP and Community Engagement and Social Change M134XP.) Lecture, two hours; discussion, two hours; field placement, two hours. Survey and exploration of immigrant landscape in Los Angeles—truly global city acting in part to buffer, settle, and incorporate immigrants in daily life. Focus on civil society to explore multiple forms of interventions and impacts that take place in multiple communities across Los Angeles basin. Service learning partnerships focus on organizations addressing immigration concerns. Letter grading.

**M136. Working Families and Educational Inequalities in Urban Schools.** (4) (Formerly numbered Labor and Workplace Studies M136.) (Same as Education M136.) Seminar, three hours; fieldwork, five hours. Exploration of complex relationship between working-class and poor communities and inequalities in American urban schools. Drawing on multiple disciplinary frameworks that address issues of race, ethnicity, and immigration, schools viewed as sites where inequalities are produced and resisted. Review of history of exclusionary treatment and divergent conceptual frames that educational researchers have used to understand notion of inequality, access to quality public education, and how race, ethnicity, and class affect school experiences for working-class and poor communities. Look inside schools through community service learning opportunity to examine systems, structures, and everyday practices that sustain and reproduce inequality and policies that intend to remedy educational inequalities in urban schools. Opportunity to investigate issues of working-class families and inequalities as they relate to students' own communities and experiences. P/NP or letter grading.

**140. Working It: Women, Work, and Family.** (4) (Formerly numbered Labor and Workplace Studies 140.) Lecture, three hours; discussion, one hour. Examination of working women in U.S. history from 19th-century midwives to 21st-century sex workers through film, oral history, and traditional forms of scholarship. Exploration of personal and work life of women from variety of intersectional categories including class, race, ethnicity, sexuality, and immigration status with focus on systems that have shaped workplace experiences for women over time, including gender discrimination, sexual harassment, public policy, unionization, and reproductive health. Special attention given to strategies women have utilized to shape their work experience, and to improve working conditions for themselves and their working-class sisters. P/NP or letter grading.

**M143. Class and Gender in Care Work.** (4) (Same as Asian American Studies M162, Chicana/o and Central American Studies M128B, and Gender Studies M140C.) Lecture, three hours; discussion, one hour. Examination of how gender, race, class, and citizenship status shape domestic labor in U.S. Examination of domestic worker experiences through film, fiction, and traditional scholarship. Investigation of why domestic work is in high demand, who employs do-

mestic workers, and why immigrants and women of color make up large percentage of this workforce. Exploration of how domestic workers navigate pay and working conditions, and how they build community and family networks in shadows of their privileged employers. P/NP or letter grading.

**M144. Women's Movement in Latin America. (4)** (Formerly numbered Labor and Workplace Studies M144.) (Same as Chicana/o and Central American Studies M144 and Gender Studies M144.) Lecture, four hours. Course on women's movements and feminism in Latin America and Caribbean to examine diverse social movements and locations from which women have launched political and gender struggles. Discussion of forms of feminism and women's consciousness that have emerged out of indigenous rights movements, environmental struggles, labor movements, Christian-based communities, peasant and rural organizing, and new social movements that are concerned with race, sexuality, feminism, and human rights. Through comparative study of women's movements in diversity of political systems as well as national and transnational arenas, students gain understanding of historical contexts and political conditions that give rise to women's resistance, as well as major debates in field of study. P/NP or letter grading.

**M149. Media: Gender, Race, Class, and Sexuality. (5)** (Formerly numbered Labor and Workplace Studies M149.) (Same as Communication M149 and Gender Studies M149.) Lecture, four hours; activity, one hour. Limited to junior/senior Communication and Gender Studies majors and Labor Studies minors. Examination of manner in which media culture induces people to perceive various dominant and dominated and/or colonized groups of people. Ways in which women, gay, lesbian, bisexual, transgendered, racial, and ethnic marginalized peoples, class relations, and other subaltern or subordinated groups are presented and often misrepresented in media. Investigation and employment of practical applications of communications and feminist theories for understanding ideological nature of stereotyping and politics of representation through use of media, guest presentations, lectures, class discussions, and readings. Introduction to theory and practice of cultural studies. Letter grading.

**152. Work, Social Justice, and Arts. (4)** (Formerly numbered Labor and Workplace Studies 152.) Lecture, three hours; field visit. Analysis of how art (in cartoons, poster art, murals, photography, film, visual art, theater, performance, dance, and music) has been influential in popular movements for economic, racial, and social justice by artists, workers' groups, American labor movement, and other social movements such as civil rights, women's rights, immigrant rights, and Black Lives Matter. Reflection on different discourses of art-making that have been used in specific historical struggles (1920s, Great Depression of 1930s, 1960s, to present). Examination of what Los Angeles has to offer in terms of art, labor, and social justice movement art-making. Students visit labor, social justice, or arts organization in L.A. that is focused on themes of work, labor, and art. Exploration of spectrum of art forms (dance, music, sculpture, theater, visual art, film, museum curation) that have been produced and reproduced as reflections of work, labor, and social justice struggles in U.S. P/NP or letter grading.

**153. Stories of Struggle: Work, Class, and Narrative in Contemporary America. (4)** (Formerly numbered Labor and Workplace Studies 153.) Lecture, three hours. Overview of contemporary working narratives. Investigation of how working-class Americans from diverse backgrounds have narrated their struggles with poverty, education, work, parenthood, bodily suffering, and war. Inquiry into what readers can learn from these struggles as students, writers, and activists. Emphasis on 21st-century narratives. Analysis of variety of genres, including poetry, lyrics, short stories, journalism and reportage, novels, memoir, and autobiography, for how they portray working class people and what they offer working class movement culture. Consideration of class as intersectional category of experience along with race, gender, and sexuality. Students read narratives about class and work, and

contribute to body of working class literature through memoir, fiction, poetry, or journalism. P/NP or letter grading.

**154. Storytelling for Activists and Organizers. (4)** Lecture, three hours. Equally at home around campfire or in boardroom, storytelling is one of earliest and most intrinsic forms of human expression; and powerful tool for human connection. Through stories, people share aesthetic, pedagogical, recreational, and communal knowledge; build empathy and trust; and work together to forge more just society. Pushing beyond transactional storytelling model, study asks how stories—traditional, historical, personal, and political—allow people to connect with one another. Premise is that stories are basis of community solidarity. Study also asks how labor activists and organizers might harness power of storytelling in service of social justice, and equitable and diverse society. Introduction to elements of effective storytelling. Analysis and investigation of stories in contemporary American life. Students practice telling stories in collaborative, workshop-style environment. P/NP or letter grading.

**M165. Sociology of Race and Labor. (4)** (Formerly numbered Labor and Workplace Studies M165.) (Same as African American Studies M165 and Sociology M165.) Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Exploration of relationship between race/ethnicity, employment, and U.S. labor movement. Analysis of underlying racial divisions in workforce and how they evolved historically. Consideration of circumstances under which workers and unions have excluded people of color from jobs and unions, as well as circumstances under which workers and unions have organized people of color into unions in efforts to improve their wages and working conditions. Impact of globalization on these dynamics. P/NP or letter grading.

**M166A. Immigrant Rights, Labor, and Higher Education. (4)** (Formerly numbered Labor and Workplace Studies M166A.) (Same as Asian American Studies M166A and Chicana/o and Central American Studies M156A.) Lecture, three hours; discussion, one hour. New immigrant rights movement, with particular attention to labor and higher education. Overview of history of immigrant rights movement and examination of development of coalition efforts between labor movement and immigrant rights movement nationally and locally. Special focus on issue of immigrant students in higher education, challenges facing undocumented immigrant students, and legislative and policy issues that have emerged. Students conduct oral histories, family histories, research on immigration and immigrant rights, write poetry and spoken word about immigrant experience, and work to collectively develop student publication on immigrant students in higher education. P/NP or letter grading.

**M166B. Research on Immigration Rights, Labor, and Higher Education. (4)** (Formerly numbered Labor and Workplace Studies M166B.) (Same as Asian American Studies M166B and Chicana/o and Central American Studies M156B.) Seminar, two hours. Requirement: course M166A. Expansion of research conducted by students in course M166A involving oral histories, research on immigration/labor/higher education, and evaluation of legislation and legal issues impacting undocumented students. Letter grading.

**M166C. Research on Immigrant Students and Higher Education. (4)** (Formerly numbered Labor and Workplace Studies M166C.) (Same as Asian American Studies M166C and Chicana/o and Central American Studies M156C.) Seminar, three hours. Enforced requisites: courses M166A, M166B. Expansion of research conducted by students in courses M166A and M166B involving oral histories, research on immigration/labor/higher education, and evaluation of legislation and legal issues impacting undocumented students. Designed around class project, where students work on showcasing all material collected throughout year. Letter grading.

**M167. Worker Center Movement: Next Wave Organizing for Justice for Immigrant Workers. (4)** (Formerly numbered Labor and Workplace Studies M167.) (Same as African American Studies M167, Asian American Studies M163, and Chicana/o and Central American Studies M130.) Seminar, three hours. Devel-

opment of theoretical and practical understanding of worker center movement, with focus on historical factors that have led to emergence and growth of worker centers. Role of worker centers in promoting multi-ethnic and multiracial campaigns for workplace and economic justice. Transnational cross-border solidarity issues and rights of undocumented workers. P/NP or letter grading.

**168. Law and Politics of Immigration: Migrants and Inevitable Evolution of Collective and Individual Rights. (4)** (Formerly numbered Labor and Workplace Studies 168.) Lecture, three hours. With immigration and rights of migrants at center of current political and legal debates throughout world, study offers critical introduction to inevitable evolution of law and policy resulting from—and in reaction to—movement of immigrants. Endows students with wide array of analytical tools with which to engage current political debates about immigration. Using historical and modern texts, while incorporating elements of art, popular culture, and storytelling, study encourages discussion, debate, and analysis about immigrants' role in development of rights and modern political debates about immigration. Exploration of themes of inclusion, exclusion, integration, and multiculturalism. Students describe shortcomings of status-quo policies while also imaging and prescribing arguments about where law can and should go. P/NP or letter grading.

**M170. Improving Worker Health: Social Movements, Policy Debates, and Public Health. (4)** (Formerly numbered Labor and Workplace Studies M170.) (Same as Community Health Sciences CM170.) Lecture, three hours; fieldwork, two hours. Examination of intersection between work, health, and environment, analysis of social causes of health disparities, investigation of historical trends and social movements, interpretation of current policy debates, and development of innovative interventions. P/NP or letter grading.

**M171. Labor and Economic Development. (4)** (Formerly numbered Labor and Workplace Studies M171.) (Same as Urban Planning CM172.) Lecture, three hours. Exploration of economic development and identification of ways that labor and labor unions directly and indirectly influence and shape economic development. Wide range of roles that labor plays, and could play, in promoting and supporting economic development for all. Letter grading.

**M173. Nonviolence and Social Movements. (4)** (Formerly numbered Labor and Workplace Studies M173.) (Same as African American Studies M173 and Chicana/o and Central American Studies M173.) Lecture, three hours; discussion, one hour. Overview of nonviolence and its impact on social movements both historically and in its present context in contemporary society, featuring lectures, conversations, films, readings, and guest speakers. Exploration of some historic contributions of civil rights struggles and role of nonviolent action throughout recent U.S. history. Examination of particular lessons of nonviolent movements as they impact social change organizing in Los Angeles. P/NP or letter grading.

**174. Labor and Employment Law. (4)** (Formerly numbered Labor and Workplace Studies 174.) Lecture, three hours. Using combination of cases, statutes, news articles, films, and oral history, introduction to history of organized labor; current debates and trends; and basic structure of laws, regulations, and cases that govern organizing to improve workplace conditions. Study covers primary federal acts and court cases that govern strikes, picketing, boycotts, and union elections. Examination of challenges to organized labor from inside and outside labor movement, including right-to-work legislation; dismantling of public sector unions; and racism, sexism, and anti-immigrant sentiment in labor movement. Emphasis on case studies. Topics include new trends in labor organizing. Offers mix of guest speakers, oral history, case excerpts, scholarly articles, news articles and blogs, videos, small-group work, and community engagement. P/NP or letter grading.

**M175. Agitational Communication. (4)** (Formerly numbered Labor and Workplace Studies M175.) (Same as Communication M165.) Lecture, four hours; discussion, one hour (when scheduled). Theory of agi-

tation; agitation as force for change in existing institutions and policies in democratic society. Intensive study of selected agitational movements and technique and content of their communications. Letter grading.

**M176. Visual Communication and Social Advocacy. (4)** (Formerly numbered Labor and Workplace Studies M176.) (Same as Communication M176.) Lecture, four hours. Visual communication reaches diverse audiences in communicating major social and political topics. Cartoons, posters, murals, and documentary photography have had powerful world impact. Survey of all four genres of visual communications as features of modern mass media. Letter grading.

**177. Spirituality, Mindfulness, Self-Care, and Social Justice. (4)** (Formerly numbered Labor and Workplace Studies 177.) Seminar, three hours. Exploration of role of spirituality and mindfulness practice in labor and immigrant rights movements. Focus on teachings of St. Francis of Assisi, Mahatma Gandhi, Martin Luther King, Thich Nhat Hanh, and other spiritual leaders. Uses specific case studies and workshop experiences. Includes videos and guest lectures by scholars and activists who integrate their spirituality into their daily work. P/NP or letter grading.

**179A. Neoliberalism, Social Justice, and Community Organizing. (4)** (Formerly numbered Labor and Workplace Studies 179A.) Lecture, three hours. Study of intersection of neoliberalism, democracy, and rise of social justice movements primarily in U.S. This offers in-depth, theoretically rigorous, and empirically-based understanding of dynamics that have produced specific form of crisis that envelopes contemporary politics. Focus on understanding and explaining development and current structures of neoliberalism as both ideological frame and form of governance. Examination of some of main works on democratic theory and their relationship to issue of social justice that demonstrate how specific pattern of development of neoliberalism in U.S. since 1980 has undermined democratic governance and produced conditions that have deepened levels of inequality. Examination of emergence of grassroots politics that have organized around issues that challenge or contest neoliberal dominance and attempt to reassert principles of democratic inclusion through their struggles for social change. P/NP or letter grading.

**179B. Doing Democracy: Social Movements, Grassroots Politics, and Community Organizing. (4)** (Formerly numbered Labor and Workplace Studies 179B.) Lecture, three hours. Focus on community organizing and social movements as mechanisms that have been adopted by marginalized or excluded sectors and groups of society to promote their interests and express their needs. Identification of fundamental characteristics of effective and responsive democratic regime. Summarization of critiques that describe means by which those elements are being undermined in current period. Focus on those efforts to promote social justice as basis for inclusive and responsive form of popular sovereignty through politics of social movements and community organizing. Study of various forms of social movements and different models of and approaches to community organizing and their relationship to democratic governance. P/NP or letter grading.

**M180. Southern California Regional Economy. (4)** (Formerly numbered Labor and Workplace Studies M180.) (Same as Urban Planning CM137.) Lecture, three hours. Introduction to regional economy, with emphasis on Los Angeles. Key economic sectors, labor market composition, and review of conflicting portrayals depicting dynamics of region. Two all-day bus tours of key economic regions and guest lectures by regional experts included. Letter grading.

**181. Los Angeles Labor and Social Science Research Principles, Methods, and Practices. (4)** (Formerly numbered Labor and Workplace Studies 181.) Lecture, three hours. Introduction to basic social science research methods. Through combination of lectures, key readings, and participation in hands-on research project, students develop understanding of critical debates regarding role of research in socioeconomic context that impacts workers and their organizations and communities at large. Introduction to sev-

eral research method techniques that are highly effective in producing sound and rigorous studies about and for labor movement, including important data that can be used for policy analysis and political action. Special emphasis given to understanding research that has supported different labor movements. P/NP or letter grading.

**182. Oral History for Social Change. (4)** (Formerly numbered Labor Studies 182A.) Lecture, three hours. Introduction to field of oral history and its role in social movements. Students receive hands-on experience through independent fieldwork where they design, execute, and process oral history research project on contemporary topics such as immigration, work, housing, incarceration, and social movements. Through reading and discussion students learn oral history methods and theory along with ethical approaches to working with human subjects. Emphasis on innovative uses of oral history interviews that bring silenced voices to wide public audience for social justice outcomes. No prior knowledge or experience with interviewing and processing required. P/NP or letter grading.

**187. Special Courses in Labor and Workplace Studies. (4)** (Formerly numbered Labor and Workplace Studies 187.) Lecture, three hours; discussion, one hour. Program-sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit. P/NP or letter grading.

**188. Special Courses in Labor and Workplace Studies. (4)** (Formerly numbered Labor and Workplace Studies 188.) Seminar, four hours. Program-sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**M190A. Introduction to Community-Engaged Research. (4)** (Formerly numbered Labor and Workplace Studies M190A.) (Same as Community Engagement and Social Change M190A.) Seminar, three hours. Enrollment by consent of instructor. Designed for students participating in Astin Community Scholars Program. Introduction of principles of community-engaged research. Exploration of intentions behind

doing research with community residents and organizations, our responsibilities when conducting research in historically disenfranchised communities, and relationship between socially-just research outcomes and methodologies. P/NP or letter grading.

**M190B. Community-Engaged Research in Practice: Community Scholars. (4)** (Same as Community Engagement and Social Change M190B.) Seminar, three hours. Requisite: course M190A. Enrollment by consent of instructor. Designed for students participating in Astin Community Scholars Program. Students learn from faculty, community stakeholders, graduate students, and key academic experts about emerging organizing models, best practices, and changing landscape in chosen topic. Provides students with opportunity to work with leaders from key community and labor organizations across Los Angeles on six-month dynamic participatory research project. Focus on current topic affecting Angelenos and neighboring communities. Key outcomes may include production of policy reports, popular education materials, and/or book publication by UCLA Labor Center and collaborative partners. Primary focus on engaging policy makers and other change agents. P/NP or letter grading.

**M190C. Community-Engaged Research in Practice: Community Scholars. (4)** (Same as Community Engagement and Social Change M190C.) Seminar, three hours. Requisites: courses M190A, M190B. Enrollment by consent of instructor. Designed for students participating in Astin Community Scholars Program. Students learn from faculty, community stakeholders, graduate students, and key academic experts about emerging organizing models, best practices, and changing landscape in chosen topic. Provides students with opportunity to work with leaders from key community and labor organizations across Los Angeles on six-month dynamic participatory research project. Focus on current topic affecting Angelenos and neighboring communities. Key outcomes may include production of policy reports, popular education materials, and/or book publication by UCLA Labor Center and collaborative partners. Primary focus on engaging policy makers and other change agents. P/NP or letter grading.

**191A. Labor Studies: Research Principles, Methods, and Practices. (4)** (Formerly numbered 191.) Seminar, three hours. First part of Labor Studies capstone senior research project series with focus on fundamentals of social science research methods. Through lectures, key readings, and in-class exercises, students develop understanding of critical debates regarding role of research within socioeconomic and political contexts that impact workers, organizations, and communities at large. Overview of various research methods and techniques, literature review, data collection, analysis, and final paper. Focus on workers, labor and immigrant rights movements, policy initiatives, and/or political action in Los Angeles as research lens. P/NP or letter grading.

**191B. Labor Studies: Research in Action. (4)** Seminar, three hours; fieldwork, five hours. Requisite: course 191A. Second part of Labor Studies capstone senior research project series with focus on research methods in action. Through lectures, key readings, in-class exercises, and field work, students develop understanding capstone research project including refined research question(s), advanced literature review, research design and plan, data collection and analysis, and final paper outline. Continued development of applied qualitative and quantitative research skills with focus on workers, labor and immigrant rights movements, policy initiatives, and/or political action in Los Angeles as research lens. P/NP or letter grading.

**194A. Research Group Seminars: Labor Summer Research Program. (4)** (Formerly numbered Labor and Workplace Studies 194A.) Seminar, three hours. Enforced corequisite: course 194C. Designed for undergraduate students who are part of Labor Summer Research program. Discussion of qualitative applied research methods used by union researchers and scholars engaged in labor relations and workplace studies. Through combination of lectures, key readings, and active participation in hands-on research fieldwork, development of understanding of critical

debates regarding role of research and socioeconomic contexts that impact low-wage workers and their families. May be repeated for credit. Offered in summer only. P/NP or letter grading.

**194B. Research Group Seminars: Labor and Workplace Studies. (4)** (Formerly numbered Labor and Workplace Studies 194B.) Seminar, three hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field of labor studies or of research of faculty members and/or students. May be repeated for credit. P/NP or letter grading.

**194C. Field Research Group Seminar. (4)** Seminar, one hour; fieldwork, 15 hours. Designed for undergraduate students who are part of Labor Summer Research program. Offers opportunity for immersion in applied research in field of labor studies. Field research and analysis contributing to research project. Students learn how to conduct surveys, analyze data, and contribute their analysis to research brief. Students develop understanding of critical debates regarding role of research and policy on selected topic. May be repeated for credit. Offered in summer only. P/NP or letter grading.

**195A. Community or Corporate Internships in Labor and Workplace Studies. (4)** (Formerly numbered Labor and Workplace Studies 195A.) Tutorial, one hour; fieldwork, 15 hours. Enforced corequisite: course 194A. Limited to juniors/seniors. Internship in supervised setting in community agency, labor union, or other organization concerned with work and employment issues. Placements to be arranged by instructor. Students meet on regular basis with instructor and provide periodic written reports on their experience. May be repeated for credit. Individual contract with supervising faculty member required. Offered in summer only. P/NP or letter grading.

**195B. Community or Corporate Internships in Labor and Workplace Studies. (2 to 5)** (Formerly numbered Labor and Workplace Studies 195B.) Tutorial, to be arranged; internship, up to 15 hours. Limited to juniors/seniors. Internship in supervised setting in community agency, labor union, or other organization concerned with work and employment issues. Placements to be arranged by instructor. Students meet on regular basis with instructor and provide periodic written reports on their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**195CE. Worker and Community Organizing for Social Change: Research Justice Internship. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Students work intensively with community organization on structured activity that supports organization's mission and student's intellectual development. Students meet regularly with graduate student instructor to reflect on internship experience, assigned readings, and reflective writing assignments. Students complete final paper that links research and experience. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major; units applied must be taken for letter grade. Letter grading.

**199. Directed Research in Labor and Workplace Studies. (2 to 4)** (Formerly numbered Labor and Workplace Studies 199.) Tutorial, one hour. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** (Formerly numbered Labor and Workplace Studies 375.) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# LATIN AMERICAN STUDIES

*Interdepartmental Program  
College of Letters and Science*

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Los Angeles, CA 90095-1487

[Latin American Studies](#)  
310-206-6571  
[Program e-mail](#)

Rubén Hernández-León, PhD, *Co-Chair*  
Bonnie Taub, PhD, *Co-Chair*

## Faculty Committee

Patricia Arroyo Calderón, PhD (*Spanish and Portuguese*)

Stephen A. Bell, PhD (*Geography, History*)

Adriana J. Bergero, PhD (*Spanish and Portuguese*)

Charlene Villaseñor Black, PhD (*Art History, Chicana/o and Central American Studies*)

Verónica Cortínez, PhD (*Spanish and Portuguese*)

Robin L.H. Derby, PhD (*History*)

David E. Hayes-Bautista, PhD (*Health Policy and Management, Medicine-General Internal*)

Susanna B. Hecht, PhD (*Environment and Sustainability, Geography, Urban Planning*)

Rubén Hernández-León, PhD (*Sociology*)

Efraín Kristal, PhD (*Comparative Literature, Spanish and Portuguese*)

Steven J. Loza, PhD (*Ethnomusicology*)

Elizabeth A. Marchant, PhD (*Comparative Literature, Gender Studies*)

Cecilia Menjivar, PhD (*Sociology*)

José Luiz Passos, PhD (*Spanish and Portuguese*)

Fernando Pérez-Montesinos, PhD (*History*)

William R. Summerhill, PhD (*History*)

Bonnie Taub, PhD (*Anthropology, Community Health Sciences*)

Kevin B. Terraciano, PhD (*History*)

Maarten H. Van Delden, PhD (*Spanish and Portuguese*)

## Overview

For more than 60 years, UCLA has been a leader among U.S. universities in teaching and research on Latin America. The Master of Arts (MA) program in Latin American Studies offers graduate students the unique opportunity to pursue interdisciplinary research. Students design their own programs by choosing courses from various fields of study that focus on Latin America. Students can work with leaders in their chosen fields of study. The program features more than 100 affiliated faculty from multiple departments in the humanities, social sciences, fine arts, and several professional schools.

## Undergraduate Study

Information on the undergraduate program in this discipline, which offers a major and a minor in Latin American Studies, can be found in the [International and Area Studies](#) section.

## Graduate Majors

### Latin American Studies MA

Students are able to complete the degree in one to two years, and can choose to write a final thesis or submit three revised seminar papers in partial satisfaction of the degree.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Articulated Degree Programs

Articulated degree programs permit no credit overlap; students must complete degree requirements separately for each degree.

- Latin American Studies MA/Master of Education
- Latin American Studies MA/Master of Library and Information Science
- Latin American Studies MA/Master of Public Health

### Concurrent Degree Programs

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Latin American Studies MA/Master of Business Administration
- Latin American Studies MA/Master of Urban and Regional Planning

## Latin American Studies

### Graduate Courses

**205. Latin Americanist Scholarship. (4)** Lecture, three hours. Panoramic introduction to methods and issues in various disciplines that study Latin America, with guest lecturers from various fields. (Latin American Studies core course.)

**250B. Interdisciplinary Seminar: Latin American Studies. (4)** Seminar, three hours. Problem-oriented seminar on critical areas stressed in University's cooperative programs in Latin America.

**250C. Interdisciplinary Topics in Latin American Studies. (4)** Reading knowledge of Spanish or Portuguese normally required. Seminar devoted to selected topics of an interdisciplinary nature.

**M260. Health and Culture in Americas. (4)** (Same as Anthropology M233R and Community Health Sciences M260.) Lecture, three hours. Recommended requisite: Community Health Sciences 132. Health issues throughout Americas, especially indigenous/Mestizo Latin American populations. Holistic approach covering politics, economics, history, geography, human rights, maternal/child health, culture. Letter grading.



**M262. HIV/AIDS and Culture in Latin America. (4)** (Same as Community Health Sciences M250.) Seminar, three hours. Exploration of cultural, political, and public health context for people living with and at risk for HIV/AIDS and their families in Latin America. Public health aspects, including epidemiology, comorbidity concerns and community interventions, medical anthropological study of experience of those impacted, and grass-roots responses, as well as political/economic context addressing poverty and structural violence. Letter grading.

**M264. Latin America: Traditional Medicine, Shamanism, and Folk Illness. (4)** (Same as Anthropology M233Q and Community Health Sciences M264.) Lecture, three hours. Recommended preparation: Community Health Sciences 132, bilingual English/Spanish skills. Examination of role of traditional medicine and shamanism in Latin America and exploration of how indigenous and mestizo groups diagnose and treat folk illness and Western-defined diseases with variety of health-seeking methods. Examination of art, music, and ritual and case examples of religion and healing practices via lecture, film, and audiotape. Letter grading.

**M268A-M268B. Seminars: Recent Latin American History. (4)** (Same as History M268A-M268B.) Seminar, three hours. Course M268A is requisite to M268B. Reading knowledge of Spanish and Portuguese normally required. Seminar devoted to selected topics of interdisciplinary nature. In Progress (M268A) and letter (M268B) grading.

**291A-291B. Variable Topics in Latin American Studies. (4-4)** Seminar, three hours. Selected topics on Latin America. May be repeated for credit with topic change. S/U or letter grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. May be repeated, but only 4 units may be applied toward the minimum graduate course requirement. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination. (4)** Tutorial, to be arranged. Ordinarily taken only during term in which student is being examined. S/U grading.

**598. Research for and Preparation of MA Thesis. (4)** Tutorial, to be arranged. Only 4 units may be applied toward minimum graduate course requirement. S/U grading.

Stephen M. Bainbridge, JD, MS (*William D. Warren Professor of Law*)

LaToya J. Baldwin Clark, JD, MA, PhD, *Acting*  
Steven A. Bank, JD (*Paul Hastings Endowed Professor of Business Law*)

Stuart A. Banner, JD (*Norman Abrams Endowed Professor of Law*)

Mario Biagioli, MFA, MA, PhD

William C. Boyd, JD, MA, PhD (*Michael J. Klein Professor of Law*)

Taimie L. Bryant, JD, MA, PhD

Daniel J. Bussel, JD

Devon W. Carbedo, JD (*Honorable Harry Pregerson Endowed Professor of Law*)

Ann E. Carlson, JD (*Shirley Shapiro Professor of Environmental Law*)

Kimberly A. Clausing, MA, PhD (*Eric M. Zolt Professor of Tax Law and Policy*)

Beth A. Colgan, JD

Kimberly W. Crenshaw, JD, LLM (*Promise Institute Professor of Human Rights*)

Scott L. Cummings, JD (*Robert Henigson Endowed Professor of Legal Ethics*)

Joshua F. Dienstag, MA, PhD (*Shapiro Family Endowed Professor of Modern Political Theory*)

Sharon Dolovich, JD, PhD

Ingrid V. Eagly, JD

Blake E.B. Emerson, JD, MA, MPhil, PhD

Joseph R. Fishkin, JD, MPhil, DPhil

Cary C. Franklin, JD, MSt, DPhil (*McDonald/Wright Professor of Law*)

Meirav Furth-Matzkin, LLM, SJD, *Acting*

Fanna Gamal, JD, *Acting*

Stephen A. Gardbaum, JD, CPE, MSc, PhD (*Stephen Yeazell Endowed Professor of Law*)

Laura E. Gómez, JD, MA, PhD (*Rachel F. Moran Endowed Professor of Law*)

Mark D. Greenberg, JD, DPhil (*Michael H. Schill Endowed Professor of Law*)

Ariela J. Gross, JD, PhD

Cheryl I. Harris, JD (*Rosalinde and Arthur Gilbert Foundation Endowed Professor of Civil Rights and Civil Liberties*)

Richard L. Hasen, JD, MA, PhD

Barbara Herman, MA, PhD (*Gloria and Paul Griffin Professor of Philosophy*)

Jill R. Horwitz, JD, MA, PhD (*David Sanders Professor of Law and Medicine*)

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Sung Hui Kim, JD, MA

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Douglas G. Lichtman, JD

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David W. Marcus, JD

Mark P. McKenna, JD

Jon D. Michaels, JD, MA

Hiroshi Motomura, JD (*Susan Westerberg Prager Endowed Professor of Law*)

Neil W. Netanel, JD, JSD (*Pete Kameron Endowed Professor of Law*)

Jason S. Oh, JD (*Lowell Milken Professor of Law*)

James J. Park, JD

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Sunita Patel, JD, *Acting*

Mark A. Peterson, AM, PhD

Kal Raustiala, JD, PhD (*Promise Institute Professor of Comparative and International Law*)

Fernán Restrepo, JSD, LLB, MSc, LLM, PhD, *Acting*

Angela R. Riley, JD

James Salzman, JD, MSc

Richard H. Sander, JD, MA, PhD (*Jesse Dukeminier Professor of Law*)

Joanna C. Schwartz, JD

Andrew D. Selbst, JD, MEng, *Acting*

Seana Shiffrin, JD, DPhil (*Pete Kameron Professor of Law and Social Justice*)

Anna K. Spain Bradley, JD

Clyde S. Spillenger, JD, MA, MPhil

Kirk J. Stark, JD (*Barrall Family Endowed Professor of Tax Law*)

Richard H. Steinberg, JD, PhD (*Jonathan D. Varat Endowed Professor of Law*)

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Lindsay F. Wiley, JD, MPH

Adam D. Winkler, JD, MA (*Connell Professor of Law*)

Jonathan M. Zasloff, JD, MA, MPhil, PhD

Noah D. Zatz, JD, MA

## Professors Emeriti

Richard L. Abel, PhD, LLB, LLD (*Connell Professor Emeritus of Law*)

Norman Abrams, JD

Alison G. Anderson, JD

Peter L. Arenella, JD

Michael R. Asimow, JD

Paul B. Bergman, JD

Gary L. Blasi, MA

Grace Ganz Blumberg, JD, LLM

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Albert J. Moore, JD

Stephen R. Munzer, JD

Grant S. Nelson, JD

Frances E. Olsen, JD, SJD

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Katherine V.W. Stone, JD (*Arjay and Frances Fearing Miller Professor Emerita of Law*)

Samuel C. Thompson, JD, MA, LLM

## LAW

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## Faculty Roster

### Professors

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Iman Anabtawi, JD, MA

Jonathan D. Varat, JD  
 Stephen C. Yeazell, JD, MA (*David G. Price and Dallas P. Price Professor Emeritus of Law*)  
 Eric M. Zolt, JD, MBA (*Michael H. Schill Endowed Professor Emeritus of Law*)

### Lecturers

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 Jessica R. Baril, JD, MA  
 Justin B. Bernstein, JD  
 Amelia M. Collins, JD  
 Gerloni S. Cotton, JD  
 Patrick D. Goodman, JD, MEd  
 Edward Han, JD  
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 Jason A. Light, JD  
 Kerry A. Lyon-Grossman, JD  
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 Peter L. Reich, JD, PhD  
 Sarah R. Wetzstein, JD  
 Pavel Wonsowicz, JD

### Adjunct Professors

Ahilan T. Arulanantham, JD  
 Eileen A. Scallen, JD, MA

### Adjunct Assistant Professors

Joel A. Feuer, JD, MA  
 Michael T. Roberts, JD, LL.M.

### Academic Administrators

Joseph P. Berra, JD, MA, MDiv  
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 Jason Fiske, JD, LL.M, MEd  
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 Cara A. Horowitz, JD  
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 Benjamin Nyblade, PhD  
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 Nina Rabin, JD  
 Robert Bradley Sears, JD  
 Anne M. Sidwell, JD  
 Julia E. Stein, JD  
 Lara Stemple, JD  
 Catherine Sweetser, JD, LL.M  
 Alicia Virani, JD, MA  
 Karin H. Wang, JD  
 Diana R.H. Winters, JD, MA, PhD

## Overview

The UCLA School of Law is designed to produce lawyers who are well-prepared for the various private and public roles that are assigned to members of the legal profession. The school pioneered clinical teaching, is a leader

in interdisciplinary research and training, and is at the forefront of efforts to link research to its effects on society and the legal profession. Students do not undertake a specific major but have the opportunity to enroll in a wide variety of courses dealing with various legal fields.

The law school is unique in that it also offers students an opportunity to specialize in six specific areas of law: business law and policy; critical race studies; international and comparative law; law and philosophy; media, entertainment, and technology law and policy; and public interest law and policy.

## Graduate Study

The school offers a three-year curriculum leading to the Juris Doctor (JD) degree and three advanced degrees—Master of Laws (LL.M), Master of Legal Studies (MLS), and Doctor of Juridical Science (SJD).

## Courses

The undergraduate courses offered by the School of Law are designed for undergraduate students only. For information about the legal curriculum of the School of Law, see the [school website](#).

## Graduate Majors

### Doctor of Juridical Science

Information about the [Juridical Science](#) program, how to apply, and requirements is available on the school website.

### Juris Doctor

Information about the [Juris Doctor](#) program, how to apply, and requirements is available on the school website.

### Concurrent Degree Programs

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Juris Doctor/African American Studies MA
- Juris Doctor/American Indian Studies MA
- Juris Doctor/Doctor of Education
- Juris Doctor/Education MA, PhD
- Juris Doctor/Master of Business Administration
- Juris Doctor/Master of Education
- Juris Doctor/Master of Public Health
- Juris Doctor/Master of Public Policy
- Juris Doctor/Master of Social Welfare
- Juris Doctor/Master of Urban and Regional Planning
- Juris Doctor/Philosophy PhD

## Master of Laws

Information about the [Master of Laws](#) program, how to apply, and requirements is available on the school website.

## Master of Legal Studies

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Articulated Degree Programs

Articulated degree programs permit no credit overlap; students must complete degree requirements separately for each degree.

- Master of Legal Studies/Doctor of Medicine

## Law, Undergraduate

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**156. American Political Thought Seminar. (3)** Seminar, nine hours. Examination of American political thought from founding to writings of Abraham Lincoln. Readings include Locke's *Second Treatise of Government*, Declaration of Independence, *Federalist* numbers 10 and 51, and numerous writings and speeches of Lincoln, including extensive portions of Lincoln-Douglas debates. Emphasis on class discussion. Letter grading.

**161. Consumer Bankruptcy Policy Seminar. (3)** Seminar, 13 hours. Examination of consumer bankruptcy policy with one architect of 1978 Bankruptcy Code. Discussion of debt payment in ancient Babylon where spouses and siblings could be sold into slavery for nonpayment of relative's debt. Examination of bankruptcy in U.S. history and analysis of heart of consumer bankruptcy policy, such as when debtors should be released from debts, what property debtors should keep, and how debtors can put together repayment plans. P/NP or letter grading.

**163A. International Human Rights Colloquium. (3)** Lecture, four hours. Alternative approaches to understanding international human rights law. Consideration of legal, political, sociological, and economic perspectives. Weekly presentations on topic by 11 leading human rights scholars from U.S. and abroad. Two-page critique of each paper presented by guest lecturers required. P/NP or letter grading.

**163B. International Human Rights Colloquium. (1)** Lecture, one hour. Requisite: course 163A. Continuation of course 163A. P/NP or letter grading.

**170. Race and Racism in California Legal History, 1846 to Present. (4)** Seminar, 14 hours. Limited to freshmen/sophomores. Exploration of California legal history, with focus on issues of race and racism, beginning with mid-19th-century transition from Mexican Alta California to U.S. territory and statehood. Topics include state measures affecting California Indians in 19th century, African Americans in California's 19th-century history, measures used to curtail Chinese immigration laws designed to prevent racial intermixing,

Alien Land Laws aimed at Japanese residents of California, relocation of Japanese citizens after Pearl Harbor, California's response to U.S. immigrants from dust bowl during great depression, post-World War II through 1960s measures aimed at equal access to things like home ownership, employment, and rental housing, and uses of initiative in modern era. P/NP or letter grading.

**173. Topics in American Constitutional History. (4)** Lecture, three hours. Introduction to major themes, events, and cases in American constitutional history. U.S. Supreme Court decisions and other sources of constitutional meaning, including popular movements and expressions of constitutional principle from actors in other branches of federal government and in states. Emphasis on historical background and ideological context for particular constitutional controversies at various points in American history, with more formal analysis of particular decisions and competing methods of constitutional interpretation considered. Topics include origins of judicial review, debates over meaning of federalism in early republic, slavery and constitution, Reconstruction Amendments, *laissez-faire* constitutionalism, citizenship and empire, origins of civil liberties, New Deal constitutionalism, and pre-history of Brown versus Board of Education. P/NP or letter grading.

**175. Seminar: Individual Rights Protected by U.S. Constitution. (3)** Seminar, two hours. Limited to juniors/seniors. Broad introduction to and examination of individual rights protected under Bill of Rights and 14th Amendment to U.S. Constitution, including freedom of speech and press, religious freedom, right to privacy (including procreative rights) and due process of law, constitutional protection against discrimination based on race and gender, and basic criminal procedure protections. Emphasis on principal Supreme court cases establishing scope of those rights and their limits. Letter grading.

**180. Special Topics in Law. (4)** Lecture, four hours. Topics of special interest to undergraduate students. Specific subjects may vary each term depending on particular interest of instructors or students. May be repeated for credit. P/NP or letter grading.

**182. Law and Popular Culture. (4)** Lecture, four hours. Focus on interface between two important subjects—law and popular culture. Students view series of films or television shows related to law, lawyers, and legal system. Discussion of pop culture treatment of subjects such as adversary system, good and bad lawyers, female lawyers, lawyers from lesbian, gay, bisexual, and transgender community, minority lawyers, work life of lawyers, legal education, ethical issues, jury system, and criminal and civil justice, drawing on film theory and filmmaking technique to deepen understanding of interrelationship between law and popular culture. Illumination of ways in which pop culture products both reflect and change social views about law and lawyers. Offered in summer only. P/NP or letter grading.

**183. Law and Order. (2)** Lecture, two hours. Introduction to basic principles of criminal law. How to read and interpret judicial cases and provisions of penal code to learn how American criminal justice system works. Discussions structured to simulate experience of typical law school classroom. P/NP or letter grading.

**184. Introduction to Legal Education. (4)** Lecture, four hours. Preliminary introduction to legal pedagogy and overview of American legal system. Analysis of appellate and U.S. Supreme Court cases and legislative materials to develop foundational law school skills and become familiar with principles of both scholarly and practice-oriented legal analysis. Topics include introduction to case analysis, reading cases, exploring precedent and *stare decisis*, separation of powers, and statutory interpretation. P/NP or letter grading.

**185. Corporate Mock Trial. (4)** Lecture, four hours. Introduction to basic principles of business law, such as how law applies to various business entities, duties and liabilities of corporate officers and directors, and shareholder derivative suits. American legal system and how litigation progresses from filing of complaints through trial. Students participate in mock trial at end of course. P/NP or letter grading.

**186. Law and Order. (4)** Lecture, four hours. Introduction to basic principles of criminal law. How to read and interpret judicial cases and provisions of penal code to learn how American criminal justice system works. Discussions structured to simulate experience of typical law school classroom. P/NP or letter grading.

**187A. Legal History Colloquium. (3)** Seminar, two hours. Corequisite: course 193. Reading of scholarly papers prepared by school faculty members and other scholars in fields of legal history, economics, and political science. Preparation of critiques and discussion of issues in seminar setting with author of papers. P/NP or letter grading.

**187B. Politics and International Law Colloquium. (3)** Seminar, two hours. Corequisite: course 193. Limited to College Honors students. Lectures on alternative theoretical approaches (including realism, institutionalism, and constructivism) to understand relationship between politics and international law. Weekly presentations on topic by 10 leading law and political science scholars from the U.S. and abroad. Reading of scholarly papers, preparation of critiques, and discussion of issues in seminar setting with authors of papers. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**191. Variable Topics Research Seminars: Law—California Legal History. (4)** Seminar, two hours. Requisite: course 170. Research project, selected in consultation with faculty member and using original and secondary materials, to be conducted, followed by major presentation of student work to class and writing of major research paper. Letter grading.

**193. Journal Club Seminars: Law. (1)** Seminar, one hour; discussion, two hours. Corequisite: course 187A. Adjunct course limited to undergraduate students taking law colloquium. Intensive review and follow-up of scholarly papers presented in colloquium series. Reading of legal cases and supplemental material to provide legal framework for each scholarly paper presented in colloquium. Supervised by faculty member in charge of colloquium series. May be repeated for credit. P/NP grading.

**199. Directed Research in Law. (1 to 6)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating scholarly paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

# LESBIAN, GAY, BISEXUAL, TRANSGENDER, AND QUEER STUDIES

*Interdisciplinary Minor  
College of Letters and Science*

350 Kaplan Hall  
Box 957233  
Los Angeles, CA 90095-7233

**Lesbian, Gay, Bisexual, Transgender, and Queer Studies**

310-825-7650

Joshua J. Guzmán, PhD, *Chair*

## Faculty Committee

Anurima Banerji, PhD (*World Arts and Cultures/Dance*)  
Maylei S. Blackwell, PhD (*Chicana/o and Central American Studies, Gender Studies*)  
Cesar D. Favila, PhD (*Musicology*)  
Michael F. Fleming, BA (*Social Welfare*)  
Alicia Gaspar de Alba, PhD (*Chicana/o and Central American Studies, English, Gender Studies*)  
Joshua J. Guzmán, PhD (*Gender Studies*)  
Ju Hui Judy Han, PhD (*Gender Studies*)  
Ella H. Haselswerdt, PhD (*Classics*)  
Grace Kyungwon Hong, PhD (*Asian American Studies, Gender Studies*)  
Michael A. Hunter, PhD (*Urban Planning*)  
Summer Kim Lee, PhD (*English*)  
Alma López Gaspar de Alba, PhD (*Chicana/o and Central American Studies*)  
Uri G. McMillan, PhD (*English, Gender Studies*)  
Sean A. Metzger, PhD (*Theater*)  
Ho'esta Mo'e'hahne, PhD (*English*)  
Sherene H. Razack, PhD (*Gender Studies*)  
Carlos E. Santos, PhD (*Social Welfare*)  
Gary M. Segura, PhD (*Chicana/o and Central American Studies, Political Science, Public Policy*)  
Justin J. Torres, MFA (*English*)

## Overview

Although the initial focus in lesbian, gay, bisexual, transgender, and queer (LGBTQ) studies is usually on minority sexualities and transgenerism, it is impossible to study them in any meaningful way without raising questions about gender, race, ethnicity, economics/class, globalism, and the construction of scientific knowledge. Thus lesbian, gay, bisexual, transgender, and queer studies, which may at first seem to concern the private practices of a small number of people, inevitably leads to the much larger study of sexuality and culture. The Lesbian, Gay, Bisexual, Transgender, and Queer Studies program represents an important vantage point from which to investigate the social construction of sexual identity, social control of behavior, changing definitions of the family, and the place of sexual and gender expression in the public and private spheres. Because of the



kinds of questions asked, LGBTQ studies is the site of some of the most exciting work being done today on the relationship between sexuality and culture.

## Undergraduate Minor

### Lesbian, Gay, Bisexual, Transgender, and Queer Studies Minor

The minor in Lesbian, Gay, Bisexual, Transgender, and Queer Studies offers students the opportunity to study sexuality from a variety of cultural and disciplinary perspectives meant to engage students in some of the most cutting-edge research in the field. In addition, seniors in the minor are expected to do a capstone internship in an international, national, or community organization, thereby acquiring invaluable firsthand knowledge, experience, and data. After completing the minor, students should be familiar with the theoretical tools that different disciplines employ to study sexuality. They should be acquainted with some of the many different ways sexuality has been organized in the past and is organized in different cultures in the present and should have an enhanced understanding and appreciation both of the sexual diversity of the world in which they live and of the complex ways in which sexuality intersects with other categories of identity and practice.

### Admission

To enter the Lesbian, Gay, Bisexual, Transgender, and Queer Studies minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Upper-Division Courses (28 units):* Lesbian, Gay, Bisexual, Transgender, and Queer Studies M114, 180XP, and five additional courses (including at least one 181 course and one 183 course) to be selected from Anthropology 145S, Asian American Studies 187C, Chicana/o and Central American Studies M105C, Education 106B, Gender Studies 187, Lesbian, Gay, Bisexual, Transgender, and Queer Studies M101A through M101D, M107B, M115, M116, M118, M125, M126, M132, M133, M136, M137, M141, M142, 165SL, 170, 181, 182, 183, 184, 187, M191D, M191E, Psychology 129E, Scandinavian 174B, Sociology M162, Theater 107.

### Policies

Students may petition to apply one non-listed course to the minor if they can show that lesbian, gay, bisexual, transgender, or queer issues represent a significant part (at least 25 percent) of the course content. Students are strongly urged to keep in close contact with the student services adviser, who can help them plan their course of study.

A minimum of 20 units applied toward the minor requirements must be in addition to units

applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Lesbian, Gay, Bisexual, Transgender, and Queer Studies

#### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

#### Upper-Division Courses

**M101A. Premodern Queer Literatures and Cultures. (5)** (Same as English M101A and Gender Studies M105A.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3. Survey of discrete period of queer literature from beginning to circa 1850. Works by such writers as Sappho, Plato, Marlowe, Shakespeare, and Thomas Gray may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M101B. Queer Literatures and Cultures, 1850 to 1970. (5)** (Same as English M101B and Gender Studies M105B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3. Survey of discrete period of queer literature and culture from circa 1850 to 1970. Works by such authors as Walt Whitman, Radclyffe Hall, Gertrude Stein, Virginia Woolf, Langston Hughes, Tennessee Williams, Henry Blake Fuller, and James Baldwin may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M101C. Queer Literatures and Cultures after 1970. (5)** (Same as English M101C and Gender Studies M105C.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3. Examination of cultural production, specifically literature, produced by queers after Stonewall rebellion in New York in 1969, widely regarded as origins or beginning of modern lesbian and gay rights movement in U.S. Writings and films by such authors as Andrew Holleran, Leslie Feinberg, Achy Obejas, Essex

Hemphill, Audre Lorde, Cheryl Dunye, and Alison Bechdel may be included. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M101D. Studies in Queer Literatures and Cultures. (5)** (Same as English M101D and Gender Studies M105D.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3. Variable specialized studies course in queer literatures and cultures. Topics focus on particular problem or issue in terms of its relationship to queer cultures and writings. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M107B. Studies in Gender and Sexuality. (5)** (Same as English M107B and Gender Studies M107B.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3. Examination of literary and cultural production through lens of gender and sexuality. Depending on instructor, emphasis may be historical, regional, national, comparative, or thematic and include other intersectional vectors of identity and representation such as race and ethnicity. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M114. Introduction to Lesbian, Gay, Bisexual, Transgender, and Queer Studies. (5)** (Same as Gender Studies M114.) Lecture, three hours; discussion, one hour. Introduction to history, politics, culture, and scientific study of lesbians, gay men, bisexuals, transgendered, and queer people; examination of sexuality and gender as categories for investigation; interdisciplinary theories and research on minority sexualities and genders. P/NP or letter grading.

**M115. Topics in Study of Sexual and Gender Orientation. (4)** (Same as Gender Studies M115.) Lecture/discussion, three hours. Prerequisite: course M114 or Gender Studies 10. Studies in arts, humanities, social sciences, and/or life sciences on aspects of sexual orientation, gender identity, and lesbian, gay, and/or bisexual issues; variable topics may include cultural representations, historical and political change, life and health experiences, and queer or transgender theories; multiethnic and cross-cultural emphases. May be repeated for credit. Letter grading.

**M116. Sexuality and the City: Queer Los Angeles. (4)** (Same as Gender Studies M116.) Lecture, three hours. Prerequisite: course M114. Investigation of history, culture, and political economy of lesbian, gay, bisexual, and transgender Los Angeles. Letter grading.

**M118. Queering American History. (4)** (Same as Gender Studies M118.) Lecture, four hours. Enforced prerequisite: one prior lesbian, gay, bisexual, transgender, and queer studies course. History of sexual and gender minorities in U.S. Topics include changing norms, romantic friendships, medical discourse, liberation politics, post-Stonewall culture, AIDS, transgender movement, queer theory, and politics. P/NP or letter grading.

**M125. Exploring Intersections of Ability and Sexuality. (4)** (Same as Disability Studies M125.) Lecture, three hours. Exploration of identity as means of understanding cultural formations, dominant/nondominant power dynamics, and systems of visual representation. Intersectional approach to explore how ability and sexuality intersect, overlap, and change notions of identity. Use of scholarly texts from disability studies, lesbian, gay, bisexual, and transgender studies, popular culture, performance, and film to investigate factors that shape ability and sexuality as basis for identity. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M126. Feminist and Queer Theory. (5)** (Same as English M126 and Gender Studies M126.) Lecture, four hours; discussion, one hour (when scheduled). Enforced prerequisite: English Composition 3. Recommended: one course from English 120, 121, Gender Studies 102, 103, or 104. Investigation of key concepts and debates in study of gender, sexuality, and kinship, with focus on their interrelated significance for making of culture. Readings to be interdisciplinary, with possible emphasis on impact of changing ideas of gender and sexuality on specific historical cultures. May be repeated for credit with topic or instructor change. P/NP or letter grading.



**M132. Border Consciousness. (4)** (Same as Chicana/o and Central American Studies M132.) Lecture, three hours; discussion, one hour (when scheduled). Investigation through history, popular culture, and mass media of bilingual and bicultural identities produced by geographical and cultural space between Mexico and U.S. Special attention to border consciousness as site of conflict and resistance. Letter grading.

**M133. Chicana Lesbian Literature. (4)** (Same as Chicana/o and Central American Studies M133 and Gender Studies M133.) Lecture, four hours. Exploration of intersection of radical First and Third World feminist politics, lesbian sexuality and its relationship to Chicana identity, representation of lesbianism in Chicana literature, meaning of *familia* in Chicana lesbian lives, and impact of Chicana lesbian theory on Chicana/Chicano studies. Letter grading.

**M135. Bilingual Writing Workshop. (4)** (Same as Chicana/o and Central American Studies CM135 and Gender Studies M135C.) Seminar, four hours. Limited to juniors/seniors. Writing sample required; access to course web page mandatory; need not be bilingual to enroll. Technical instruction, analysis, and theoretical discussion of bilingual creative expression through genre of short fiction. Bilingualism as both politics and aesthetics to be central theme. Discussion and analysis of Chicana/Chicano and Latina/Latino short story collections. Peer critique of weekly writing assignments. Emphasis on narrative techniques such as characterization, plot, conflict, setting, point of view, and dialogue, and magical realism as prevailing Chicanesque/Latinesque style. Some attention to process of manuscript preparation, public reading, and publication. Letter grading.

**M136. Censored! Art on Trial. (4)** (Same as Chicana/o and Central American Studies M136.) Lecture, four hours. Examination of censorship in visual arts, particularly art of queer Chicana/Chicano and Latina/Latino artists such as Alma Lopez, Ester Hernández, and Alex Donis. Other censored artists include feminist artist Yolanda López, queer artists Robert Mapplethorpe and David Wojnarowicz, painter Christ Ofili, photographers Sally Mann and Andres Serrano, printmaker Enrique Chagoya, muralist Noni Olabisi, writer Salman Rushdie, and four performance artists—Karen Finley, Tim Miller, John Fleck, and Holly Hughes—whose work was vetoed by chair of National Endowment for Arts (NEA) in 1990 after they had successfully passed through NEA's peer review process and who came to be known as NEA Four. P/NP or letter grading.

**M137. Lesbian, Gay, Bisexual, Transgender, and Queer Perspectives in Pop Music. (5)** (Same as Musicology M137.) Lecture, four hours; discussion, one hour. Survey of English-language popular music in 20th century, with focus on lesbians, gay men, and members of other sexual minorities as creators, performers, and audience members. Letter grading.

**M141. African American Women's History. (4)** (Same as African American Studies M141.) Lecture, four hours. Historical examination of black women's experiences in U.S. from antebellum era to present. By situating black women's experiences within major historical transitions in American history, exploration of key themes, including gender formation, sexuality, labor and class, collective action, gender and sexual violence, reproduction, and role of law. How have intersecting forms of oppression impacted black women's historical lives? How is difference constructed through interrelated and overlapping ideologies of race and gender? How do historians uncover black women's historical lives and what are challenges to such discoveries? Examination of black women's individual and collective struggles for freedom from racism, sexism, and heteropatriarchy, as well as black women's participation in and challenge to social movements, including suffrage, women's liberation, civil rights, and black power. Investigation of black women's intellectual history, including their cultural productions. Letter grading.

**M142. Race, Gender, and Punishment. (4)** (Same as African American Studies M142.) Seminar, four hours. Interdisciplinary examination of historical and contemporary development of modern prison industrial complex in U.S., with attention to impact of prison indus-

trial complex on immigrants, including undocumented residents, homeless populations, women, African Americans, and transgender nonconforming and lesbian, gay, bisexual, and transgender communities. Why does U.S. have largest prison population in world? What historical conditions and ideologies gave rise to this massive explosion in U.S. prisoner population? What policies have fueled mass imprisonment? Who is imprisoned? How have politicians used imprisonment as response to economic transformations and perceived social disorders? How is current crisis analogous to or distinct from regimes of racialized punishment in prior historical moments? Letter grading.

**M147A. Psychology of Lesbian Experience. (4)** (Same as Gender Studies M147A and Psychology M147A.) Lecture, two hours; discussion, one hour. Prerequisite: course M114 or Gender Studies 10 or Psychology 10. Designed for juniors/seniors. Review of research and theory in psychology and gender studies to examine various aspects of lesbian experience, impact of heterosexism/stigma, gender role socialization, minority status of women and lesbians, identity development within a multicultural society, changes in psychological theories about lesbians in sociohistorical context. P/NP or letter grading.

**165SL. Queer Activism and Engagement. (4)** Lecture, three hours; fieldwork, five hours. Benefits students pursuing minor in Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) Studies, those passionate about social justice, or those who want to learn new skills about community engagement. Offers opportunity to work in LGBTQ-related community organizations, to reflect on political and theoretical issues involved in such work and such organizations, and to draw ideas from various courses they have already taken and test them in settings outside UCLA. P/NP or letter grading.

**M167. Contested Sexualities. (4)** (Same as Gender Studies M167.) Lecture, three hours; discussion, one hour. Sociological perspectives on formation, control, and resistance of lesbian, gay, bisexual, and transgendered people. Variable topics include identity and community; age, class, gender, and racial diversity; and analysis of contemporary issues affecting contested sexualities. Letter grading.

**170. Queer Cultures after Stonewall: Sexual Dissidence, Performance, and Community in 1970s. (5)** Lecture, four hours. Exploration of intense burst of culture-making among lesbians and gay men in U.S. and Canada in decade following Stonewall Rebellion in literature and performing arts through formal and thematic analysis, exploration of social contexts of creation and reception, and wide-ranging interpretive study. No extensive training in literary, musical, visual, or media analysis is required; conceptual and analytical frameworks to be used are provided. P/NP or letter grading.

**180XP. Lesbian, Gay, Bisexual, and Transgender Institutions and Organizations. (4)** (Formerly numbered 180SL.) Lecture, three hours; fieldwork, five hours. Preparation: one prior lesbian, gay, bisexual, and transgender studies course. Service-learning course that offers opportunity for students to work in lesbian, gay, bisexual, and transgender-related community organizations, to reflect on political and theoretical issues involved in such work and such organizations, and to draw ideas from various courses they have already taken and test them in settings outside UCLA. P/NP or letter grading.

**181. Variable Topics in Queer Diversities. (4)** Lecture, four hours. Study of topics about queer diversities from lesbian, gay, bisexual, and transgender studies perspective. May be repeated for credit with consent of instructor. P/NP or letter grading.

**182. Variable Topics in Education, Law, and Public Policy. (4)** Lecture, four hours. Study of law, education, and public policy topics from lesbian, gay, bisexual, and transgender studies perspective. May be repeated for credit with consent of instructor. P/NP or letter grading.

**183. Variable Topics in Queer Subjectivities/Theories/History. (4)** Lecture, four hours. Study of topics about queer subjectivities/theories/history from lesbian, gay, bisexual, and transgender studies perspective. May be repeated for credit with consent of instructor. P/NP or letter grading.

**184. Variable Topics in Science, Health, and Genetics. (4)** Lecture, four hours. Study of science, health, and genetics topics from lesbian, gay, bisexual, and transgender studies perspective. May be repeated for credit with consent of instructor. P/NP or letter grading.

**187. Selected Topics in Lesbian, Gay, Bisexual, and Transgender Studies. (4)** Lecture, four hours. Study of selected topics in lesbian, gay, bisexual, and transgender studies. Consult Schedule of Classes for topics and instructors. May be repeated for credit with consent of instructor. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**M191D. Topics in Queer Literatures and Cultures. (5)** (Same as English M191D and Gender Studies M191D.) Seminar, three or four hours. Enforced prerequisite: English Composition 3. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**M191E. Topics in Gender and Sexuality. (5)** (Same as English M191E and Gender Studies M191E.) Seminar, three or four hours. Enforced prerequisite: English Composition 3. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**194. Research Group or Internship Seminars: Lesbian, Gay, Bisexual, and Transgender Studies. (2)** Seminar, two hours. Preparation: completion of four courses toward minor. Prerequisite: course M114. Corequisite: course 195. Designed for seniors who are doing internship in lesbian, gay, bisexual, or transgender organization. Discussion of organization theoretical and political issues in context of internship and relation of those issues to ideas explored in minor courses already taken. May be repeated for credit. P/NP grading.

**195. Community or Corporate Internships in Lesbian, Gay, Bisexual, and Transgender Studies. (4)** Tutorial, one hour. Preparation: completion of four courses toward minor. Prerequisite: course M114. Corequisite: course 194. Limited to seniors. Internship in supervised setting in lesbian, gay, bisexual, or transgender community organization. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Lesbian, Gay, Bisexual, and Transgender Studies. (2 to 4)** Tutorial, one hour. Prerequisite: course M114. Limited to juniors/seniors. Directed program of independent study or research on specific topic within lesbian, gay, bisexual, and transgender studies, with scheduled meetings to be arranged between faculty member and student. Tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

# LETTERS AND SCIENCE COLLEGEWIDE PROGRAMS

*College of Letters and Science*

A311 Murphy Hall  
Box 951414

Los Angeles, CA 90095-1414

**Honors Programs**

310-825-1553

## Overview

Highly motivated students who find that no single major accommodates their specific interest in a given subject may propose designing their own major. Proposals are prepared with faculty guidance and sponsorship and are thoroughly examined for cogency, completeness, and academic merit.

## Undergraduate Majors

### Individual Field of Concentration BA in Letters and Science

Highly motivated students who find that no single major accommodates their specific interest in a given subject may propose designing their own major. Proposals are prepared with faculty guidance and sponsorship and are thoroughly examined for cogency, completeness, and academic merit.

#### Learning Outcomes

The Individual Field of Concentration major has the following learning outcomes:

- Design of a course of study that shows a deep understanding of how the disparate disciplines are connected
- Demonstrated understanding of how the research and creative methodologies of different disciplines can interface with and illuminate the understanding of another
- Demonstrated ability to read in the scholarly discourse and style of different disciplines
- Development of a voice in written thesis for an interdisciplinary audience
- Written thesis that demonstrates mastery of diverse fields as a result of research sources and production of scholarly work outside of traditionally defined academic boundaries

### Individual Field of Concentration BS in Letters and Science

Highly motivated students who find that no single major accommodates their specific inter-

est in a given subject may propose designing their own major. Proposals are prepared with faculty guidance and sponsorship and are thoroughly examined for cogency, completeness, and academic merit.

#### Learning Outcomes

The Individual Field of Concentration major has the following learning outcomes:

- Design of a course of study that shows a deep understanding of how the disparate disciplines are connected
- Demonstrated understanding of how the research and creative methodologies of different disciplines can interface with and illuminate the understanding of another
- Demonstrated ability to read in the scholarly discourse and style of different disciplines
- Development of a voice in written thesis for an interdisciplinary audience
- Written thesis that demonstrates mastery of diverse fields as a result of research sources and production of scholarly work outside of traditionally defined academic boundaries

## LIFE SCIENCES

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**Life Sciences**

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## Faculty Committee

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Siobhan A. Braybrook, PhD (*Molecular, Cell, and Developmental Biology*)  
David A. Campbell, PhD (*Microbiology, Immunology, and Molecular Genetics*)  
Yvonne Y. Chen, PhD (*Microbiology, Immunology, and Molecular Genetics*)  
Daniel H. Cohn, PhD (*Molecular, Cell, and Developmental Biology*)  
Ronald H. Cooper, PhD (*Integrative Biology and Physiology*)  
Joseph Esdin, PhD (*Integrative Biology and Physiology*)  
Alan Garfinkel, PhD (*Integrative Biology and Physiology, Medicine*)  
Tonya L. Kane, PhD (*Ecology and Evolutionary Biology*)  
Rachel L. Kennison, PhD (*Ecology and Evolutionary Biology*)  
Colin T. Kremer, PhD (*Ecology and Evolutionary Biology*)  
Frank A. Laski, PhD (*Molecular, Cell, and Developmental Biology*)  
Jeffrey P. Maloy, PhD (*Molecular, Cell, and Developmental Biology*)  
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Megan M. McEvoy, PhD (*Society and Genetics*)  
Rachel E. Prunier, PhD (*Ecology and Evolutionary Biology*)

Morgan W. Tingley, PhD (*Ecology and Evolutionary Biology*)

## Faculty Roster

#### Professors

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Daniel H. Cohn, PhD

Frank A. Laski, PhD

Megan M. McEvoy, PhD

#### Professor Emeritus

Alan Garfinkel, PhD

#### Associate Professors

Yvonne Y. Chen, PhD

Morgan W. Tingley, PhD

#### Assistant Professors

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Colin T. Kremer, PhD

#### Lecturers PSOE

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#### Lecturers

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Gaston M.U. Pfluegl, PhD

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Shanna Shaked, PhD

Yevgenya Shevtsov, PhD

## Overview

Students who wish to study life sciences have a choice of eight majors, all of which lead to a Bachelor of Science (BS) degree: Biology; Ecology, Behavior, and Evolution; and Marine Biology (Ecology and Evolutionary Biology Department); Microbiology, Immunology, and Molecular Genetics (Microbiology, Immunology, and Molecular Genetics Department); Molecular, Cell, and Developmental Biology (Molecular, Cell, and Developmental Biology Department); Neuroscience (Neuroscience Interdepartmental Program); Physiological Science (Integrative Biology and Physiology Department); and Psychobiology (Psychology Department). This choice reflects the diversity of undergraduate instruction in life sciences at UCLA. Despite this diversity, all of these majors require a common core of introductory courses that forms the foundation for any study of life sciences and that is required for more advanced courses in each major. The common core includes courses in chemistry, physics, and mathematics, as well as introductory courses in evolution

and biodiversity, cellular and organismal biology, molecular biology, and genetics. During the first two years, students may also gain experience in a research laboratory through the [Student Research Program](#). For more information on each major, see the individual departments in this chapter. For additional information on the Life Sciences core curriculum, see the [curriculum website](#).

Students considering one of the life sciences majors are encouraged to declare a major as early as possible, even in their first year. In this way, they are identified by the life sciences advising offices and receive important curricular and other information. Because the core curriculum prepares them for any of the eight majors, they have the flexibility to switch to another life sciences major at any time during their progression through the core curriculum. Note: The Marine Biology and Psychobiology majors may require some courses in addition to the life sciences core curriculum as part of the preparation. Consult the course requirements for both majors.

## Undergraduate Study

### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, and 14D, or 20A, 20B, 20L, 30A, 30AL, and 30B; Life Sciences 7A, 7B, 7C, 23L, 107; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

Each core curriculum course must be passed with a grade of C– or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving a grade of D or F in two core curriculum courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

### Transfer Students

Transfer applicants with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, and one semester of organic chemistry with laboratory. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Undergraduate Research Consortium in Functional Genomics

The Undergraduate Research Consortium in Functional Genomics (URCFG) offers a sequence of laboratory-intensive courses designed for undergraduate students committed to pursuing research. The innovative partnership between UCLA and the Howard Hughes

Medical Institute (HHMI) was formed through a major award to professor Utpal Banerjee. The HHMI Professors Program seeks to engage leading scientists in transmitting the excitement and values of scientific research to undergraduate education. The goal of the URCFG is to emphasize the importance for academia and industry of research in the fields of medicine and biotechnology.

Sponsored by the Life Sciences Core Education Department, the URCFG offers undergraduate students from any UCLA major the opportunity to learn biological research techniques early in their educational careers and within a structured institutional environment. Students devote between one and four terms to the study of biological research in genetics, bioinformatics, and functional genomics. The training emphasizes research concepts in basic science such as the model organism, and in advanced research techniques such as electron microscopy.

Students participate in one structured lower-division course—Biomedical Research 10H—which is limited to 30 students per term and is offered every term. After satisfactorily completing course 10H and with instructor consent, students may participate in up to three terms of upper-division research in genes, genetics, and genomics. The upper-division courses—Biomedical Research 100HA, 100HB, 100HC—do not involve pre-existing laboratory experiments. Syllabi for the courses are instead based on individual research projects whose outcomes students discover through the course of their studies. It is anticipated that only about one-third of the students who complete course 10H will subsequently enroll in course 100HA, and students are advised that they can benefit significantly from course 10H alone.

Each course must be taken for a letter grade. Under special circumstances, one course may be waived for students who have prior research experience in fields covered by the courses. Students who complete the required courses receive a certificate of merit indicating their completion of the consortium.

To participate, students must be accepted into the Undergraduate Research Consortium in Functional Genomics. Interested students should contact the URCFG coordinator in the Molecular, Cell, and Developmental Biology Student Affairs Office, 128A Hershey Hall, 310-825-7109, for information regarding admission and an application. Applications are due no later than Friday of the fourth week of the term prior to the term in which students plan to enroll in course 10H.

## Life Sciences

### Lower-Division Courses

**3H. Introduction to Molecular Biology (Honors).** (5) Lecture, two and one half hours; discussion, 90 minutes; movie section, two and one half hours. Enforced requisites: course 2, and Chemistry 14C or 30A. Honors course parallel to course 3, but at a more advanced level. Letter grading.

**4A. Collaborative Learning Workshop.** (1) Lecture, two hours. Enforced corequisite: course 4. Development of problem-solving skills and intuition in genetics in collaborative learning environment. P/NP grading.

**7A. Cell and Molecular Biology.** (5) Lecture, three hours; discussion, 75 minutes. Introduction to basic principles of cell structure and cell biology, biochemistry, and molecular biology. P/NP or letter grading.

**7B. Genetics, Evolution, and Ecology.** (5) Lecture, three hours; laboratory, 80 minutes. Enforced requisite: course 7A. Principles of Mendelian inheritance and population genetics. Introduction to principles and mechanisms of evolution by natural selection, population, behavioral, and community ecology, and biodiversity, including major taxa and their evolutionary, ecological, and physiological relationships. Letter grading.

**7C. Physiology and Human Biology.** (5) Lecture, three hours; discussion, 75 minutes. Enforced requisite: course 7B. Organization of cells into tissues and organs and principles of physiology of organ systems. Introduction to human genetics and genomics. Letter grading.

**15. Life: Concepts and Issues.** (5) Lecture, two and one half hours; discussion, 75 minutes. Introduction to important concepts and issues in the field for non-life sciences majors. Topics include chemistry of life, genetics, physiology, evolution, and ecology—all explored in lecture and debates, with writing component. P/NP or letter grading.

**15L. Life: Concepts and Issues Laboratory.** (1) Laboratory, two hours. Requisite or corequisite: course 15. Broad introduction to biology, with focus on scientific literacy and thinking. Topics include scientific thinking and decision making to interpret and analyze data, evolution and genetics, physiology (chemistry, nutrition, reproduction, endocrinology, and neurobiology), and human behavioral biology. Letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Quantitative Concepts for Life Sciences.** (5) Lecture, three hours; discussion, two hours. Preparation: three years of high school mathematics (to algebra II), some basic familiarity with computers. Introduction to variety of quantitative concepts that are relevant to biology. Designed to enhance quantitative skills that are essential for success in life sciences, chemistry, mathematics, and physics courses that make up core curriculum for life sciences majors at UCLA. Biological examples used throughout to gain appreciation of relevance of mathematics to biology. Letter grading.

**23L. Introduction to Laboratory and Scientific Methodology.** (3) Lecture, one hour; laboratory, three hours. Requisite: course 2 or 7B. Recommended to be taken concurrently with course 7C. Introductory life sciences laboratory designed for undergraduate students. Opportunity to conduct wet-laboratory and cutting-edge bioinformatics laboratory experiments. Students work in groups of three conducting experiments in areas of physiology, metabolism, cell biology, molecular biology, genotyping, and bioinformatics. Letter grading.

**30A. Mathematics for Life Scientists.** (5) Lecture, three hours; laboratory, two hours. Preparation: three years of high school mathematics (to algebra II), some basic familiarity with computers. Mathematical modeling as tool for understanding dynamics of biological systems. Fundamental concepts of single-variable calculus and development of single- and multi-variable differential equation models of dynamical processes in ecology, physiology, and other subjects in which quantities change with time. Use of free computer program Sage for problem solving, plotting, and dynamical simulation in laboratory. Letter grading.

**30B. Mathematics for Life Scientists.** (5) Lecture, three hours; laboratory, two hours. Enforced requisite: course 30A. Introduction to concept of matrices and linear transformations to equip students with some basic tools to understand dynamics of multivariable nonlinear systems. Examples from ecological, physiological, chemical, and other systems. Letter grading.

**M32. Essential Calculus for Mathematical Biologists. (4)** (Same as Computational and Systems Biology M32 and Mathematics M32T.) Lecture, three hours; discussion, one hour. Requisites: courses 30A, 30B. Not open to students with credit for Mathematics 31A, 31B, 32A, or 32B. Designed for life sciences students. Methods and results of single and multivariable calculus essential for quantitative training in biology. Limits, differentiation (single and several variables), optimization, integration and methods of integration, Taylor polynomials and applications to approximation, Taylor and other power series, vector valued functions, gradients, and Lagrange multipliers. P/NP or letter grading.

**40. Statistics for Biological Systems. (5)** Lecture, three hours; laboratory, two hours. Requisite: course 30A. Designed for life sciences students. Introduction to statistics with emphasis on computer simulation of chance probabilities as replacement for traditional formula-based approach. Simulations allow for deeper understanding of statistical concepts, and are applicable to wider class of distributions and estimators. Students learn simple programming language to carry out statistical simulations, and apply them to classic problems of elementary statistics. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics in Life Sciences. (1 to 4)** Seminar, two to four hours. Current issues in research and/or development in life sciences. Consult Schedule of Classes for topics and instructors. May be repeated once for credit with consent of instructor. P/NP or letter grading.

**98XA. PEERS Collaborative Learning Workshops for Life Sciences Majors. (1)** Seminar, three hours. Corequisite: associated undergraduate lecture course in life sciences. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of intuition and problem-solving skills in collaborative learning environment. May be repeated three times, but only 1 unit may be applied toward graduation. P/NP grading.

**98XB. PEERS Collaborative Learning Workshops for Life Sciences Majors. (1)** Seminar, three hours. Corequisite: associated undergraduate lecture course in life sciences. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of intuition and problem-solving skills in collaborative learning environment. May be repeated three times, but only 1 unit may be applied toward graduation. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Understanding Scientific Literature and Context. (2 to 4)** Seminar/discussion, one to two hours. Introduction to set of skills proven to help students read and understand scientific research papers. Offers opportunity to practice those skills while interacting with scientists at UCLA. Reading and understanding scientific research papers is skill. It can develop quickly and be refined/practiced for rest of scientific

journey. Uses CREATE learning framework, Consider, Read, Elucidate hypotheses, Analyze and interpret data, and Think of next Experiment. At UCLA, CREATESS! uses additional dimensions of final Synthesis and Social context. Students work within learning pod and are guided by lead instructors. P/NP or letter grading.

**107. Genetics. (5)** Lecture, three hours; discussion, 75 minutes. Requisites: courses 7C, 23L, Chemistry 14A (or 20A), 14C (or 30A). Not open for credit to students with credit for course 4. Advanced Mendelian genetics, recombination, biochemical genetics, mutation, DNA, genetic code, gene regulation, genes in populations. Letter grading.

**110. Career Exploration in Life Sciences. (2)** Seminar, two hours. Recommended for all students interested in exploring career options in life sciences, including incoming transfers. Designed to increase confidence and skills, and expand awareness through self-reflection and guest speakers. Networking, interviewing, resume, and cover letter building. P/NP grading.

**130. Science Classroom Observation and Participation. (1)** Seminar, one hour. Preparation: completion of three mathematics and/or science courses at level required of science majors. Observation, participation, and assisting in science classes at elementary, middle, and secondary schools. May be repeated for credit. P/NP grading.

**M174. Health Disparities. (4)** (Same as Psychology M174.) Lecture, three hours. Examination of health disparities and ways in which societal responses to race and ethnicity in combination with variety of other factors create differential quality and access to health-care resulting in poor health outcomes in racial/ethnic minorities. Basic foundation for critical thinking about assumptions that shape life sciences, medical research, clinical practice, and social and behavioral sciences as they relate to racial and ethnic minority populations and to teach students to integrate concepts of culture and health disparities into other social, biological, political, psychological, genetic, and clinical health interests. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**M192A. Introduction to Collaborative Learning Theory and Practice. (1)** (Formerly numbered 192A.) (Same as Atmospheric and Oceanic Sciences M192A, Chemistry M192E, Computer Science M192A, Mathematics M192A, and Physics M192S.) Seminar, one hour. Training seminar for undergraduate students who are selected for learning assistant (LA) program. Exploration of current topics in pedagogy and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. Letter grading.

**192B. Methods and Application of Collaborative Learning Theory in Life Sciences. (3)** Seminar, one hour; clinic, six hours. Requisites: course 192A (may be taken concurrently) and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated three times for credit. Combination of courses 192B, 192C, 192D, and 192E may not be taken for more than total of 4 times or 4 courses. Letter grading.

**192C. Methods and Application of Collaborative Learning Theory in Life Sciences. (4)** Seminar, three hours; clinic, nine hours. Requisites: course 192A (may be taken concurrently) and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated three times for credit. Combination of courses 192B, 192C, 192D, and 192E may not be taken for more than total of 4 times or 4 courses. Letter grading.

**192D. Methods and Application of Collaborative Learning Theory in Life Sciences. (2)** Seminar, three hours; clinic, three hours. Requisites: course 192A (may be taken concurrently) and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated three times for credit. Combination of courses 192B, 192C, 192D, and 192E may not be taken for more than total of 4 times or 4 courses. Letter grading.

**192E. Methods and Application of Collaborative Learning Theory in Life Sciences. (1)** Seminar, one hour; clinic, two hours. Requisites: course 192A (may be taken concurrently) and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated three times for credit. Combination of courses 192B, 192C, 192D, and 192E may not be taken for more than total of 4 times or 4 courses. Letter grading.

**192F. Undergraduate Practicum in Life Sciences. (4)** Seminar, two hours; clinic, nine hours. Requisite: one course from 1, 2, 3, 4, 7A, 7B, 7C, 20, 23L, 30A, 30B, 107, 110. Limited to sophomores/juniors/seniors. Advanced training and supervised practicum for experienced undergraduate students. Under guidance of faculty members, students refine their professional skills and take leadership roles in mentoring students. May be repeated for credit. Letter grading.

**192G. Collaborative Learning Theory and Practice: Anti-Racism Discourse. (1)** Seminar, two hours; discussion, one hour. Students engage in anti-racism discourse. Peers circulate through, engage, and reflect on various topics that target systemic racism surrounding our communities through proactive small-group conversation and weekly action plans. Peers



practice communication skills with frequent assessment and feedback with facilitators. May be repeated three times for credit. Letter grading.

**199. Directed Research or Senior Project in Life Sciences. (2)** Tutorial, two hours. Enforced requisite: course 3. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper/project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Preparation for College-Level Teaching in Life Sciences. (2)** Seminar, two hours. Corequisite: course 375. Designed for graduate students who are teaching assistants in Life Sciences Core Curriculum for first time and to be taken concurrently in term in which they teach. Prepares students for college-level teaching in large enrollment undergraduate courses, and provides professional development to support students pursuing diverse careers in life sciences. Study of inclusive, student-centered, and evidence-based teaching methodologies that include active learning, group work, formative assessment, backward course design, and reflective teaching practices that incorporate peer observations and constructive feedback. May not be repeated for credit. S/U grading.

# LINGUISTICS

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Kie Ross Zuraw, PhD

### Professors Emeriti

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Susan R. Curtiss, PhD  
Bruce P. Hayes, PhD (*Theresa McShane Biggs and Henry P. Biggs Centennial Term Professor Emeritus of Linguistics*)  
Thomas J. Hinnebusch, PhD  
Nina M. Hyams, PhD  
Patricia A. Keating, PhD  
Edward L. Keenan, PhD  
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### Assistant Professors

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Margaret Cychosz, PhD  
Benjamin J. Eischens, PhD  
Stefan Keine, PhD  
Victoria E. Mateu, PhD  
Claire Moore-Cantwell, PhD  
Laurel L. Perkins, PhD  
Ethan J. Poole, PhD

### Lecturer

Benjamin J. Lewis, MA

## Overview

The goal of the Department of Linguistics is the enrichment of knowledge about the nature, grammar, and history of human language. Linguistics is a theoretical discipline, akin to philosophy, anthropology, and cognitive psychology. It is important for prospective students to understand that studying linguistics is not a matter of learning to speak many languages. Linguistics courses draw examples from the grammars of a wide variety of languages, and the more languages linguists know about in depth (as distinct from possessing fluency in the use of them), the more likely they are to discover universal properties. It is also possible to pursue these universal aspects of human language through the intensive in-depth study of a single language. This accounts for the high proportion of examples from English and familiar European languages found in linguistics courses and research publications.

The core areas of linguistic theory are phonology (phonetics), morphology, syntax, and semantics. A grammar is a system of rules that characterize the phonetics, phonology, morphology, syntax, and semantics of a natural language. The properties of grammars are the central focus of linguistic theory.

Because language is central to all humanistic disciplines, as well as to several social sciences areas, it is studied from many points of view. Linguistics itself cannot be said to recognize a single optimal approach to the subject. Hence, the courses provide a variety of approaches that reflect the diversity of the field.

The Linguistics Department has consistently been ranked among the very best linguistics departments in the country. It offers programs leading to the Bachelor of Arts (BA), Master of Arts (MA), and Doctor of Philosophy (PhD) degrees.

## Undergraduate Study

The undergraduate majors are of three types: (1) a major that concentrates entirely on general linguistics, (2) several majors that combine the basic courses of the general program with a language concentration or other related fields, and (3) a major in Applied Linguistics.

## Graduate Study

The department offers MA and PhD degree programs in Linguistics, and its faculty participate in the programs for [American Indian Studies](#), [Computer Science](#), [International Institute](#), [Philosophy](#), and [Psychology](#). Both the faculty and graduate program are internationally acclaimed, and attract some of the best and brightest graduate students from this country and abroad, with a current graduate student population of 40 students from 10 countries.

The goal of the department's graduate program is to train students as university teachers and as researchers in the major areas of linguistics.

## Theoretical Orientation

The Linguistics Department has a strong theoretical orientation committed to research in formal linguistic theory, addressing questions in the fields of phonetics, phonology, morphology, syntax, and semantics, and at the interfaces of these fields with the fields of psycholinguistics, computational linguistics, mathematical linguistics, historical linguistics, and the linguistic study of particular language areas (especially African languages and Indigenous languages of the Americas).

## Field Work

Linguistics as an empirical science uses cross-linguistic evidence to develop and test theories of human language. In keeping with this goal, the program is committed to training graduate students to analyze primary data in the Field Methods sequence, in which the students work with a native speaker consultant of a little-studied language.

Substantial opportunities to develop fieldwork skills and to test theoretical ideas against novel data are provided, along with department funding for native speaker consultants. Several of the faculty have long experience in fieldwork and provide practical guidance to students embarking on their own field study. Los Angeles is probably the most linguistically diverse city in the U.S., thus providing a living laboratory for field work research.

## Undergraduate Majors

### Linguistics BA

Linguistics is the scientific study of languages as a general phenomenon. It aims to help answer broad questions concerning the nature of human cognition and communication. Students will learn about language universals as well as the ways in which languages differ from one another in terms of their sound patterns,

syntax, and the way they encode meaning. They will also learn about the linguistic theories explaining and constraining linguistic knowledge, informed in part by experimental investigations of child language acquisition and adult language processing. Successful graduates will receive a cognitive science education with a focus on language; they will develop skills in data analysis, analytic reasoning, and experimental methods.

## Learning Outcomes

The Linguistics major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, semantics, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield
- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and use it in research

## Entry to the Major

### Transfer Students

Transfer applicants to the Linguistics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one introduction to linguistics course, two courses from symbolic logic, introductory psychology or psychological statistics, or cultural anthropology, and two years of one foreign language or one year of two different foreign languages.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Linguistics 20; two of the following: Anthropology 4, Philosophy 31, Psychology 10 (or 100A); completion of the equivalent to the sixth level of one foreign language or the equivalent to the third level of two different foreign languages.

### The Major

*Required:* Eleven upper-division or graduate courses including Linguistics 103, 120A, 120B, 120C, two courses from C104, 110, 130, or 132, and two courses from 165A, 165B, 165C (students may substitute courses 200A, 200B, and 200C for 165A, 165B, and 165C respectively if they receive grades of A in 120A, 120B, and 120C respectively and have consent of instructor); and three upper-division elective courses from the Linguistics Department (minimum 4 grade units each).

### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A

in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

### Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127, 132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

### The Major

No more than one course from 197, 198A, 198B, and 199 may be applied toward the major.

One linguistics-related course (minimum 4 graded units) offered by another department may be applied toward the elective in consultation with the Linguistics Department undergraduate student affairs officer.

A 2.0 grade-point average in linguistics courses is required for the major.

## Applied Linguistics BA

The Applied Linguistics major investigates linguistic issues relevant to the everyday world, shedding light on the nature of language and language use. Students will learn linguistic theory, the study of the structure of human language generally. With its focus on service learning, students will also learn linguistic practice, engaging in the community, schools, and work places of our geographic setting. Successful graduates will be well acquainted with language use from a variety of perspectives and experiences, and will be able to apply this knowledge to a wide variety of practices including language teaching, speech pathology, and translation and interpretation.

## Learning Outcomes

The Applied Linguistics major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield

- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and use it in research

## Entry to the Major

### Transfer Students

Transfer applicants to the Applied Linguistics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of one foreign language or one year of two different foreign languages, one introduction to linguistics course, one introduction to psychology course, and one introduction to linguistic anthropology course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Anthropology 4 or Psychology 10, Linguistics 20, and completion of the equivalent to the sixth level of one foreign language or the equivalent to the third level of two different foreign languages.

### The Major

*Required:* Ten upper-division courses as follows: Linguistics 102 (or 103), 119A (or 120A), 120B, 130 or C140, three courses selected from Linguistics C104, 115, 120C, 130, C140, M141, 144, M146, 170, two upper-division elective courses taught in the Linguistics Department (minimum 4 graded units each), and one course selected from Anthropology 151, M152P, 152Q, 152R, 153, 154P, 154Q, M156, 159, Arabic 180, 181, Armenian 110, Chicana/o and Central American Studies 164XP, M167XP, M170XP, Communication 119, M125, M144A, French 105, German 140, Hebrew 180A, 180B, Iranian 131, Linguistics M116, M146, M176A, M176B, M177, M178, Portuguese 100A, 100B, Slavic CM114, Spanish 100A, 100B, 160, or a linguistics-related course (minimum 4 graded units) offered by another department in consultation with the Linguistics Department undergraduate student affairs officer.

### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

### Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127,

132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

### The Major

No more than one course from 197, 198A, 198B, and 199 may be applied toward the major.

A 2.0 grade-point average in linguistics courses is required for the major.

## Linguistics and Anthropology BA

The Linguistics and Anthropology major combines the basic courses of the general linguistics program with that of anthropology, the study of humankind. Students will learn linguistic theory, the study of the structure of human language generally. They will also learn the many ways in which language affects human history, social identity, social interaction, and politics. Successful graduates will be well acquainted with linguistic structure, language diversity, and language typology, as well as the anthropological and social consequences of the nature of human language.

### Learning Outcomes

The Linguistics and Anthropology major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield
- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and linguistic anthropology, and use it in research

### Entry to the Major

#### Transfer Students

Transfer applicants to the Linguistics and Anthropology major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one introduction to linguistics course and two years of one foreign language or one year of two different foreign languages. One cultural and communication course is strongly recommended.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Anthropology 4, Linguistics 20, and completion of the equivalent to the sixth level of one foreign language or the equivalent to the third level of two different foreign languages.

### The Major

*Required:* Eleven upper-division courses as follows: Linguistics 102 (or 103), 110, 119A (or 120A), 120B or 127, M146 (or Anthropology M150); two courses from 114, 120C, 144, 160, 161, 170; one course from Anthropology 151 or Sociology CM124A (or Communication M144A); and three upper-division electives from the Anthropology 130 series (one course only), the 150 series (one course only), the 160 series (one course only), Sociology CM124A (or Communication M144A), CM125 (or Communication M125).

### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

### Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127, 132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

### The Major

A 2.0 grade-point average in linguistics courses is required for the major.

## Linguistics and Asian Languages and Cultures BA

The major combines the basic courses of the general linguistics program with that of East Asian languages and cultures, focusing on one of the three language tracks (Chinese, Japanese, Korean). Students are able to study the civilizations of China, Korea, Japan, and India; and enrich their knowledge about the nature, grammar, and history of human language at the same time.

### Learning Outcomes

The Linguistics and Asian Languages and Cultures major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield
- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and use it in research

### Entry to the Major

#### Transfer Students

Transfer applicants to the Linguistics and Asian Languages and Cultures major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of either Chinese, Japanese, or Korean, one introduction to linguistics course, one cultural anthropology course, one Chinese, Japanese, or Korean civilization course, and one year of a second foreign language.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Anthropology 4, Linguistics 20, and either Chinese 50, Japanese 50, or Korean 50, as appropriate; completion of the equivalent to the sixth level in either Chinese, Japanese, or Korea, and the equivalent to the third level of a second foreign language.

### The Major

*Required:* Eleven upper-division courses as follows: Linguistics 103, 110, 120A, 120B, 165A (or 165B), one upper-division elective course in the Linguistics Department (minimum 4 graded units); for the Chinese track: Chinese 100A, 100B, 100C (or 100D, 100E, 100F; or 100I), two courses from Asian 104, Chinese 101A, 101B, 101C, 103, 110A, 110B, 110C, C120, 130A, 130B, 165; for the Japanese track: Japanese 100A, 100B, 100C (or 100S), two courses from Asian 104, Japanese 101A, 101B, 101C, 110A, 110B, M120, CM123 (or CM127), 130A, 130B; for the Korean track: Korean 100A, 100B,



100C, two courses from Asian 104, Korean 101A, 101B, 101C, 103A, 103B, 103C, C105A, C105B, C105C, CM120, CM127.

### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

### Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127, 132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

### Policies

#### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

#### The Major

A 2.0 grade-point average in linguistics courses is required for the major.

## Linguistics and Computer Science BA

The major combines the basic courses of the general linguistics program with that of computer science, accommodating students who want professional preparation in computer science but do not necessarily have a strong interest in computer systems hardware. The goal of linguistics is the enrichment of knowledge about the nature, grammar, and history of human language. Linguistics is a theoretical discipline, akin to philosophy, anthropology, and cognitive psychology.

### Learning Outcomes

The Linguistics and Computer Science major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield

- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and use it in research
- Understanding of human language systems as computational devices
- Understanding of fundamental concepts applicable to engineering problems in natural language processing

### Entry to the Major

#### Transfer Students

Transfer applicants to the Linguistics and Computer Science major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one introduction to linguistics course, two calculus courses, four computer programming courses, and two years of one foreign language or one year in each of two foreign languages. One discrete structures course and one probability theory course are recommended.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Linguistics 20, Computer Science 31, 32, 33, 35L, Mathematics 31A or 31AL, 31B, 61, 70, completion of the third term in one foreign language.

#### The Major

*Required:* Eleven upper-division courses as follows: Linguistics 102 (or 103), 119A (or 120A), 120B, 120C, 165A (or 165B or 165C), 185A, one course selected from C104, 127, 132, 165A, 165B, 165C, 180, 185B; Computer Science 131, 132 or 161, 180, 181.

#### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

### Policies

#### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

#### The Major

A 2.0 grade-point average in linguistics courses is required for the major.

## Linguistics and English BA

The major combines the basic courses of the general linguistics program with that of English. Students are able to study the literatures and

cultures of those parts of the world in which English is the primary language, the history and structure of the English language itself, and enrich their knowledge about the nature, grammar, and history of human language at the same time.

### Learning Outcomes

The Linguistics and English major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield
- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and use it in research

### Entry to the Major

#### Transfer Students

Transfer applicants to the Linguistics and English major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one introduction to linguistics course, one critical reading and writing course, one year of English literature survey courses, and two years of one foreign language or one year of two different foreign languages.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Linguistics 20, English 4W (or 4HW), 10A, 10B, 10C, completion of the equivalent to the sixth level of one foreign language or the equivalent to the third level of two different foreign languages.

#### The Major

*Required:* Eleven upper-division courses as follows: Linguistics 103, 110, 120A, 120B, 165A or 165B (or 200A or 200B with a grade of A in 120A or 120B respectively and consent of instructor), one upper-division elective in the Linguistics Department (minimum 4 graded units), two courses selected from English 113A, 120, 141B, or Linguistics 170, and three elective courses selected from English 113A, 120, 140A, 140B, 141B, 150A, 150B, 151, the 150 series (one course only), the 160 series (one course only), the 170 series (one course only).

#### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.



## Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127, 132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

### The Major

A 2.0 grade-point average in linguistics courses is required for the major.

The same course may not be used to satisfy more than one upper-division major requirement.

## Linguistics and Philosophy BA

The major combines the basic courses of the general linguistics program with that of philosophy, for students who are reflective about their beliefs or who wish to become so. Students enrich their knowledge about the nature, grammar, and history of human language, and are given the opportunity to ponder the foundations of almost any other subject to which they are exposed—whether history, religion, government, law, or science.

## Learning Outcomes

The Linguistics and Philosophy major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, semantics, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield
- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and use it in research

## Entry to the Major

### Transfer Students

Transfer applicants to the Linguistics and Philosophy major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one introduction to linguistics course, one symbolic logic course and two courses

from introduction to philosophy of mind, philosophy of science, skepticism and rationality, meaning and communication, or language and identity, and two years of one foreign language or one year of two different foreign languages.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Linguistics 20, Philosophy 31, and two courses from Philosophy 7, 8, 21, 23, M24 (or Linguistics M7), and completion of the equivalent to the sixth level of one foreign language or the equivalent to the third level of two different foreign languages.

### The Major

*Required:* Eleven upper-division courses as follows: Linguistics 102 (or 103), 119A (or 120A), 120B, 120C, 165B (or 165C or 180), one upper-division elective in the Linguistics Department (minimum 4 graded units); five upper-division philosophy courses in selected from Philosophy 124 through 135, 170, 172, 174, 180, 181, 184, of which at least two must be from C127A, C127B, 172.

### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

## Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127, 132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

### The Major

A 2.0 grade-point average in linguistics courses is required for the major.

## Linguistics and Psychology BA

The major combines the basic courses of the general linguistics program with that of psychology. Students are able to study and explain human and animal behavior, both normal and abnormal, as well as enrich their knowledge about the nature, grammar, and history of human language.

## Learning Outcomes

The Linguistics and Psychology major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield
- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to access scholarly literature on language structure and use it in research

## Entry to the Major

### Transfer Students

Transfer applicants to the Linguistics and Psychology major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one introduction to linguistics course, one introduction to psychology course, one introduction to cognitive science course, one psychological statistics course, one psychology research methods course, and two years of one foreign language or one year of two different foreign languages. One introduction to programming course is strongly recommended.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Linguistics 20, Psychology 10, 85, 100A, 100B, and completion of the equivalent to the sixth level of one foreign language or the equivalent to the third level of two different foreign languages. Program in Computing 10A is strongly recommended.

### The Major

*Required:* Eleven upper-division courses (six in linguistics and five in psychology) as follows: Linguistics 102 (or 103), 119A (or 120A), 120B, two of 115, 130, 132, C135, or C140, and one upper-division elective course in the Linguistics Department (minimum 4 graded units; multiple-listed courses may not be applied). Linguistics 165A, 165B, and whichever of 130, 132, and C135 has not been used to satisfy the requirement, are strongly recommended. Also required are Psychology 120A, 121, one course selected from Psychology 130, 133B, or 133E, and two elective courses selected from Psychology 115, M116A, M117C, 118, M119L, 124A, 124C, 130, 133B, 133C, 133E, 133F, 186A, 186B.

## Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

## Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127, 132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

### The Major

A 2.0 grade-point average in linguistics courses is required for the major.

## Linguistics and Spanish BA

The major combines the basic courses of the general linguistics program with that of Spanish. Students are able to study the Spanish language, literatures, and cultures of the Hispanic heritage, as well as enrich their knowledge about the nature, grammar, and history of human language.

## Learning Outcomes

The Linguistics and Spanish major has the following learning outcomes:

- Ability to apply critical thinking skills through linguistic data analysis in phonetics, phonology, syntax, and at least one other subfield
- Understanding of advanced theoretical concepts and/or analytical techniques in at least one subfield
- Ability to write technical material in linguistics, including language description and theory-based analysis
- Ability to engage scholarly literature on language structure and use it in research

## Entry to the Major

### Transfer Students

Transfer applicants to the Linguistics and Spanish major with 90 or more units must com-

plete as many of the following introductory courses as possible prior to admission to UCLA: two years of Spanish; one Spanish composition course; one Spanish, Portuguese, and nature of language course; one Spanish civilization course or one Spanish American civilization course; one introduction to linguistics course; and one year of a second foreign language.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Linguistics 20, Spanish 25 (or 27), M35, 42 (or 44), and completion of the equivalent to the fifth level of Spanish, and completion of the equivalent to the third level of a second foreign language.

### The Major

*Required:* Eleven upper-division courses as follows: Linguistics 103, 110, 120A, 120B, 165A (or 165B), one upper-division elective course in the Linguistics Department (minimum 4 graded units), Spanish 100A, 100B, 119, 160, and one additional upper-division Spanish course.

### Honors Program

Departmental honors are awarded at graduation to those students who have a grade-point average of 3.6 or better in their junior and senior years and who have received a grade of A in Linguistics 198A and 198B or in 199. Qualified students may be proposed by any member of the faculty to the faculty as a whole for the award of highest honors on the basis of a piece of research in linguistics completed at UCLA.

## Computing Specialization

Students may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Program in Computing 10A and 10B and 10C (or Computer Science 31 and 32), Linguistics 185A, Mathematics 61, and one course selected from Linguistics C104, 127, 132, 165A, 165B, 165C, 180, 185B. Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the major.

Students who complete an advanced upper-division language course are considered to have completed the equivalent of whatever courses are requisite to that advanced language course (e.g., if students complete German 152, they have automatically satisfied the requirement of the sixth level of work in German).

### The Major

A 2.0 grade-point average in linguistics courses is required for the major.

# Undergraduate Minor

## Linguistics Minor

The Linguistics minor is designed for students for whom training in linguistic analysis could be an enhancement to their major programs, and for students who are interested in language(s) but do not have time in their undergraduate programs to pursue multi-quarter language sequences. In addition, the minor provides students with a way to design custom joint degrees with linguistics where the Linguistics Department does not have an existing joint degree program combining linguistics and another field.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better.

## The Minor

*Required Lower-Division Course (5 units):* Linguistics 20.

*Required Upper-Division Courses (27 to 30 units):* Six courses, which must include Linguistics 102 (or 103), 119A (or 120A), 120B, two elective courses selected from C104 through 185B, and an additional elective linguistics course, which may be upper- or lower-division.

Students who plan to complete the 165 course series must first take the corresponding 120 course series.

## Policies

Linguistics 20 must be passed with a letter grade of C or better prior to beginning upper-division coursework in the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

# Graduate Major

## Linguistics MA, CPhil, PhD

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## American Sign Language Lower-Division Courses

**1. Elementary American Sign Language. (5)** Lecture, five hours. Introduction to fundamentals of American sign language. P/NP or letter grading.

**2. Elementary American Sign Language. (5)** Lecture, five hours. Enforced prerequisite: course 1. Introduction to fundamentals of American sign language. P/NP or letter grading.

**3. Elementary American Sign Language. (5)** Lecture, five hours. Enforced prerequisite: course 2. Introduction to fundamentals of American sign language. P/NP or letter grading.

**4. Intermediate American Sign Language. (5)** Lecture, five hours. Enforced prerequisite: course 3 or 8. Intermediate American sign language. P/NP or letter grading.

**5. Intermediate American Sign Language. (5)** Lecture, five hours. Enforced prerequisite: course 4. Intermediate American sign language. P/NP or letter grading.

**6. Intermediate American Sign Language. (5)** Lecture, five hours. Enforced prerequisite: course 5. Intermediate American sign language. P/NP or letter grading.

**8. Intensive Elementary American Sign Language. (15)** Lecture, 20 hours. Not open to students with credit for course 3 or students who have learned, from whatever source, enough American sign language to qualify for more advanced courses. Intensive elementary instruction in American sign language equivalent to courses 1, 2, and 3. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M115. Enforcing Normalcy: Deaf and Disability Studies. (4)** (Same as Disability Studies M115.) Lecture, three hours. Exploration of historical, medical, social, political, philosophical, and cultural influences that have constructed categories of normalcy, disability, and deafness. Building on writing of Michel Foucault and critical work in field of disability studies, inquiry into institutions that have enforced standards of normalcy throughout 19th and 20th centuries to present. Primary attention to rise of medical authority in West, history of eugenics, and contemporary bioethics issues confronting disability and deaf communities. P/NP or letter grading.

**M120. History of Deaf Communities in America. (4)** (Same as History M147E.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study of history and culture of deaf communities in America (circa 1800 to present) by exploring major events impacting deaf people, including development of sign language, deaf education, audism, politics of deafness, eugenics, deaf revolution movements, and role of hearing technology. Historical development of emergence, growth, and survival of America's deaf community and development of deaf identity over time. P/NP or letter grading.

**121. History of Mass Media and Deaf Community. (4)** Lecture, three hours. Historical survey of mass media (print, film, television, and Internet) as sources and interpreters of deafness and deaf people within context of U.S. social and cultural history. Examination of historical changes in products of mass media within deaf community and ways of critiquing media sources. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Linguistics

### Lower-Division Courses

**1. Introduction to Study of Language. (5)** Lecture, three hours; discussion, one hour. Summary for general undergraduates of what is known about human language; biological basis of language, scientific study of language and human cognition; uniqueness of human language, its structure, universality, its diversity; language in social and cultural setting; language in relation to other aspects of human inquiry and knowledge. P/NP or letter grading.

**2. Language in U.S. (5)** Lecture, four hours; discussion, one hour (when scheduled). Survey of languages of U.S. (American Indian languages, oldest immigrant languages, ethnic and regional varieties of English, and newest arrival languages) and social and political aspects of American language use. P/NP or letter grading.

**3. American Sign Language: Structure and Culture. (5)** Lecture, four hours; discussion, one hour (when scheduled). Knowledge of American Sign Language (ASL) not required. Introduction to principles of linguistics through study of structure of American Sign Language and culture of deaf Americans. Phonology, morphology, syntax of ASL, historical change, signed language universals, education, identity, and ASL literature. P/NP or letter grading.

**M4. Language and Evolution. (5)** (Same as Indo-European Studies M70.) Lecture, three hours; discussion, one hour. *Homo Sapiens* is only species on Earth with capacity to create infinite number of utterances from small inventory of speech sounds. How and why our species developed this ability is question of fundamental scientific and humanistic importance. Survey of origin of human language from number of intellectual perspectives, including linguistics, anthropology, and evolutionary biology. Exploration of relationship between language faculty and linguistic theory. P/NP or letter grading.

**5. World Languages. (5)** Lecture, four hours; discussion, one hour (when scheduled). Introduction to linguistic diversity of world and to such core areas of linguistics as study of sound production and patterning

(phonetics and phonology), word formation (morphology), and sentence formation (syntax). Structural characteristics of world languages and methods of classifying languages into families and types. Detailed discussion of representative languages with audiovisual illustrations to acquaint students with distinctive features of several key language families. Discussion of such linguistic concepts as pidgins and creoles, unaffiliated languages, language contact, and language endangerment, together with related sociopolitical issues. P/NP or letter grading.

**6. Out of Mouths of Babes. (4)** Lecture, six hours. How children acquire language, most complex of human cognitive achievements. Look at amazing linguistic abilities of infants and their first perception and production of speech sounds, then investigation of how children learn words and rules for producing and understanding sentences. Language acquisition in special populations such as children acquiring sign languages, bilingual children, and people acquiring language beyond critical period. Focus mainly on English, with consideration of other languages. Offered in summer only. P/NP or letter grading.

**M7. Language and Identity. (5)** (Same as Philosophy M24.) Lecture, four hours; discussion, one hour (when scheduled). How do we use language to project our own identity? How do we use it to perceive or shape identity of others? Introduction to speech act theory and various claims that speech act theory can account for systematic subordination of women; marginalizing of racial minorities; and, in some cases, incitement to violence through hate speech. Provides foundation for students of linguistic theory, philosophy, sociology, anthropology, and communication studies. P/NP or letter grading.

**8. Language in Context. (4)** Lecture, four hours; discussion, one hour (when scheduled). How is meaning of language influenced by world around us? Introduction to pragmatics, speech acts, ordinary language philosophy, and linguistic relativity. Good foundation for students of linguistic theory, philosophy, sociology, anthropology, and communication studies. P/NP or letter grading.

**9W. Linguistic Humor: Amusing and Abusing with Language. (5)** Seminar, five hours. Prerequisite: English Composition 3. Study of how principles of science of linguistics are applied in analyzing language structure. Data from humor and other amusements, such as secret languages (Pig Latin and more). Introduction to basics of linguistics analysis, including language sound systems, syntactic analysis, word structure, word meaning, and pragmatics. Focus on nature of language as innate part of human biology that allows people from all cultural and linguistic backgrounds to adapt language for humorous purposes, albeit shaped by culture as to what counts as funny. Satisfies Writing II requirement. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to Linguistic Analysis. (5)** Lecture, four hours; discussion, one hour (when scheduled). Introduction to theory and methods of linguistics: universal properties of human language; phonetic, phonological, morphological, syntactic, and semantic structures and analysis; nature and form of grammar. P/NP or letter grading.

**40W. Language and Gender: Introduction to Gender and Stereotypes. (5)** (Formerly numbered Applied Linguistics 40W.) Lecture, four hours; discussion, two hours. Enforced prerequisite: English Composition 3. Prior knowledge of foreign languages not required. Introduction to language from sociological perspective of gender. Use of research and examples in English and other languages to explore nature of male and female genderlects and gendered language, as reflected in lexicon, language behavior, phonetics and intonation, and language acquisition and linguistic change. Satisfies Writing II requirement. Letter grading.

**88A-88B. Lower-Division Seminars. (4-4)** Seminar, three hours. Limited to freshmen/sophomores. Variable topics; consult Schedule of Classes, College of

Letters and Science, or department for topics to be offered in specific term. May be repeated for credit. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics in Linguistics. (1 to 4)** Seminar, three hours; fieldwork, two hours. Variable topics offered by departmental faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**102. Introduction to Applied Phonetics. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: course 20. Not open for credit to students with credit for course 103. Basics of articulation and acoustics of phonetic categories used in world's languages, including English in comparison with other languages. Practice in speech-sound perception and transcription using International Phonetic Alphabet (IPA). Applications to language learning/teaching and other fields. P/NP or letter grading.

**103. Introduction to General Phonetics. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: course 20. Not open for credit to students with credit for course 102. Phonetics of variety of languages and phonetic phenomena that occur in languages of world. Extensive practice in perception and production of such phenomena. P/NP or letter grading.

**C104. Experimental Phonetics. (5)** (Formerly numbered 104.) Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 102 or 103. Survey of principal techniques of experimental phonetics. Use of laboratory equipment to investigate acoustic properties of speech. Topics include experimental design; theoretical basis of acoustic structure of speech sounds; computer-based speech processing and analysis. Concurrently scheduled with course C204A. P/NP or letter grading.

**105. Morphology. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: course 20. In linguistics, morphology is study of word structure. Morphological theory seeks to answer questions such as how should words and their component parts (roots, prefixes, suffixes, vowel changes) be classified crosslinguistically? how do speakers store, produce, and process complex words (words with affixes, compounds)? how do speakers know how to produce correct word forms even when they have not previously heard them and how do speakers know that particular words are well-formed or ill-formed? is there principled distinction in traditional division between inflection and derivation? how can we best account for variation in forms that are same (e.g., root in keep/kept even though vowels are different)? can we formulate crosslinguistic generalizations about word structure? P/NP or letter grading.

**110. Introduction to Historical Linguistics. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 20, 102 or 103, 119A or

120A. Methods and theories appropriate to historical study of language, such as comparative method and method of internal reconstruction. Sound change, grammatical change, semantic change. P/NP or letter grading.

**110G. Introduction to Historical Linguistics for Graduate Students. (2)** Lecture, four hours. Limited to and designed for entering linguistics graduate students to help remedy entrance deficiencies in historical linguistics. Basic historical linguistics: methods and theories appropriate to historical study of language, such as comparative methods and method of internal reconstruction. Sound change, grammatical change, semantic change. S/U grading.

**C111. Intonation. (5)** (Formerly numbered 111.) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 102 or 103, and 119A or 120A or 120B. Recommended requisite: course C104. Survey of intonational theory for English and other languages, with particular emphasis on phonological models of intonation. Students learn to transcribe intonational elements. Concurrently scheduled with course C211. P/NP or letter grading.

**114. American Indigenous Linguistics. (5)** Lecture, four hours; discussion, one hour (when scheduled). Strongly recommended preparation: course 20. Survey of genetic, areal, and typological classifications of American indigenous languages; writing systems for American indigenous languages; American indigenous languages in social and historical context. One or more languages may be investigated in detail. P/NP or letter grading.

**115. Linguistics and Speech Pathology. (2 or 4)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 102 or 103. Introduction to field of speech pathology. Topics include biological foundations of speech, language, and hearing; and disorders of speech production, language, voice, and hearing, affecting children and adults. In-class presentation and final term paper required if taken for 4 units. P/NP or letter grading.

**M116. Introduction to Japanese Linguistics. (4)** (Same as Japanese M120.) Lecture, three hours; discussion, one hour. Enforced requisite: Japanese 3 or 8 or Japanese placement test. Introduction to Japanese grammar and sociolinguistics through reading, discussion, and problem solving in phonology, syntax, semantics, and discourse pragmatics. Letter grading.

**119A. Applied Phonology. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 20, and 102 or 103. Not open for credit to students with credit for course 120A. Sound structures and sound patterns in world's languages. Rules, rule ordering, features, syllable, and higher structure. Comparison of sound patterns of different languages. Tools of phonology as applicable to other fields. P/NP or letter grading.

**120A. Phonology I. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 20, 103. Introduction to phonological theory and analysis. Rules, representations, underlying forms, derivations. Justification of phonological analyses. Emphasis on practical skills with problem sets. P/NP or letter grading.

**120B. Syntax I. (5)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: course 20. Course 120A is not requisite to 120B. Descriptive analysis of morphological and syntactic structures in natural languages; emphasis on insight into nature of such structures rather than linguistics formalization. P/NP or letter grading.

**120C. Semantics I. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 119B or 120B. Survey of most important theoretical and descriptive claims about nature of meaning. P/NP or letter grading.

**127. Syntactic Typology and Universals. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 20. Study of essential similarities and differences among languages in grammatical devices they use to signal the following kinds of concepts: relations between nouns and verbs (case and word order), negation, comparison, existence/location/possession, causation, interrogation, reflexiviza-

tion, relativization, attribution (adjectives), time (tense and aspect), and backgrounding (subordination). Data from a range of languages presented and analyzed. P/NP or letter grading.

**C128A. Romance Syntax: French. (4)** Lecture, four hours; discussion, one hour (when scheduled). Preparation: some knowledge of French (or one Romance language). Enforced requisite: course 120B. Course C128A is enforced requisite to C128B. Aspects of structure of French language, with emphasis on properties of construction not found in English. Concurrently scheduled with course C228A. P/NP or letter grading.

**C128B. Romance Syntax: French. (4)** Lecture, four hours. Preparation: some knowledge of French (or one Romance language). Enforced requisites: courses 120B, C128A. Aspects of structure of French language, with emphasis on properties of construction not found in English. Concurrently scheduled with course C228B. P/NP or letter grading.

**130. Language Development. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 20, 119A or 120A, 119B or 120B. Survey of research and theoretical perspectives in language development in children. Discussion and examination of child language data from English and other languages. Emphasis on universals of language development. Topics include infant speech perception and production, development of phonology, morphology, syntax, and word meaning. P/NP or letter grading.

**132. Language Processing. (5)** Lecture, four hours; laboratory, one hour (when scheduled). Requisites: courses 20, 119A or 120A, 119B or 120B. Central issues in language comprehension and production, with emphasis on how theories in linguistics inform processing models. Topics include word understanding (with emphasis on spoken language), parsing, anaphora and inferencing, speech error models of sentence production, and computation of syntactic structure during production. P/NP or letter grading.

**C135. Neurolinguistics. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 20, 119A or 120A, 119B or 120B. Examination of relationship between brain, language, and linguistic theory, with evidence presented from atypical language development and language disorders in the mature brain. Topics include methodologies to investigate normal and atypical hemispheric specialization for language and children and adults with acquired and/or congenital language disorders. Concurrently scheduled with course C235. P/NP or letter grading.

**C140. Bilingualism and Second Language Acquisition. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 119A or 120A, 119B or 120B. Introduction to study of childhood bilingualism and adult and child second language (L2) acquisition, with focus on understanding nature of L2 grammar and grammatical processes underlying L2/bilingual acquisition. Discussion of neurolinguistic and social aspects of bilingualism. Concurrently scheduled with course C244. P/NP or letter grading.

**M141. Current Methods of Language Teaching. (5)** (Same as English Composition M141.) Lecture, four hours; discussion, one hour. Enforced requisite: course 20. Survey of theory and practice in teaching second languages, including (1) past and present methods used to teach second languages, (2) current theory and practice underlying skills-based instruction and integrated approaches, and (3) factors that affect second language acquisition and learning. Development of knowledge base in and rational base for design, development, implementation, and evaluation of second language instruction programs. P/NP or letter grading.

**144. Fundamentals of Translation and Interpreting. (5)** Lecture, four hours; discussion, one hour. Recommended preparation: knowledge of English and at least one other language. Enforced requisite: course 20. Examination of salient lexical, structural, cultural, and social aspects of translating and interpreting between two languages or dialects. Survey of development of translation theories and rise of community interpreting and critical role of language brokering. P/NP or letter grading.



**M146. Language in Culture. (5)** (Same as Anthropology M150.) Lecture, three hours; discussion, one hour; fieldwork, two hours. Requisite: course 20 or Anthropology 4. Study of language as aspect of culture; relation of habitual thought and behavior to language; and language and classification of experience. Holistic approach to study of language, with emphasis on relationship of linguistic anthropology to fields of biological, cultural, and social anthropology, as well as archaeology. P/NP or letter grading.

**M150. Introduction to Indo-European Linguistics. (5)** (Same as Indo-European Studies M150.) Lecture, four hours; discussion, one hour (when scheduled). Enforced requisite: course 1 or 20. Indo-European languages (ancient and modern), including their relationships, chief characteristics, writing systems, and sociolinguistic contexts; nature of reconstructed Indo-European proto-language and proto-culture. One or more Indo-European languages may be investigated in detail. P/NP or letter grading.

**160. Field Methods. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 102 or 103, 119A or 120A, 119B or 120B. Analysis of language unknown to members of class from data elicited from native speaker of that language. P/NP or letter grading.

**161. Language Documentation. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 20 (enforced), and 105 or 119A or 120A. Issues in documenting languages, including collection of primary data using linguistic field methods, organizing data into documents (annotated texts, dictionaries, multimedia presentations, technical articles), audiences for language documents (speakers of target languages, linguists, scholars outside linguistics, general public), presentation and storage of documents (paper publication, online publication, electronic and physical archives), documenting endangered languages, and organizations and initiatives for documenting endangered languages. Presentations focus on case studies. Student projects in assembling primary data and creating annotated texts with commentary. P/NP or letter grading.

**165A. Phonology II. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 120A. To be taken in term following completion of course 120A or as soon as possible thereafter. Further study in phonological theory and analysis: autosegmental theory, syllable structure, metrical theory, interface of phonology and grammar. P/NP or letter grading.

**165B. Syntax II. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 120B. To be taken in term following completion of course 120B or as soon as possible thereafter. Recommended for students who plan to do graduate work in linguistics. Form of grammars, word formation, formal and substantive universals in syntax, relation between syntax and semantics. P/NP or letter grading.

**165C. Semantics II. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 120C. Recommended for students who plan to do graduate work in linguistics. Further study in relevant logics, relations between sentences, lexical semantics, tense and aspect, adverbs, modality and intentionality. P/NP or letter grading.

**170. Language and Society: Introduction to Sociolinguistics. (5)** (Formerly numbered M170.) Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 20. Study of patterned covariation of language and society; social dialects and social styles in language; problems of multilingual societies. P/NP or letter grading.

**175. Linguistic Change in English. (5)** Lecture, four hours. Requisites: courses 110, 120A, 120B. Principles of linguistic change as exemplified through detailed study of history of English pronunciation, lexicon, and syntax. P/NP or letter grading.

**M176A. Japanese Phonology and Morphology. (4)** (Same as Japanese CM122.) Lecture, three hours; discussion, one hour. Recommended preparation: course 20. Enforced requisite: Japanese 3 or 8 or Japanese placement test. Survey of Japanese phonetics, phonology, and morphology. Letter grading.

**M176B. Structure of Japanese. (4)** (Same as Japanese CM123.) Lecture, three hours; discussion, one hour. Enforced requisite: Japanese 4 or 10 or Japanese placement test. Functional linguistic analysis of grammatical structures of Japanese, often in form of contrastive analysis of Japanese, English, and other languages. Letter grading.

**M177. Structure of Korean. (4)** (Same as Korean CM120.) Lecture, three hours; discussion, one hour. Recommended preparation: two years of Korean, or one year of Korean and some knowledge of linguistics. Discussion of major syntactic, semantic, and pragmatic characteristics of Korean in light of linguistic universals, with brief introduction to formation, typological features, and phonological structure of Korean. Letter grading.

**M178. Contrastive Analysis of Japanese and Korean. (4)** (Same as Japanese CM127 and Korean CM127.) Lecture, three hours; discussion, one hour. Recommended preparation: two years of Japanese and knowledge of Hangul, or two years of Korean and knowledge of Hiragana. Prior linguistic background also recommended. Critical reading and discussion of selected current research papers in syntax, pragmatics, discourse, and sociolinguistics from perspective of contrastive study of Japanese and Korean. Letter grading.

**180. Mathematical Structures in Language I. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 119B or 120B. Recommended: Philosophy 31. Prior mathematics knowledge not assumed. Mathematical introduction to phonology, syntax, and semantics. Elementary material on logic, sets, functions, relations, and trees. P/NP or letter grading.

**185A. Computational Linguistics I. (5)** Lecture, four hours; laboratory, one hour. Requisites: courses 120B, Program in Computing 10C (or Computer Science 32). Recommended: course 165B or 200B. Overview of formal computational ideas underlying kinds of grammars used in theoretical linguistics and psycholinguistics, and some connections to applications in natural language processing. Topics include recursion, relationship between probabilities and grammars, and parsing algorithms. P/NP or letter grading.

**185B. Computational Linguistics II. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 185A. Extension of material in course 185A, with emphasis on computational analysis of current tools and frameworks used in linguistic theory and their cognitive interpretations. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars: Linguistics. (4)** Seminar, three hours. Requisite: course 1 or 20. Research seminar on selected topics. Reading, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**191B. Variable Topics Research Seminars: Linguistics. (2 or 4)** Seminar, three hours. Research seminar on selected topics. Reading, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

**192A-192B. Undergraduate Practicum in Linguistics. (4-2)** Seminar, seven hours (course 192A) and six hours (course 192B). Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students to assist in linguistics courses. Students assist in preparation of materials and development of innovative programs under guidance of faculty members and teaching assistants. May not be applied toward course requirements for any Linguistics Department major. Individual contract required. Information and contracts may be obtained from Linguistics Department. P/NP or letter grading.

**194. Research Group Seminars: Laboratory Research in Linguistics. (1 to 2)** Seminar, one hour; laboratory, three to six hours. Students actively participate in experimental, computational, or fieldwork linguistics research, and have opportunity to learn variety of research methods in laboratory or other collaborative environment. Students may be involved in various kinds of research methods, including administering experiments, data analysis, and/or participating in corpus annotation. Students are expected to attend regular laboratory meetings, if offered. Consult professor in charge to enroll. May be repeated for credit. Individual contract required. P/NP or letter grading.

**195. Community or Corporate Internships in Linguistics. (2 to 4)** Tutorial, to be arranged. Preparation: 3.0 grade-point average in major. Limited to junior/senior majors. Internship in supervised setting in community agency or business related to linguistics and/or applied linguistics. Students meet on regular basis with instructor and provide periodic reports of their experience. Additional supervision to be provided by internship site supervisor. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Linguistics. (2 to 4)** Tutorial, four hours. Requisite: course 1 or 20. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A. Honors Research in Linguistics I. (4)** Tutorial, to be arranged. Preparation: 3.5 grade-point average. Requisite or corequisite: course 165A (or 200A) or 165B (or 200B). Recommended: completion of both courses 165A and 165B (or 200A and 200B) before or during term in which course 198A is taken. Limited to juniors/seniors. Development of honors thesis or comprehensive research project on linguistic topic selected by student under direct supervision of faculty member. Consult professor in charge to enroll. May be repeated for credit. Individual contract required. In Progress grading (credit to be given only on completion of course 198B).

**198B. Honors Research in Linguistics II. (2)** Tutorial, to be arranged. Requisite: course 198A. Limited to juniors/seniors. Completion of honors thesis or comprehensive research project begun in course 198A under direct supervision of faculty member. Consult professor in charge to enroll. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Linguistics. (4)** Tutorial, to be arranged. Limited to senior Linguistics majors. Supervised individual research or investigation of linguistic topic selected by student under guidance of faculty mentor. Culminating paper required. Consult professor in charge to enroll. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Phonological Theory I. (4)** Lecture, four hours. Preparation: graduate linguistics student or grade of A in course 120A or equivalent course in phonology. Courses 200A and 201A form two-course survey of current research in phonological theory. Interaction of phonology with morphology and syntax, syllable structure, stress. S/U or letter grading.

**200B. Syntactic Theory I. (4)** Lecture, four hours. Preparation: graduate linguistics student or grade of A in course 120B or equivalent course in syntax. In-depth introduction to selected topics in theory of constituent structure and syntax of predicates, arguments, and grammatical relations. Topics include levels of representation, X-bar theory, case theory, thematic roles, the lexicon, grammatical function-changing rules, head-complement relations. S/U or letter grading.

**200C. Semantic Theory I. (4)** Lecture, four hours. Overview of current results and research methods in linguistic semantics. Topics include generalized quantifiers and semantic universals, predicate argument structures, variable binding and pronominalization, formal semantic interpretation, syntax and LF, tense, ellipsis, and focus. Letter grading.

**201A. Phonological Theory II. (2 or 4)** Lecture, four hours. Requisite: course 200A. Continuation of course 200A. Second course in two-course survey of current research in phonological theory. Topics include autosegmentalism (tone, tiers, segment structure), feature theory, underspecification, prosodic morphology. S/U (2-unit course) and S/U or letter (4-unit course) grading.

**201B. Syntactic Theory II. (2 or 4)** Lecture, four hours. Requisite: course 200B. In-depth introduction to selected topics in theory of movement processes and topics selected from following areas: WH-movement and related rules, subjacency and other constraints on movement; ECP and related conditions on distribution of empty categories; resumptive pronoun constructions; parametric variation in movement constructions; LF WH-movement; filters; reconstruction; parasitic gaps; barriers theory; control theory; null subject parameter. S/U (2-unit course) and S/U or letter (4-unit course) grading.

**201C. Semantic Theory II. (2 or 4)** Lecture, four hours. Requisite: course 200C. Survey of current approaches to model-theoretic semantics and its relation to current linguistic theory. Approaches include generalized categorial grammars, Montague grammar, Boolean-based systems, generalized quantifier theory, logical form. S/U (2-unit course) and S/U or letter (4-unit course) grading.

**202. Language Change. (4)** Requisites: courses 110, 200A, 200B. Survey of current theories and research problems in language change.

**203. Phonetic Theory. (4)** Requisite: course 120A. Preliminaries to speech analysis. Functional anatomy of vocal organs; fundamental principles of acoustics and of acoustic theory of speech production; issues in perception of speech; nature and design of feature systems for phonetic and phonological analysis.

**C204A. Experimental Phonetics. (5)** (Formerly numbered 204A.) Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 102 or 103. Survey of principal techniques of experimental phonetics. Use of laboratory equipment to investigate acoustic properties of speech. Topics include experimental design; theoretical basis of acoustic structure of speech sounds; computer-based speech processing and analysis. Concurrently scheduled with course C104. S/U or letter grading.

**204B. Speech Production. (4)** Lecture, three hours; laboratory, one hour. Requisite: course 104 or 204A. Survey of topics in speech production research, especially as related to linguistic phonetics. Topics include physiology of vocal tract and models of speech production and articulatory/acoustic relations. Emphasis on use of laboratory methods such as aerodynamic transducers, electroglottography, static and electropalatography, electromagnetic articulography, and imaging techniques. S/U or letter grading.

**204C. Speech Perception. (2 to 4)** Lecture, four hours. Recommended requisite: course 104 (or 204A) or 111 (or 211). Limited to graduate students. Survey of topics in speech perception research. Topics include auditory physiology and psychophysics, categorical speech perception, and cross-linguistic speech perception and word recognition. Emphasis on use of experimental methods such as lexical decision, gating, priming, eye tracking, phoneme monitoring, and word spotting. S/U or letter grading.

**205. Morphological Theory. (4)** Requisites: courses 200A, 200B. Survey of current theories and research problems in morphology. Nature of morphological structure; derivational and inflectional morphology; relation of morphology to phonology, syntax, and the lexicon.

**207. Pragmatic Theory. (2 or 4)** Lecture, four hours. Requisites: courses 200C, 201C. Introduction to formal pragmatic theory. Topics include speech act theory, imperatives, and other illocutionary moods; at-issue/not-at-issue distinction and other projective content; Gricean implicature, conversational implicature, and local implicature; and formal treatments of discourse, including game-theoretic pragmatics. S/U or letter grading.

**208. Mathematical Structures in Language I. (5)** Lecture, four hours; discussion, one hour. Requisite: course 120B. Recommended: Philosophy 31. Prior mathematics knowledge not assumed. Mathematical introduction to phonology, syntax, and semantics. Elementary material on logic, sets, functions, relations, and trees. S/U or letter grading.

**209A. Computational Linguistics I. (5)** Lecture, four hours; laboratory, one hour. Overview of formal computational ideas underlying kinds of grammars used in theoretical linguistics and psycholinguistics. Themes include role of recursion, relationship between structure and interpretation (both PF and LF), relationship between grammars and probabilities, and relationship between derivations and parsing. S/U or letter grading.

**209B. Computational Linguistics II. (5)** Lecture, four hours; laboratory, one hour. Requisite: course 209A. Extensions of basic language processing techniques to natural language processing. Recent models of syntactic, semantic, and discourse analysis, with particular attention to their linguistic sophistication and psychological plausibility. S/U or letter grading.

**209C. Computational Semantics. (4)** Lecture, four hours. Preparation: basic knowledge of semantics. Requisite: course 185A or 209A. Study of algorithms to compute and reason with meanings of sentences and texts. Phenomena such as anaphor resolution, presupposition projection, and tracking time, objects, and space to be covered. S/U or letter grading.

**210A. Field Methods I. (4)** Lecture, four hours. Preparation: grade of B or better in course 103 or in examination on practical phonetics. Requisites: courses 200A, 200B. Analysis of a language unknown to members of class from data elicited from a native speaker of the language. Term papers to be relatively full descriptive sketches of the language. May be repeated for credit with topic change. S/U or letter grading.

**210B. Field Methods II. (4)** Lecture, four hours. Requisite: course 210A in preceding term. Because different languages are investigated in different years, course 210B can only be taken as direct continuation of 210A in same year. When there are multiple sections, continuation must be in same section. May be repeated for credit with topic change. S/U or letter grading.

**C211. Intonation. (5)** (Formerly numbered 211.) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 102 or 103, and 119A or

120A or 120B. Recommended requisite: course C204A. Survey of intonational theory for English and other languages, with particular emphasis on phonological models of intonation. Students learn to transcribe intonational elements. Concurrently scheduled with course C111. S/U or letter grading.

**212. Learnability Theory. (4)** Lecture, four hours. Survey of some of most significant results on capabilities of learners, given precise assumptions about their memory, time, and computational power, and precise assumptions about information provided by environment. S/U or letter grading.

**213A. Grammatical Development. (4)** Requisites: courses 200A, 200B. Recommended: course 130 or 233. Survey of theoretical perspectives and contemporary empirical research in development of syntax and other components of grammar, with particular emphasis on acquisition theory, linguistic theory, and issues of learnability.

**213B. Brain Bases for Language. (4)** Requisites: courses 200A, 200B. Recommended: course C135 or C235. Survey of theoretical perspectives and contemporary empirical research in neurological and cognitive bases for language, language development, and language breakdown.

**213C. Linguistic Processing. (4)** Lecture, four hours. Requisites: courses 165B and/or 200B. Recommended: courses 132 or 232, 201B. Survey of theoretical perspectives and contemporary empirical research in human processing of language (comprehension and/or production), with emphasis on syntactic processing, ambiguity resolution, effects of memory load, and relationship between grammar and processor. S/U or letter grading.

**214. Survey of Current Syntactic Theories. (4)** Lecture, four hours. Requisite: course 201B. Survey of several current syntactic theories, compared with one another and with theory discussed in course 201B, from point of view of theories' relative descriptive and explanatory power. S/U or letter grading.

**215. Syntactic Typology. (2 or 4)** Lecture, four hours. Requisite: course 200B. Current results in word-order universals; genetic classification of world's languages; cross-language properties of specific construction types, including relative clauses, passives, positive and negative coreference systems, agreement systems, deixis systems, and types of sentence complements. S/U or letter grading.

**216. Syntactic Theory III. (2 or 4)** Lecture, four hours. Requisite: course 201B. Selected topics on syntactic theories of anaphora and quantification from the following areas: typology of binding categories (pronouns, anaphors, etc.); theory of locality conditions in binding theory; parametric variation in binding; quantifier movement; existential quantification and unselective binding; strong and weak crossover; superiority; scope interactions; complex quantifier structures. S/U (2-unit course) or letter (4-unit course) grading.

**217. Experimental Phonology. (4)** Lecture, four hours. Requisite: course 200A. Survey of experimental work that bears on claims about speakers' knowledge of phonology, including theories of lexicon, relation between perception and phonology, and universal markedness relations. Letter grading.

**218. Mathematical Structures in Language II. (4)** Lecture, four hours. In-depth study of generalized quantifier theory; selected topics from distinctive feature theory, formal syntax, partial orders and lattices, formal language theory, variable binding operators. May be repeated for credit with consent of instructor. S/U or letter grading.

**219. Phonological Theory III. (2 or 4)** Lecture, four hours. Requisite: course 201A. Current research and issues in phonological theory. Topics include structure of phonological representations, relations between representations, architecture of grammar, and explanations for phonological typology. S/U (2-unit course) or letter (4-unit course) grading.

**220. Linguistic Areas. (4)** Requisites: courses 120A, and 120B or 127. Recommended: courses 165A or 200A, 165B or 200B. Analysis and classification of languages spoken in a particular area (e.g., Africa, the Balkans, South Asia, Southeast Asia, Australia, Ab-

original North America, Aboriginal South America, Far East, etc.). May be repeated for credit with topic change.

**222. Semantic Theory III. (2 or 4)** Lecture, four hours. Requisites: courses 200C, 201C. Introduction of developments in ontology of formal semantics, including plurals as formal object, events, situations, times, and degrees. Presentation of empirical motivation for these developments, and some cross-domain parallels supporting them. S/U or letter grading.

**225. Linguistic Structures. (4)** Lecture, four hours. Requisites: courses 120A, and 120B or 127. Recommended: courses 165A or 200A, 165B or 200B. Phonological and grammatical structure of a selected language and its genetic relationships to others of its family. May be repeated for credit with topic change. S/U or letter grading.

**C228A. Romance Syntax: French. (4)** Lecture, four hours; discussion, one hour (when scheduled). Preparation: some knowledge of French (or one Romance language). Enforced requisite: course 120B. Course C228A is enforced requisite to C228B. Aspects of structure of French language, with emphasis on properties of construction not found in English. Concurrently scheduled with course C128A. S/U or letter grading.

**C228B. Romance Syntax: French. (4)** Lecture, four hours. Preparation: some knowledge of French (or one Romance language). Enforced requisites: courses 120B, C228A. Aspects of structure of French language, with emphasis on properties of construction not found in English. Concurrently scheduled with course C128B. S/U or letter grading.

**230. History of Linguistics. (4)** Requisites: courses 200A, 200B. Aspects of history of linguistics. Different course offerings may deal with different areas of linguistics (e.g., phonology, syntax) or with different historical periods. May be repeated for credit with topic change.

**232. Language Processing. (5)** Lecture, four hours; laboratory, one hour. Central issues in language comprehension and production, with emphasis on how theories in linguistics inform processing models. Topics include word understanding (with emphasis on spoken language), parsing, anaphora and inferencing, speech error models of sentence production, and computation of syntactic structure during production. S/U or letter grading.

**233. Language Development. (5)** Lecture, four hours. Requisites: courses 20, 120A, 120B. Survey of research and theoretical perspectives in language development in children. Discussion and examination of child language data from English and other languages. Emphasis on universals of language development. Topics include infant speech perception and production, development of phonology, morphology, syntax, and word meaning. S/U or letter grading.

**C235. Neurolinguistics. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 20, 119A or 120A, 119B or 120B. Examination of relationship between brain, language, and linguistic theory, with evidence presented from atypical language development and language disorders in the mature brain. Topics include methodologies to investigate normal and atypical hemispheric specialization for language and children and adults with acquired and/or congenital language disorders. Concurrently scheduled with course C135. Graduate students expected to read more advanced neurolinguistic literature and produce research papers of greater depth. S/U or letter grading.

**236. Computational Phonology. (4)** Lecture, four hours. Introduction to computational models of phonology and phonological acquisition. Topics include finite state machines, probabilistic automata, over-constrained models, dynamic programming methods. Letter grading.

**M238. Analyzing Historical Texts. (4)** (Same as History M266C and Indo-European Studies M238.) Seminar, four hours. Designed for graduate students. Analysis of linguistic structure and ethnohistorical context of legal and other documents written by native-

speaking scribes and translators. Topics include paleographic technique and text analysis software. May be repeated for credit. S/U grading.

**239. Research Design and Statistical Methods. (2 or 4)** Lecture, four hours. Topics include identifying and defining research topics, selecting appropriate research design and measurements, designing student experiments, recording, analyzing, and interpreting data. S/U or letter grading.

**C244. Bilingualism and Second Language Acquisition. (5)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 119A or 120A, 119B or 120B. Introduction to study of childhood bilingualism and adult and child second language (L2) acquisition, with focus on understanding nature of L2 grammar and grammatical processes underlying L2/bilingual acquisition. Discussion of neurolinguistic and social aspects of bilingualism. Concurrently scheduled with course C140. Graduate students expected to read more advanced literature, do in-class presentation, and submit graduate-level term paper. S/U or letter grading.

**251A. Topics in Phonetics and Phonology. (4)** Seminar, four hours. Requisite: course 200A. Course 201A, 203, or 204A may be required. Specialized topics in phonetics and phonology. Meets with course 251B. May be repeated for credit. Letter grading.

**251B. Topics in Phonetics and Phonology. (2)** Seminar, four hours. Requisite: course 200A. Course 201A, 203, or 204A may be required. Specialized topics in phonetics and phonology. May not be applied toward MA degree requirements. Meets with course 251A. May be repeated for maximum of 8 units. S/U grading.

**252A. Topics in Syntax and Semantics. (4)** Seminar, four hours. Requisite: course 200B. Course 201B, 201C, 214, 215, or 216 may be required. Specialized topics in syntax and semantics. Meets with course 252B. May be repeated for credit. Letter grading.

**252B. Topics in Syntax and Semantics. (2)** Seminar, four hours. Enforced requisite: course 200B. Course 214, 215, or 216 may be required. Specialized topics in syntax and semantics. May not be applied toward MA degree requirements. Meets with course 252A. May be repeated for credit. S/U grading.

**253A. Topics in Language Variation. (4)** Seminar, four hours. Requisite: course 110. Course 202 may be required. Specialized topics in language variation. Meets with course 253B. May be repeated for credit. Letter grading.

**253B. Topics in Language Variation. (2)** Seminar, four hours. Requisite: course 110. Course 202 may be required. Specialized topics in language variation. May not be applied toward MA degree requirements. Meets with course 253A. May be repeated for credit. S/U grading.

**254A. Topics in Linguistics. (4)** Seminar, four hours. Requisites: courses 200A, 200B. Course 201A, 201B, 201C, 202, 203, 204A, 205, 208, 209A, 209B, 212, 213A, 213C, 214, 215, 216, or 218 may be required. Individual proseminars on topics such as child language, sociolinguistics, neurolinguistics, computational linguistics, psycholinguistics, etc. Meets with course 254B. May be repeated for credit. Letter grading.

**254B. Topics in Linguistics. (2)** Seminar, four hours. Requisites: courses 200A, 200B. Course 201A, 201B, 201C, 202, 203, 204A, 205, 208, 209A, 209B, 212, 213A, 213C, 214, 215, 216, or 218 may be required. Individual proseminars on topics such as child language, sociolinguistics, neurolinguistics, computational linguistics, psycholinguistics, etc. May not be applied toward MA degree requirements. Meets with course 254A. May be repeated for credit. S/U grading.

**260A-260B-260C. Seminars: Phonetics. (2 or 4 each)** Seminar, three hours. Each course may be taken independently for credit. May not be applied toward MA or PhD degree requirements when taken for 2 units. May be repeated for credit. S/U grading.

**261A-261B-261C. Seminars: Phonology. (2 or 4 each)** Seminar, three hours. Each course may be taken independently for credit. May not be applied toward MA or PhD degree requirements when taken for 2 units. May be repeated for credit. S/U grading.

**262A-262B-262C. Syntax Seminar. (2 or 4 each)** Seminar, three hours. Each course may be taken independently for credit. May not be applied toward MA or PhD degree requirements when taken for 2 units. May be repeated for credit. S/U grading.

**263. Seminar: Semantics. (2 or 4)** Seminar, two hours. Graduate students and faculty present ongoing work; review recent research in field; collaborate on joint projects. S/U grading.

**264A-264B-264C. Seminars: Psycholinguistics/Neurolinguistics. (2 or 4 each)** Seminar, three hours. Special topics may include child language, neurolinguistics, psycholinguistics, sociolinguistics, etc. Each course may be taken independently for credit. May not be applied toward MA degree requirements when taken for 2 units. May be repeated for credit. S/U grading.

**265A-265B-265C. American Indian Linguistics Seminar. (1 or 4 each)** Seminar, two hours; fieldwork, four hours. Presentation of research on American Indian linguistics. Each course may be taken independently for credit. May not be applied toward MA or PhD degree requirements when taken for 1 unit. May be repeated for credit. S/U grading.

**266. Seminar: Sociolinguistics. (2 or 4)** Seminar, two hours. Graduate students, faculty, and visitors present ongoing work; review research in field; and prepare for conference. S/U grading.

**275. Linguistics Colloquium. (4)** Preparation: completion of MA requirements. Varied linguistic topics, generally presentations of new research by students, faculty, and visiting scholars. S/U grading.

**276. Linguistics Colloquium. (No credit)** Designed for graduate students. Same as course 275, but taken without credit by students not presenting a colloquium. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**403. Practical Phonetics Training. (1)** Extensive practice in production, perception, and transcription of sounds from a wide range of languages. Concurrently scheduled with practical sections of course 103. S/U grading.

**411A-411B. Research Orientation. (2-2)** Designed for graduate students. Sequence of lectures by department faculty to acquaint new graduate students with research directions and resources of department and elsewhere on campus. May not be applied toward MA or PhD degree requirements. S/U grading.

**422. Practicum: Phonetic Data Analysis. (2)** Designed for graduate students. Workshop in examination of phonetic data, such as sound spectrograms, oscillographic records, and computer output. May not be applied toward MA or PhD degree requirements. S/U grading.

**444. MA Thesis Preparation Seminar. (4)** Seminar, two hours. Regular student presentations of MA thesis topics and progress, with discussion and criticism by other students and faculty. Presentations by faculty and guest speakers on topics relevant to professional development, such as abstract writing and conference presentations, preparing manuscripts for publication, curriculum vitae and personal websites, academic and non-academic careers in linguistics. May not be applied toward MA or PhD degree requirements. S/U grading.

**495. College Teaching of Linguistics. (2)** Seminar, to be arranged. Designed for graduate students. Required of all new teaching assistants. Seminars, workshops, and apprentice teaching. Selected topics, including curriculum development, various teaching strategies and their effects, teaching evaluation, and other topics on college teaching. Students receive unit credit toward full-time equivalence but not toward any degree requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and

graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Directed Studies. (1 to 8)** Preparation: completion of all undergraduate deficiency courses. Directed individual study or research. May be applied toward MA course requirements. May be repeated for credit. S/U grading.

**596B. Directed Linguistic Analysis. (1 to 8)** Preparation: completion of MA degree requirements. Intensive work with native speakers by students individually. May be repeated for credit. S/U grading.

**597. Preparation for MA Comprehensive and PhD Qualifying Examinations. (1 to 8)** Preparation: at least six graduate linguistics courses. May be taken only in terms in which students expect to take comprehensive or qualifying examinations. May not be applied toward MA course requirements. May be repeated for credit. S/U grading.

**598. Research for MA Thesis. (1 to 8)** Research and preparation of MA thesis. May not be applied toward MA course requirements. May be repeated for a maximum of 8 units. S/U grading.

**599. Research for PhD Dissertation. (1 to 16)** Preparation: advancement to PhD candidacy. May not be applied toward PhD course requirements. May be repeated for credit. S/U grading.

## Swahili

### Lower-Division Courses

**1. Elementary Swahili. (4)** Lecture, five hours. Major language of East Africa, particularly Tanzania. P/NP or letter grading.

**2. Elementary Swahili. (4)** Lecture, five hours. Enforced requisite: course 1. Major language of East Africa, particularly Tanzania. P/NP or letter grading.

**3. Elementary Swahili. (4)** Lecture, five hours. Enforced requisite: course 2. Major language of East Africa, particularly Tanzania. P/NP or letter grading.

**4. Intermediate Swahili. (4)** Lecture, four hours. Enforced requisite: course 3. P/NP or letter grading.

**5. Intermediate Swahili. (4)** Lecture, four hours. Enforced requisite: course 4. P/NP or letter grading.

**6. Intermediate Swahili. (4)** Lecture, four hours. Enforced requisite: course 5. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101. Advanced Swahili. (4)** Lecture, four hours. Enforced requisite: course 6. P/NP or letter grading.

**102. Advanced Swahili. (4)** Lecture, four hours. Enforced requisite: course 101. P/NP or letter grading.

**103. Advanced Swahili. (4)** Lecture, four hours. Enforced requisite: course 102. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## MANAGEMENT

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 Jonathan G. Lasch, PhD  
 Jason J.S. Lee, MBA  
 Daniel A. Nathanson, PhD  
 Paul S. Park, JD  
 Matthew D. Pierce, MBA  
 John B. Ullmen, MPP, PhD  
 Michael G. Williams, PhD

### Adjunct Professors

João M. de Figueiredo, MSc, PhD  
 Brian J. Farrell, MBA  
 Iris Firstenberg, PhD  
 Gonzalo Freixes, JD  
 Brian S. Frons, PhD  
 Levon Goukasian, PhD  
 Stephen A. Greene, MBA  
 Peter Guber, LL.M.  
 Jason C. Hsu, MSc, PhD  
 Terry D. Kramer, MBA  
 Robert M. McCann, PhD  
 Jeffrey S. Moorad, JD  
 Gerald Nickelsburg, PhD  
 Harry E. Sloan, JD  
 Eric H. Sussman, MBA  
 Andres Terech, PhD  
 David W. Wessels, PhD

### Adjunct Associate Professors

Heather M. Caruso, PhD  
 Jennifer T. McCaney, PhD  
 Ehud Peleg, MBA, PhD  
 Subramaniam Ramanarayanan, MBA, PhD  
 Lori N. Santikian MA, PhD

### Adjunct Assistant Professors

George J. Abe, MS  
 Susanne Daniels, BA  
 Alexander C. Dill, JD  
 Constança Esteves-Sorenson, PhD

Matthias Kahl, MPhil, MA, PhD  
 James J. Kim, MEng, MBA  
 Dylan B. Minor, PhD  
 Gayle S. Northrop, MBA  
 Matthew A. Schmitt, MS, PhD  
 Nathan M. Wilson, PhD

## Overview

The John E. Anderson Graduate School of Management at UCLA offers a variety of programs leading to graduate degrees at the master's and doctoral levels. These include a professional Master of Business Administration (MBA), a Master of Financial Engineering (MFE), and a Master of Science (MS) in Business Analytics; as well as three MBA programs for working professionals including the Fully Employed MBA program for mid-level and emerging senior leaders, the 22-month Executive MBA program, and the UCLA-NUS Global Executive MBA program in partnership with the National University of Singapore (NUS) Business School, both designed for senior-level managers and executives. A PhD in Management is also offered (an MA degree may be earned in the process of completing PhD requirements). A certificate Executive Program, as well as research conferences and seminars for experienced managers, are also offered.

## Undergraduate Study

The school offers an undergraduate minor in Accounting, and an interdisciplinary minor in Entrepreneurship in conjunction with the College of Letters and Science. Several undergraduate courses in management are also offered. Enrollment in these courses, although open to all UCLA students who have completed the requisites, is limited.

## Undergraduate Minors

### Accounting Minor

The Accounting minor provides students with a comprehensive accounting background.

### Admission

To enter the minor, students must (1) have a minimum cumulative UCLA grade-point average of 3.0, (2) complete all required pre-admission courses with a minimum course grade-point average of 3.0, and (3) receive grades of B or better in Management 1A and 1B. Repetition of more than one pre-admission course or of any pre-admission course more than once results in automatic denial of admission to the minor. Satisfying these requirements does not guarantee admission to the program, as only a limited number of students are admitted each year.

Applications are accepted in fall, winter, and spring quarters. Nontransfer students must apply subsequent to completing 90 units. Transfer students must apply after completing two academic quarters (excluding summer sessions) at UCLA. Decisions are made by the Anderson School Accounting Area.

*Required Pre-admission Courses (31 units minimum):* Economics 1, 2, any statistics course offered or considered transferable to UCLA, Management 1A and 1B (former course 100 taken at UCLA may be substituted), Mathematics 3A or 31A, 3B or 31B or 31E, one Writing II course, Interviewing Workshop Series. If Management 1A and/or 1B are not taken at UCLA, students must complete courses 120A and 122 prior to admission to the minor.

## The Minor

*Required Upper-Division Courses (36 units):* Management 120A, 120B, 122, 127A, and three courses from 108, 109, 123, 124, 126, 127B, 127C, 128, 130A, 142A, 142B, 142C.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Transfer credit for any of the above courses is subject to department approval and is considered only for the pre-admission courses. Only one pre-admission and one upper-division course repeat are allowed.

Each pre-admission and upper-division course must be taken for a letter grade; if taken on a Passed/Not Passed basis, it cannot be applied toward the minor program. Each upper-division course must be completed at UCLA. All courses applied toward minor requirements must receive a grade of C or better. Successful completion of the minor is indicated on the transcript and diploma.

## Entrepreneurship Minor

See the [Entrepreneurship](#) section for a description of the minor.

## Graduate Majors

### Business Analytics MS

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Executive Master of Business Administration

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Fully Employed Master of Business Administration

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Global Executive Master of Business Administration for Asia Pacific

The Anderson Graduate School of Management offers a dual degree program with the National University of Singapore Business School.

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Management MS, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Business Administration

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Programs

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Business Administration/Computer Science MS
- Master of Business Administration/Doctor of Dental Surgery
- Master of Business Administration/Doctor of Medicine
- Master of Business Administration/Juris Doctor

- Master of Business Administration/Latin American Studies MA
- Master of Business Administration/Master of Library and Information Science
- Master of Business Administration/Master of Public Health
- Master of Business Administration/Master of Public Policy
- Master of Business Administration/Master of Science in Nursing
- Master of Business Administration/Master of Urban and Regional Planning

### Master of Financial Engineering

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Management

### Lower-Division Courses

**1A-1B. Principles of Accounting. (4-4)** Lecture, three hours; discussion, one hour. Not open to freshmen. P/NP or letter grading. **1A.** Introduction to financial accounting principles, including preparation and analysis of financial transactions and financial statements. Valuation and recording of asset-related transactions, including cash, receivables, marketable securities, inventories, and long-lived assets. Current liabilities. **1B.** Requisite: course 1A. Completion of balance sheet with emphasis on debt and equity, including in-depth introduction to time value of money concepts. Introduction to partnership and individual income tax accounting.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**88. Lower-Division Seminar: Special Topics in Management. (1 to 4)** Seminar, three hours; outside study, nine hours. Requisite: satisfaction of Entry-Level Writing requirement. Variable topics seminar that examines specific issues or problems and ways that professionals in management approach study of them. Students define, prepare, and present their own research projects with guidance of professional school faculty member. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor.

Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**108. Business Law. (4)** Lecture, three hours. Not open to freshmen. Essentials of contracts, agency, partnerships, corporations, and other select areas of law in a business environment. P/NP or letter grading.

**109. International Business Law. (4)** Lecture, three hours. Recommended requisite: course 108. Study of international business legal environment, including general overview of international laws and organizations and comprehensive review of U.S. regulations of international business transactions. Special emphasis on international litigation, commercial transactions, regulation of investments, multinational corporations, and international banking. P/NP or letter grading.

**120A. Intermediate Financial Accounting I. (5)** Lecture, four hours. Requisite: course 1B. Intermediate-level course in theory and practice of financial accounting. Underlying concepts of asset valuation and income measurement. Measurement and reporting of current and long-term assets, including cash and marketable securities, inventories, plant assets and depreciation, and intangibles. P/NP or letter grading.

**120B. Intermediate Financial Accounting II. (5)** Lecture, four hours. Requisite: course 120A. Intermediate-level course in theory and practice of financial accounting. Underlying concepts of liability recognition and expense, including leases, bonds, and pensions. Shareholder's equity, including earnings per share. Accounting for changing prices. P/NP or letter grading.

**121. Ethical Leadership in Accounting. (4)** Lecture, seven and one half hours. Not open to freshmen. Review of range of ethical considerations in business decisions involving individuals, corporations, society, and international business. Analysis of cases for presentation and discussion. What is ethical dilemma posed? What is range of possible decisions and band of ethical choices supporting them? Offered in summer only. Letter grading.

**122. Management Accounting. (4)** Lecture, three hours. Requisites: course 1B, one statistics course. Nature, objectives, and procedures of cost accounting and control; job costing and process costing; accounting for manufacturing overhead; cost budgeting; cost reports; joint-product costing; distribution cost; standard costs; differential cost analysis; profit-volume relationships and break-even analysis. P/NP or letter grading.

**123. Auditing. (4)** Lecture, three hours. Requisite: course 120B. Comprehensive study of procedures used in verification of financial statements and related information, including ethical, legal, and other professional issues. Auditing of a complete set of financial statements. P/NP or letter grading.

**124. Advanced Accounting. (4)** Lecture, three hours. Requisite: course 120B. Specialized accounting topics in business combinations, consolidated financial statements, branch accounting, leveraged buy-outs, Securities and Exchange Commission, foreign currency transactions, translation of foreign financial statements, partnership ownership changes and liquidations, governmental accounting, and bankruptcy. P/NP or letter grading.

**126. Financial Statement Analysis. (4)** Lecture, four hours. Requisite: course 120B. Comprehensive study of concepts and procedures used to interpret and analyze balance sheet, income statement, and statement of cash flows. Calculation and interpretation of financial ratios and credit analysis. Valuation theory using both discounted cash flows and residual income model. P/NP or letter grading.

**127A. Tax Principles and Policy. (4)** Lecture, three hours. Requisite: course 1B. Study of fundamental income tax problems encountered by individuals and other entities in analyzing business, investment, employment, and personal decisions. Special emphasis on role of tax rules in capital transactions and decision making. P/NP or letter grading.

**127B. Corporate and Partnership Taxation. (4)** Lecture, three hours. Requisite: course 1B. Recommended: course 127A. Study of tax issues arising in formation, operation, and termination of corporations and partnerships. Special emphasis on closely held enterprises, including S corporations. P/NP or letter grading.

**127C. International Taxation. (4)** Lecture, three hours. Recommended requisite: course 127A. Study of two principle areas of international taxation from U.S. regulatory perspective: taxation of American citizens and companies conducting business in international arena (outbound transactions) and taxation of foreign nationals and companies who invest or conduct business in the U.S. (inbound transactions). P/NP or letter grading.

**128. Special Topics in Accounting. (4)** Lecture, three hours. Requisite: course 120B. Selected topics in public accounting, such as audit and fraud examination, mergers and acquisitions, public-company status and going-public process, role of partner, serving entrepreneurial clients, and fund accounting. Discussion of case study of current interest in accounting profession. Business plan preparation. P/NP or letter grading.

**130A. Basic Managerial Finance. (4)** Lecture, three hours. Requisites: course 1B, one statistics course. Not open for credit to students with credit for Economics 106F. Study of financial decision making by business firms, with emphasis on applications of economic and accounting principles in financial analysis, planning, and control. Extensive use of problems and cases to illustrate varied analytical techniques employed in decision making. P/NP or letter grading.

**140. Elements of Production and Operations Research. (4)** Lecture, four hours. Requisites: Mathematics 3A, 3B, 3C. Principles and decision analysis related to effective utilization of factors of production in manufacturing and nonmanufacturing activities. Analytical models and methods for allocation, transportation, inventories, replacement, scheduling, and facilities design. P/NP or letter grading.

**142A. Analytics in Accounting I. (4)** Lecture, three hours. Not open to first years. Introduction to use of models and modeling in decision making, with focus on important types of models, their formulation and application, and insight and information that may be gained from use of modeling. Topics include pivot tables, data tables, lookup functionality, introduction to programming behind spreadsheets, software functionality and efficiency, and more. Applications are focused on accounting and finance, with emphasis on model formulation, interpretation of solutions, and understanding of mathematical versus verbal explanation of situations. Analytical focus on asking question, mastering data, performing analysis, and communication of story. Letter grading.

**142B. Analytics in Accounting II. (4)** Lecture, three hours. Requisite: course 142A. Preparation: intermediate Excel user. Not open to first years. Topics include cleaning and analyzing data, and advanced dashboard techniques, to evaluate accounting data. All applications are related to accounting and finance. Includes developing analytics mindset, data scrubbing and preparation, and data quality. Emphasis on graphical and written techniques to communicate results. Letter grading.

**142C. Analytics in Accounting III. (4)** Lecture, three hours. Requisite: course 142B. Preparation: intermediate Excel user. Not open to first years. Topics include cleaning and analyzing data, and advanced dashboard techniques, to evaluate accounting data. All applications are related to accounting and finance. Includes developing analytics mindset, data scrubbing and preparation, and data quality. Emphasis on graphical and written techniques to communicate results. Letter grading.

**159. Foundations of Business and Entrepreneurship. (4)** Lecture, three hours. Introductory overview of core areas of business and entrepreneurship including accounting, finance, marketing, operations, organization behavior, and strategy. Discussion of concepts in context of large existing organizations, small businesses, and new entrepreneurial ventures. Students gain solid foundational knowledge of components of

business as well as how organizations are managed in increasingly competitive and global economy. Letter grading.

**160. Entrepreneurship and Venture Initiation. (4)** Lecture, three hours; discussion, one hour. Introduction to key concepts of entrepreneurship, including new product development, finance, business plan development, and technology commercialization. Basic tools and personal characteristics required for entrepreneurship. Terminology used by lawyers, accountants, venture capitalists, and other investors when forming and financing new companies to be developed as startups, spinouts from existing company, or acquisitions of existing company (or its assets). Assessment of feasibility of business concept and communication of concept to potential investors, employees, and business partners. Discussion of technology feasibility, intellectual property, and licensing. Letter grading.

**161. Business Plan Development. (4)** Lecture, three hours. Enforced requisite: course 160. Fundamentals of developing effective business plans, both in presentation and written form. Basic principles of designing and articulating plans for sales, marketing, product or service, operations, financials, management, and staffing functions of new startup businesses. How to develop well-written investment-quality business plans and business plan presentations, understand various analytical processes required to produce such plans, improve student writing and oral presentation skills, and formally present their business plans to audience of angel and venture capital investors. Letter grading.

**162. Entrepreneurship and Technology Commercialization. (4)** Lecture, three hours. Designed for juniors/seniors. Introduction to transformation of new knowledge and inventions into viable commercial products and services, with particular emphasis on technology being developed at major research universities like UCLA. Initial emphasis on assessment and protection of intellectual property and early evaluation of technologies to determine potential for commercialization. How intellectual property in its various forms is protected and how rights to these assets are negotiated by parties involved. Examination of nature of contracts and negotiation between university technology transfer offices, researchers, technical experts, and early investors in commercialization space that might lead to patents, licenses, or new business development. Letter grading.

**163. Entrepreneurship and New Product Development. (4)** Lecture, three hours. Designed for juniors/seniors. Introduction to new product innovation and management. Students assume role of product managers in identifying, developing, and commercializing new products through cases, businesses currently in news, team project, and readings to develop critical thinking, decision-making skills, and creativity in launch of successful new product (team project). Letter grading.

**164. Entrepreneurial Finance and Accounting. (4)** Lecture, three hours. Designed for juniors/seniors. Introduction to fundamental concepts of financial management of early-stage companies, with particular emphasis on capital formation of new ventures. Relationship between entrepreneurs and investors and discussion of different goals of founders and investors, including nature of negotiation and relationship between parties over time. Letter grading.

**165. Marketing Principles for Entrepreneurs. (4)** Lecture, three hours. Study and application of analytic frameworks to assess market opportunities and implement marketing strategies for entrepreneurial firms. Letter grading.

**167. Social Entrepreneurship. (4)** Lecture, three hours. Designed for juniors/seniors. Examination of fundamental challenges and opportunities of developing and managing enterprises with social missions. Use of framework to develop strategic implementation plan that incorporates external analysis, organizational assessment, strategy development, and executable action steps and draws on expertise and experience of faculty members and alumni as well as experts in

fields of social entrepreneurship, nonprofit management, and strategic philanthropy who present select topics of interest. Letter grading.

**168. Personal Financial Health: Theory and Practice.** (4) Lecture, three hours. Helps develop class of financially literate students who will be financially secure today and in future. Students gain knowledge, skills, and confidence to take charge of their financial futures and have potential to prosper. Covers many financial decisions made by entrepreneurs. Interplay between financial conditions of business and financial situation of owner is something that many entrepreneurs fail to plan for when they launch new business. Specific topics covered include budgeting, time value of money, installment purchases, protection of assets, principles of investing, retirement and estate planning, psychology of money, income taxes, banking, and credit. Topics from behavioral finance include suboptimal spending, mistakes investors make, and money and happiness. Letter grading.

**169. Entrepreneurial Leadership and Practical Experience.** (4) Lecture, three hours; fieldwork, eight hours. Enrollment by instructor consent. Capstone for undergraduate minor in Entrepreneurship. Application of critical thinking, research skills, and education to one of following experiences: internship at off-site entrepreneurial firm, or active pursuit of entrepreneurial startup idea. Real-world experience supplemented with theoretical knowledge on entrepreneurial leadership, ethics, and professional branding. Letter grading.

**170. Real Estate Finance and Investments.** (4) Lecture, three hours. Exploration of fundamentals of residential and commercial real estate finance, investment, and development. Study of qualitative concepts and quantitative tools necessary to develop real estate decision-making skills. Analysis of variety of case studies of finance, investment, and development projects from U.S., Europe, China, and Japan that highlight opportunities, risks, challenges, and solutions that were unique to each situation. Use of specially prepared Excel models to understand and evaluate financial aspects of transactions, consideration of macroeconomic context, and discussion of its potential impact on real estate finance and investment decisions. P/NP or letter grading.

**180. Special Topics in Management.** (4) Lecture, four hours. Topics of special interest to undergraduate students. Specific subjects may vary each term depending on particular interest of instructors or students. May be repeated for credit. P/NP or letter grading.

**182. Leadership Principles and Practice.** (4) Lecture, six hours. Proven methods for motivating, and inspiring best performance, persuading, and influencing others; leading high-performance teams; creativity and innovation; decision-making, and negotiating skills, both one-on-one and in groups. Organizational examples, simulations, and in-class exercises. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**194. Anderson School of Management Research Group Seminar.** (2) Seminar, two hours. Study and analysis of current topics in management and business. Discussion of current research and literature in research specialty of faculty instructor. P/NP grading.

**195. Community or Corporate Internships in Management.** (2 to 4) Tutorial, to be arranged. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**199. Directed Research in Management.** (2 to 8) Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation of selected research topic under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**201A. Business Forecasting: Turning Numbers into Knowledge.** (4) Discussion, three hours. Preparation: familiarity with linear regression. Examination of one approach to analytical thinking—forcing numerical and textual data into carefully formulated alternative models. Data studied include macroeconomic variables (growth, inflation, unemployment, interest rates, and exchange rates), industry data, and firm data. Letter grading.

**201B. Econometrics and Business Forecasting.** (4) Lecture, three hours. Development of standard topics in applied econometric modeling. Emphasis on assumptions underlying classical normal linear regression model, special problems in application, and interpretation of results. Practical applications extensively developed in student projects.

**202B. Economic Consulting and Applied Managerial Economics.** (4) Lecture, three hours. Prerequisites: courses 402, 405. Use of economic methods to analyze issues of intellectual property, environmental damage, trademark infringement, brand value, and consumer demand. Focus on econometric thinking and problem solving using case studies as basis for lectures and homework. S/U or letter grading.

**203. Behavioral Economics.** (4) Lecture, three hours. Behavioral economics incorporates insights from psychology (and other social sciences) to improve understanding of economic markets and decision making. By relaxing or replacing simplifying assumptions of standard economic models, behavioral economics aims to describe behavior with greater psychological realism and empirical accuracy. Overview of this rapidly developing field, and illustration of its implications for business and policy decisions across variety of contexts. Use of lectures, discussion, group interactions and projects, examination, and problem set to introduce topic of behavioral economics. Letter grading.

**205A. International Business Economics.** (4) Prerequisite: course 405. International business environment, international economic institutions, national and regional trade policies and developments, trends in foreign markets, and international monetary problems, studied for their influence on organization and operation of the international corporation.

**206. Global Trends.** (4) Lecture, three hours. Exploration of recent global trends affecting business. Global trends are social, economic, and geopolitical evolutions that have first-order effects on management practices and business opportunities around world. Global managers need to develop keen sense of these evolutions in order to lead successful businesses that can adapt to and take advantage of global trends. Study improves student understanding of these trends to become better managers. Letter grading.

**209. Managing Complex Business Deals.** (4 or 6) Lecture, three hours. Preparation: familiarity with basic vocabulary and concepts, including basic principles of accounting and valuation. Advanced course in business organization. Examination of structure of business transactions and allocation of control, risk, and return. Topics include venture capital investments, debt and loan agreements, employment agreements, distribution and marketing agreements (including franchising), motion picture production/finance/distribution agreements, and joint ventures. Assigned reading and focus on documents that incorporate terms of business transactions of deals. Concurrently scheduled with Law 239. S/U or letter grading.

**209A-209B. Managing Complex Business Deals.** (209A: 3 or 4/209B: 1 or 2) Lecture, three hours. Preparation: familiarity with basic vocabulary and concepts, including basic principles of accounting and valuation. Course 209A is enforced requisite to 209B. Advanced course in business organization. Examination of structure of business transactions and allocation of control, risk, and return. Topics include venture capital investments, debt and loan agreements, employment agreements, distribution and marketing agreements (including franchising), motion picture production/finance/distribution agreements, and joint ventures. Assigned reading and focus on documents that incorporate terms of business transactions of deals. Concurrently schedule with Law 239. In Progress (209A) and S/U or letter (209B) grading.

**214. Managerial Decision Making.** (4) Lecture, three hours. Introduction to principles of rational judgment and choice, common behavioral biases of managers and consumers, and corrective tools and procedures, drawing heavily on disciplines of psychology and behavioral economics. Topics include decision structuring, chance processes, forecasting, confidence, likelihood judgment, risk perception and risk-taking, decision under uncertainty, multiattribute choice, framing and mental accounting, intertemporal choice, allocation decisions, organizational decision making, choice architecture, happiness, and well-being. S/U or letter grading.

**215A. Negotiations Analysis.** (4) Lecture, three hours. Series of negotiation exercises to foster development of students' negotiation skills and experience. Use of economic concepts and simple analyses in exercise debriefs to gain insight and to develop framework applicable to business negotiations. S/U or letter grading.

**215B. Market Entry Strategy.** (4) Lecture, three hours. Prerequisite: course 420. Analysis of strategic issues encountered by entrepreneurial and established companies in entering new markets. Emphasis on idea generation, timing, industry evolution, entry modes, optimal growth, and competitive interaction. S/U or letter grading.

**217A. Decision Analysis.** (4) Lecture, three hours. Prerequisite: course 402. Managerial decision making occurs in presence of uncertainty which can be about events over which no individual has any control or it can be about what other individuals will do. Framework provided for structuring and analyzing such decisions, with application of framework to such scenarios as product development, litigation, business of treasure hunting, and bidding. S/U or letter grading.

**218. Tools and Analysis for Business Strategy.** (4) Lecture, three hours. Goal is for students to become more comfortable with design, execution, and interpretation of data analysis that can meaningfully inform business strategy formulation. Pedagogical approach is firmly rooted in learning by doing. Use of variety of real-world examples to gain practice with quantitative



methods that can be deployed in business settings to analyze underlying predictors and causes of firm success. Letter grading.

**220. Corporate Financial Reporting. (4)** Lecture, three hours. Requisite: course 403. In-depth treatment of significant corporate financial reporting issues to enhance understanding of financial statements and student ability to interpret and use information contained in these disclosures. Emphasis on economic substance of transactions. S/U or letter grading.

**222. Corporate Decision Making and Incentives. (4)** Lecture, three hours. Requisite: course 403. Use of basic microeconomics to answer what information is needed to make managerial decisions, what incentives are needed to motivate managers, and how information should be recorded to facilitate both. Essential for careers in consulting, private equity, and general management. S/U or letter grading.

**223. Choice Architecture. (4)** Lecture, three hours. Leverages behavioral science principles to solve real societal and policy problems. Through partnerships with health, government, and industry contacts, students work in teams to identify behavioral problems within organizations; test and guide implementation of evidence-based solutions. Provides structured on-ramp to skilled application of behavioral insight in real-world contexts. Ideal for students who want to weave rigorous behavioral insight into their emerging leadership style. Letter grading.

**224. Business Law for Managers and Entrepreneurs. (4)** Lecture, three hours. Introductory course that uses practical approach to teach students to recognize, understand, and manage legal issues. Topics include contract law, litigation process and alternatives, intellectual property law, business formation, corporate law, employment law, collateralized lending, and bankruptcy reorganizations. How to deal with potential legal issues before they become serious problems. S/U or letter grading.

**M225. Law and Management of Nonprofit Organizations. (4)** (Same as Public Policy M229.) Lecture, three hours. Introduction to important legal, financial, and management issues confronting nonprofit organizations. Topics include how to start nonprofit tax-exempt organizations, qualifying and maintaining tax-exempt status under IRC Code Section 501(c)(3), corporate governance, political and legislative activity restrictions, and strategic planning, fundraising, nonprofit accounting, and employment law. S/U or letter grading.

**226. Special Advanced Topics in Accounting. (4)** Lecture, three hours. Requisite: course 403. Examination of advanced topics in accounting that arise in business combinations and international accounting practices, including principles underlying consolidated financial statements, treatment of unconsolidated subsidiaries and affiliate investments, translation of foreign exchange, and valuation of derivatives for hedging exchange risk. S/U or letter grading.

**227. Taxation and Management Decisions. (4)** Lecture, three hours. Requisite: course 403. Examination of impact of taxes on decisions of businesses and investors. Effects of taxes on investment decisions, mergers and acquisitions, capital structure, dividend policies, and employee compensation. S/U or letter grading.

**228. Financial Statement Analysis. (4)** Lecture, three hours. Requisite: course 403. Preparation: course 220 (corporate financial reporting), or comfort with learning new concepts independently prior to covering in class. Development of skills and tools for using financial statements and other information to evaluate and value companies. Financial analysis segment covers use of accounting to evaluate company performance. Forecasting and valuation segment develops of techniques for estimating fundamental value of company, and evaluating estimates. Applied course with some valuation theory, but only cursory reviews of accounting principles. S/U or letter grading.

**231C. Corporate Valuation. (4)** Lecture, three hours. Requisites: courses 408, 430. Lectures, discussions, and student presentations. Issues and analytical tools relevant for valuing projects, divisions, and corporations. Theories of discounted cash flow valuation

(DCF) and relative valuation using market multiples. Theories of practice to value different projects, including IPO, mergers and acquisitions, divestitures, and private firms. Exploration of how real options affect investment decisions and how they can be identified and valued. Letter grading.

**231D. Takeovers, Restructuring, and Corporate Governance. (4)** Lecture, three hours. Requisites: courses 230 (or 430), 408. Process by which corporate control transactions take place; role of market for corporate control in leading to economic restructuring and shifts in resource allocation by corporations. Empirical evidence on economic and capital market reactions to control transactions and to defensive measures by management. Focus on interaction of strategic planning, firm value maximization, and investment decisions in life cycle of growth of firm. S/U or letter grading.

**231E. Managing Finance and Financing Emerging Enterprises. (4)** Lecture, three hours. Requisites: courses 230 (or 430), 403, 408. Designed for second-year graduate students. Emphasis on financial, control, and investment issues confronting rapidly growing companies in entrepreneurial settings. Consideration and selection of financing vehicles that may be appropriate to securing organizations' money requirements. S/U or letter grading.

**232A. Investment Management. (4)** Lecture, three hours. Requisites: courses 230 (or 430), 408. Topics include application of portfolio theory to investment decisions, performance evaluation, and basics of portfolio management strategies. S/U or letter grading.

**232B. Fixed-Income Markets. (4)** Lecture, three hours. Preparation: demonstrable training in statistics. Requisite: course 408. Introduction to fixed-income markets: institutional arrangements in primary and secondary markets; description and analysis of various types of fixed-income instruments; valuation; fixed-income portfolio management; use of derivative instruments and dynamic investment strategies; asset securitization. S/U or letter grading.

**232D. Option Markets. (4)** Lecture, three hours. Requisite: course 408. Organization and role of organized derivative markets, including listed and OTC options and futures: arbitrage and hedging relationships, valuation of derivative trading strategies, and innovations in derivative markets. Students learn fundamentals of hedging and spreading by playing option trading game and writing term paper analyzing their strategies. S/U or letter grading.

**232E. Market and Credit Risk Management. (4)** Lecture, three hours. Requisites: courses 408, 430. Discussion of regulatory environment for both market and credit risk management, data necessary to manage these risks, types of models used for risk management, types of securities and techniques for hedging market and credit risks, performance measurement of risk management systems, and other types of risks that affect risk management, such as operation risk, liquidity risk, commodity risk, weather risk, and model risk. Letter grading.

**232F. Behavioral Finance. (4)** Lecture, three hours. Requisite: course 408. Introduction to and explanation of evidence of anomalous return behavior found in U.S. equities markets. Presentation of some paradigms of stock price movements that are rooted in studies from psychology and explanation of trading activity in equity risk-return paradigm. Introduction to some psychological biases that researchers suspect are inherent to investors. Employment of some results from psychology literature to explain irrationalities encountered in finance literature. Presentation of latest evidence on why individual investors trade and how individual and institutional investors form their portfolios. Letter grading.

**234A. International Financial Markets. (4)** Lecture, three hours. Enforced requisite: course 408. Conceptual understanding of foreign exchange market, Euro-currency market, international bond market, and equity markets in various countries. Emphasis on underlying economic principles, although where relevant, institutional features helpful in understanding structure and operations of markets to be dealt with in detail. S/U or letter grading.

**235. Venture Capital and Private Equity. (4)** Lecture, three hours. Requisite: course 408. Use of cases to study entrepreneurial finance and venture capital. Analysis of issues faced by entrepreneurs who are setting up new firms, as well as decisions of private equity partnership managers and investors. How transactions are structured and why investors and entrepreneurs choose certain contractual arrangements. Development of understanding for institutional context of private equity finance. Time also devoted to leveraged buyouts. S/U or letter grading.

**238. Special Topics in Finance. (4)** Lecture, three hours. Requisites: courses 230 (or 430), 408. Selected topics in finance theory, empirical studies, and financial policy. May be repeated for credit with instructor change. S/U or letter grading.

**240E. Managing Entrepreneurial Operations. (4)** Lecture, three hours. Requisite: course 410. Designed for second-year graduate students. Exploration of operating issues involved in managing entrepreneurial enterprises. Integrative course, building on methodologies, principles, and concepts provided in requisite functional and strategic core courses. Use of extensive readings and case studies to develop skills and philosophical basis for applying managerial concepts to entrepreneurial operations. S/U or letter grading.

**240F. Global Supply Chain Management. (4)** Lecture, three hours. Requisite: course 410. Business environment today is characterized by globalized operations, intense competition, rapid technological change, and short product life cycles. Consequently, firms can no longer afford to operate in isolation. In many industries competition has moved from firm level to supply chain level. Provides understanding of strategic, tactical, and operational issues in supply chain management, with generous attention to emerging digital economy. S/U or letter grading.

**240G. Global Operations Strategy. (4)** Lecture, three hours. Requisite: course 410. Study of challenges of operating globally in range of industries, including software, consulting, automotive, and textile. Several opportunities for hands-on quantitative methods, with strategic perspective throughout. S/U or letter grading.

**241A. Technology Management. (4)** Lecture, three hours. Requisites: courses 410, 411. Management of high-technology firm, including acquisition, creation, and utilization of technology and knowledge assets. Research and product development, product and process technologies, technology regimes, high-technology markets, competition, and technology strategies. Case examples from sectors such as computing, telecommunications, e-business, medical devices, nanotechnology, advanced transportation systems, and electronics. S/U or letter grading.

**246A. Business and Environment. (4)** Lecture, three hours. Overview of many ways in which environmental issues interact with main functional areas of business: finance, marketing, strategy, operations, accounting. Basic introduction to background of environmental issues, with focus primarily on business aspects. Specific topics vary from year to year, but course details what every manager should know about environmental issues in business. S/U or letter grading.

**M247. Intellectual Property for Technology Entrepreneurs and Managers. (2)** (Same as Electrical and Computer Engineering M293.) Seminar, two hours; outside study, four hours. Introduction to intellectual property (IP) in context of technology products and markets. Topics include best practices to put in place before product development starts, how to develop high-value patent portfolios, patent licensing, offensive and defensive IP litigation considerations, trade secrets, opportunities and pitfalls of open source software, trademarks, managing copyright in increasingly complex content ecosystems, and adopting IP strategies to globalized marketplaces. Includes case studies inspired by complex IP questions facing technology companies today. S/U or letter grading.

**250D. Patterns of Problem Solving. (4)** Lecture, three hours. Acquisition of strategies that enhance adaptive planning and real-time judgment, based on findings from brain studies and cognitive research. Design of

tools to respond to emergent uncertainties and to address situations where intense pressures of time and cost are present. Letter grading.

**252. Persuasion and Influence. (4)** Lecture, three hours. Enforced requisite: course 409. Designed for individuals interested in improving their ability to persuade and influence others. Consideration of number of well-studied persuasion and influence strategies that result in greater buy-in for one's ideas, initiatives, proposals, products, and requests. Letter grading.

**254. Incentives and Motivation in Organizations. (4)** Lecture, three hours. Course 254 is open to MBA, EMBA, and FEMBA students. Focus on strategic management of human resources to create value by directly motivating behavior consistent with goals and policies of firm. Motivating effects of different forms of monetary and non-monetary incentives in different types of organizations and for different types of employees and executives. Analysis of cases and interaction with experts in human resource management and compensation practices to develop skills needed to design and implement optimal reward systems for organizations. S/U or letter grading.

**256. Leadership and Ethics. (4)** Lecture, three hours. Series of real-life business situations that pose complex problems of leadership and ethics, so students develop better understanding of how they can successfully address business situations that define their leadership and ethical positions. Letter grading.

**259. Performance Management. (2)** Lecture, three hours. Focus on providing tools and skills that allow students to excel in communicating their vision, inspiring and gaining commitment from stakeholders, and impressing interviewers and investors. Course materials are grounded in empirical research. Skills and techniques learned are broadly generalizable. Experiential exercises to enhance students' abilities in oral and written communications. Letter grading.

**260A. Customer Assessment and Analytics. (4)** Lecture, three hours. Enforced requisite: course 411. Decision-oriented course concerned with marketing research and data-driven marketing analytics. Detailed hands-on understanding of market research methodologies used in strategic assessment of customer perceptions and preferences. Extensive use of case studies. Letter grading.

**260B. Marketing Strategy and Planning. (4)** Lecture, three hours. Requisite: course 411. Development of framework for strategic marketing planning based on customer behavior, market segmentation, product positioning, product life cycle, market responsiveness, and competitive reaction. Within this framework, development of key elements in annual marketing process. Letter grading.

**261A. Sales and Channel Management. (4)** Lecture, three hours. Requisite: course 411. Study of problems in management of sales and distribution channels. Issues of personal selling, account management, determining sales force size, organization, and compensation plans. Coverage of channel selection, conflict, power, and control. Extensive use of case studies. Letter grading.

**261B. Global Marketing Management. (4)** Lecture, three hours. Requisite: course 411. Analysis of opportunities, distinctive characteristics, and emerging trends in foreign markets, including exploration of alternative methods and strategies for entering foreign markets; organizational planning and control; impact of social, cultural, economic, and political differences; and problems of adapting American marketing concepts and methods. Letter grading.

**262. Price Policies. (4)** Lecture, three hours. Requisites: courses 405, 411. Consideration of environment of pricing decision—costs, customer, channels, competition, and regulation. Analysis of when and how to apply specific pricing strategies, including two-part tariffs, quantity discounts, product differentiation, bundling, and auctions. Letter grading.

**263A. Consumer Behavior. (4)** Lecture, three hours. Requisite: course 411. Study of nature and determinants of consumer behavior. Emphasis on influence of sociopsychological factors such as personality, small

groups, demographic variables, social class, and culture on formation of consumers' attitudes, consumption, and purchasing behavior. S/U or letter grading.

**264A. Market Research. (4)** Lecture, three hours. Requisite: course 411. Designed for prospective users of research results rather than for specialists in research. Marketing research is aid to management decision making. Development of problem-analysis skills, providing knowledge of concepts and methods of marketing research, with increased sensitivity to limitations of marketing data. Letter grading.

**264B. Data Analytics for Marketing and Finance. (4)** Lecture, three hours. Enforced requisite: course 402. How to fit predictive models and visualize multivariate data using examples and topics from marketing and finance. Topics include conditional prediction and predictive models, advanced treatment of regression, visualization and graphics, automating analysis for high dimensional data. Use of industry-leading R/Rstudio statistical environment. S/U or letter grading.

**265. Brand Management. (4)** Lecture, three hours. Requisite: course 411. Introduction to considerations in development, implementation, and management of brands. Discussion of challenges to creating and maintaining strong brands. Topics include building brand knowledge and identities, marketing mix and brands, brand architectures, and brand equity. Letter grading.

**266A. New Product Development. (4)** Lecture, three hours. Requisite: course 411. Examination of new product development (NPD) process with objective of learning key tools and methods and applying them to case studies, exercises, and course project. Products viewed through three lenses: quantifiable rational attributes, appeal due to emotional characteristics, and cost/technology/competitive tradeoffs. NPD process also investigated through five key phases: ideation, concept generation and selection, detailed design, prototyping and testing, and ramp-up and product launch. Coverage of mass customization, parallel prototyping, cost reduction, and creativity. Letter grading.

**266B. Advertising and Marketing Communications. (4)** Lecture, three hours. Requisite: course 411. Detailed study of decisions regarding media and forms of advertising and marketing communications to develop integrated strategies. Review of use and effectiveness of advertising and communication tools. Evaluation of advertising and promotional policies from development through implementation. Letter grading.

**267. Digital Marketing Analytics. (4)** Lecture, three hours. Requisites: courses 402, 411. Use of notion of customer life cycle as organizing principle and application to digital marketing context. Frameworks and data-analytical tools for interacting with customers and learning about their preferences as they evolve through four stages of customer life cycle: (1) customer acquisition, (2) initial post-promotion purchasing, (3) mid-maturity purchase and transaction behavior, and (4) customer attrition or switchover to other product lines. S/U or letter grading.

**268. Selected Topics in Marketing. (4)** Lecture, three hours. Requisite: course 411. Study of selected areas of marketing knowledge and thought. Specific subjects vary each term depending on particular interests of instructor and students. Individual projects and reports. May be repeated for credit. S/U or letter grading.

**270C. Web Business. (4)** Lecture, three hours. Doing business on Web. Web infrastructure and ecology. Web business models and strategies. Web business development, operation, and marketing. New frontiers, such as Web services, social networking, and semantic Web. S/U or letter grading.

**M271A. Medtech Innovation I: Entrepreneurial Opportunities in Medical Technology. (4)** (Same as Bioengineering M233A.) Lecture, three hours; outside study, nine hours. Designed for graduate and professional students in engineering, dentistry, design, law, management, and medicine. Focus on understanding how to identify unmet clinical needs, properly filtering through these needs using various acceptance criteria, and selecting promising needs for which potential medtech solutions are explored. Students work in groups to expedite traditional research and develop-

ment processes to invent and implement new medtech devices that increase quality of clinical care and result in improved patient outcomes in hospital system. Introduction to intellectual property basics and various medtech business models. Letter grading.

**M271B. Medtech Innovation II: Prototyping and New Venture Development. (4)** (Same as Bioengineering M233B.) Lecture, three hours; outside study, nine hours. Requisite: course M271A. Designed for graduate and professional students in engineering, dentistry, design, law, management, and medicine. Development of medtech solutions for unmet clinical needs previously identified in course M271A. Steps necessary to commercialize viable medtech solutions. Exploration of concept selection, business plan development, intellectual property filing, financing strategies, and device prototyping. Letter grading.

**272A. Information Systems Project Management. (4)** Lecture, three hours. Methods and tools for project management in information systems (IS) context. Initiating, planning, executing, controlling, reporting, and closing projects. Project integration, scope, time, cost, quality control, and risk management. Sourcing and external procurement. Contracting and managing partner relationships. Change management. S/U or letter grading.

**273. Current Topics in Entertainment, Media, and Sports. (2)** Seminar, two hours. Designed for graduate students. Examination in depth of current issues in entertainment, media, and sports. Topics vary. May be repeated for credit. S/U or letter grading.

**275. Current Topics in Emerging Technologies and Markets. (2)** Seminar, two hours. Designed for graduate students. Examination in depth of current emerging technologies and related market developments. Topics vary. May be repeated for credit. S/U or letter grading.

**M277. Real Estate Finance Law. (1 to 8)** (Same as Law M209.) Lecture, three hours. Concentrated study of law governing financing of land transactions from both national and California perspectives. Topics include California deed of trust, installment land contracts and other mortgaging substitutes, assignments of rents, receiverships, prepayment, foreclosure, priorities, California antideficiency legislation, impact of borrower bankruptcy on mortgage lenders, construction lending, future advances lending, and secondary market. S/U or letter grading.

**277A-277B. Real Estate Finance Law. (277A: 3 or 4/ 277B: 1 or 2)** Lecture, three hours. Course 277A is enforced requisite to 277B. Concentrated study of law governing financing of land transactions from both national and California perspectives. Topics include California deed of trust, installment land contracts and other mortgaging substitutes, assignments of rents, receiverships, prepayment, foreclosure, priorities, California antideficiency legislation, impact of borrower bankruptcy on mortgage lenders, construction lending, future advances lending, and secondary market. Concurrently scheduled with Law 209. In Progress (277A) and S/U or letter (277B) grading.

**278A. Urban Real Estate Financing and Investing. (4)** Lecture, three hours. Requisites: courses 408, 430. Investor-oriented course in which real estate and business trends are evaluated to determine alternative real estate investment opportunities. Use of current financial, economic, and investment theories and techniques to real estate investment opportunities in case studies and short case problems to illustrate development of investment strategies. S/U or letter grading.

**279A. Cases in Real Estate Investments. (4)** Lecture, three hours. Requisites: courses 408, 430. Development of understanding of principal issues involved with real estate investment and finance. Topics include real estate financial analysis and valuation in variety of contexts (single and multifamily residential, commercial/industrial, shopping center, and hotel properties), real estate taxation, real estate law, development process, securitization, REITs, and leasing and workout of troubled properties. S/U or letter grading.

**279B. Entrepreneurial Real Estate Development. (4)** Lecture, three hours. Requisites: courses 278A (or 279A), 408, 430. Introduction to various aspects of real estate development from perspectives of entre-

preneur and investor. Coverage of all types of developments, including single family, multifamily, hotel, office, retail, and industrial. Industry guest speakers to help reinforce principles taught. Real estate development simulation and group presentations to panel of investors included. S/U or letter grading.

**279C. Real Estate Economics, Capital Markets, and Securitization. (4)** Lecture, three hours. Exploration of linkages between real estate, macroeconomy, and capital markets. New insights as to structure and practice of macroeconomic regulation, crisis policy formulation, and related capital markets and real estate outcomes. Letter grading.

**281B. People in Organizations. (4)** Designed for graduate students. Introduction to different philosophical perspectives for understanding human behavior. Theories and concepts important for understanding human behavior in organizations, as well as managerial implications of individual, group, and social behavior. Special attention to knowledge about satisfaction, motivation, and productivity in organizations.

**282. Optimizing Team Performance. (4)** Lecture, three hours. Enforced requisites: courses 409, 414A. Optimization of team performance by diagnosing complex team dynamics and taking appropriate action to improve team functioning to help students strengthen their teamwork skills in ways that are proven to increase effectiveness and performance of teams. Letter grading.

**284C. Managing Entrepreneurial Organizations. (4)** Lecture, three hours. Issues involved in developing and managing entrepreneurial organizations. Topics include organizational growth, managerial tools, strategic planning, organizational design, management development, control systems, leadership, and cultural management. Examination of transitions that individuals must make as organizations grow. S/U or letter grading.

**285A. Leadership, Motivation, and Power. (4)** Discussion, three hours. Designed for graduate students. Theoretical and practical approaches to influencing and motivating people. Relative effectiveness of various leadership styles, different motivation theories, and power tactics from managerial point of view. Use of experience-based learning methods to aid diagnosis and understanding of one's own influence styles. S/U or letter grading.

**285B. Managerial Interpersonal Communication. (4)** Discussion, three hours. Designed for graduate students. Interpersonal and personality factors affecting managerial communications. Styles and modes of communication in one-to-one, group, and large-systems settings. Opportunities offered to deepen understanding of one's own communication styles and skills, considering verbal, nonverbal perceptual, and cross-cultural aspects. S/U or letter grading.

**286. Negotiations Behavior. (4)** Discussion, three hours. Presentation of theoretical principles and concepts from psychology, sociology, and economics through lectures and readings, with focus primarily on improving practical negotiating skills through experiential learning (i.e., negotiations simulations). Participants learn not only to enhance their individual abilities in dyadic and group situations, but also to analyze contexts for most effective application of these skills. S/U or letter grading.

**291. Strategies for Technology-Based Corporate Development. (4)** Lecture, three hours. Enforced requisite: course 420. Focus on key aspects of corporate business development transactions, including strategic deal selection, mergers and acquisitions deal integration, deal structure (including accounting and tax issues), and economic analysis of transactions. Examination of technology and digital media markets. Letter grading.

**M292B. Growth, Science, and Technology. (4)** (Same as Public Policy M280B.) Lecture, three hours. Economic growth and change. Role of advances in science and technology, and actions of maximizing innovators and factors impinging on their behavior. How technological breakthroughs (or discontinuities) can form new industries or transform nature of and population of firms in existing industries. S/U or letter grading.

**M293A. Political Environment of American Business. (4)** (Same as Public Policy M281.) Lecture, three hours. Evaluation of certain criticisms made by business of American political system. Designed to provide clearer understanding of principal features of American politics, especially as they influence business enterprise. S/U or letter grading.

**293C. Ethical Considerations in Business. (4)** Lecture, three hours. Examination of a range of ethical considerations in business decisions involving the individual, corporation, society, and international business. Analysis of cases for classroom presentation and discussion.

**294. Law and Economics Workshop. (2 or 3)** Seminar, two hours. Requisite: course 405 or Economics 201A. Knowledge of empirical methods and basic calculus required. Interdisciplinary speaker series bringing together outside speakers with scholars and students from UCLA Law School and academic departments. Topics include contracts, torts, intellectual property, and business law. Students write graded reaction papers. May be repeated for credit. Concurrently scheduled with Economics 206 and Law 648. S/U or letter grading.

**295A. Entrepreneurship and Venture Initiation. (4)** Exploration in entrepreneurship particularly concerned with formation and operation of new business ventures. Significant and crucial aspects of exploring new business opportunities and starting a business.

**295B. Family Business. (4)** Lecture, three hours. Overview of family business, including what is required for family harmony and business continuity. S/U or letter grading.

**295C. Corporate Entrepreneurship. (4)** Inquiry into nature of entrepreneurship and effective implementation of entrepreneurial strategies in large industrial enterprises. Emphasis primarily on managerial effects aimed at identification, development, and exploitation of technical and organizational innovations, management of new product or process developments, and effective new venture management in a corporate context.

**295D. Business Plan Development. (4)** Lecture, three hours. Enforced requisite: course 295A. Fundamentals of developing effective written business plans. Basic principles of developing plans for sales, marketing, product or service, operations, financials, and management and staffing functions of new startup businesses. S/U or letter grading.

**295F. Social Entrepreneurship. (4)** Lecture, three hours. Exposes future change leaders to different business models for social impact and to fundamental opportunities and challenges of designing, funding, managing, and scaling enterprises with social mission. Through lectures, readings, case studies, speakers and research project, exploration of competitive advantages and limitations of different approaches to creating social impact across sectors—private/for profit, public, and nonprofit. Introduction of frameworks for understanding and analyzing problems facing society and cultivation of critical thinking skills to identify diverse ways to address those problems through sustainable programs and enterprises. Letter grading.

**296. Social Impact Consulting. (2)** Lecture, three hours. Builds skills and competencies of students interested in field of social impact consulting. Through lectures, readings, videos, speakers, and consulting project with social impact organization, students learn and then apply key consulting skills—both consulting-focused, such as project scoping and client management, and nonprofit-focused, such as governance and strategy, impact measurement, and sources of funding. Readings and discussion expose students to best practices of high-performing nonprofits as well as how diversity, equity, and inclusion can create competitive advantage and increase impact of social impact organizations. Letter grading.

**296A. International Business Management. (4)** Discussion, three hours. Identification, analysis, and resolution of managerial issues of policy and action within context of a multinational corporation, with emphasis on problems of adaptation to different sociological, cultural, legal, political, and economic environmental

characteristics on planning, structuring of organizational relationships, and coordination and control in multinational firms. S/U or letter grading.

**297B. International Business Strategy. (4)** Discussion, three hours. Analysis of key strategic problems encountered by multinational corporations entering foreign markets. Application of concepts and theories acquired in other courses to series of complex cases on international business or by use of a complex simulation of competition in global markets. Letter grading.

**297C. International Business Law. (4)** Requisites: courses 205A, 296A. Legal environments in which international business operates; overseas business relationships and organizations; antitrust, taxation, transfer of capital, and technology regulations; patent, trademark, and copyright safeguards; arbitration of international business disputes; expropriation of foreign investments; international business and government relations.

**297D. International Business Negotiations. (4)** Requisite: course 296A. Exploration of international business negotiations of multinational enterprises with governmental agencies and foreign-based firms on a wide range of issues, such as establishment/dissolution of joint ventures, extent of foreign ownership/management control, terms/conditions for technology transfer, investment incentives.

**297E. Business and Economics in Emerging Markets. (4)** Lecture, three hours. Requisite: course 205A or 405. Analysis of changing economic, political, demographic, and sociocultural conditions in developing countries as they affect the business environment. Process of economic growth, market-oriented reforms, and creation of domestic capital markets. Inflation and stabilization programs, identification of business risks and opportunities, as well as tools needed to manage firms under these conditions. S/U or letter grading.

**298D. Special Topics in Management. (4)** Lecture, three hours. Designed for graduate students. In-depth examination of problems or issues of current concern in management, with numerous topics offered each year. May be repeated for credit. Letter grading.

**298E. Special Topics in Management. (2)** Lecture, 90 minutes. Designed for graduate students. In-depth examination of problems or issues of current concern in management, with numerous topics offered each year. May be repeated for credit. Letter grading.

**298F. Special Topics in Management. (1)** Lecture, one hour. Designed for graduate students. In-depth examination of problems or issues of current concern in management, with numerous topics offered each year. May be repeated for credit. Letter grading.

**298G. Special Topics in Management. (4)** Lecture, three hours. Designed for graduate students. In-depth examination of problems or issues of current concern in management, with numerous topics offered each year. May be repeated for credit. S/U grading.

**298H. Special Topics in Management. (2)** Lecture, 90 minutes. Designed for graduate students. In-depth examination of problems or issues of current concern in management, with numerous topics offered each year. May be repeated for credit. S/U grading.

**298I. Special Topics in Management. (1)** Lecture, one hour. Designed for graduate students. In-depth examination of problems or issues of current concern in management, with numerous topics offered each year. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**406. Global Macroeconomy. (4)** Lecture, three hours. Requisites: courses 402, 403, 405. Provides analytical framework required for understanding way changing macroeconomic conditions in world economy affect economic growth, inflation, interest rates behavior, exchange rate determination, global competitiveness, unemployment, and trade account. Provides skills to

enable students to assess critically how developments in world economy affect particular industry environments. Letter grading.

**407. Business Analytics with Spreadsheets. (4)** Lecture, three hours. Prerequisite: course 402. Introduction to uses of analytical methods for making strategic, tactical, and operational decisions arising from accounting, finance, marketing, and production, with focus on three key areas in problem solving: formal problem definition, spreadsheet model formulation, alternatives evaluation. Letter grading.

**422. Analysis and Communications. (4)** Discussion, three hours. Designed for graduate students. Study and practice of oral and written management communications, including audience analysis, persuasion, revising and editing, presentation of technical information, and uses of computer technology. Organized around writing and speaking exercises. Personal attention to students' written communications and oral presentations.

**424. Strategic Business Presenting. (2)** Lecture, 90 minutes. Improvement of strategic business presenting skills such as presentation delivery techniques, visual and verbal persuasion principles, building arguments with supporting evidence, art of business storytelling, and other related topics, with focus on individual student presentations. Letter grading.

**425. Leadership Communication. (4)** Lecture, three hours. Study centers on communicative dimensions of leadership, executive presence, and persuasion. Frameworks allow for emerging and current leaders to excel in presenting sticky messages to investors, executives, boards, clients, and others. Hands-on nature of course allows for considerable communication practice. Student presentations are videotaped and analyzed. Topics include communicating with executive presence, strategic networking, designing compelling visuals, engaging with data, making complex (and technical) information understandable, overcoming message resistance, and creating clear and concise messages. Also covered are question and answer methods, leadership storytelling, and ways to grab and keep attention. Examination of delivery variables such as verbal and non-verbal communication. Message topics can be generated from student needs (e.g., venture capital investors pitch, senior executives or client presentation). S/U or letter grading.

**427. Global Access Program. (8)** Fieldwork, 60 hours. Prerequisites: courses 402, 403, 405, 408, 409, 410, 411, 414A, 420. Limited to Fully Employed MBA program students. Must be taken in Summer and Fall Quarters of third year. Faculty-guided consulting project with international company or U.S. company with international project focus. Establishment of client relationships, identification of problems or strategic questions, design of study, collection and analysis of secondary and primary research data, development of comprehensive business plan, and formal presentation of findings and recommendations. Letter grading.

**430. Corporate Finance. (4)** Lecture, three hours. Prerequisite: course 408. Consideration of broad range of issues faced by corporate financial managers. Analysis of firm's investment and financing decisions. Impact on firm of agency costs and asymmetric information. Study of mergers and acquisitions through use of empirical studies. Security design also covered. Letter grading.

**455E. International Exchange Program. (2 to 16)** Lecture, 30 hours; discussion, 10 hours. Students attend up to four MBA-level courses at institutions with exchange agreements with Anderson School. Some courses may be taught in local language. In addition to learning subject matter of courses, provides opportunity for students to enhance their knowledge of region while exchanging ideas and views with their peers at that institution. S/U grading.

**457A. Fieldwork in Investment Management. (2)** Seminar, two hours; fieldwork, one hour. Four-term course. Introduction to academic theories of portfolio management and management structure. Review of literature to identify investment strategies. Knowledge transfer and training before outgoing and incoming

class leadership transition. In Progress grading (credit to be given only on completion of courses 457B, 457C, and 457D).

**457B. Fieldwork in Investment Management. (2)** Seminar, two hours; fieldwork, one hour. Four-term course. Faculty-guided portfolio-management implementation. Back testing of investment strategy. Visits to portfolio management firms to gain expert guidance. In Progress grading (credit to be given only on completion of courses 457C and 457D).

**457C. Fieldwork in Investment Management. (2)** Seminar, two hours; fieldwork, one hour. Four-term course. Monitoring of implemented strategy. Documentation and analysis of portfolio performance. Development of new strategy for incoming class. In Progress grading (credit to be given only on completion of course 457D).

**457D. Fieldwork in Investment Management. (2)** Seminar, two hours; activity, one hour. Four-term course. Culmination and transition of portfolio management project. Formal presentation of new strategy to incoming class and delivery of annual report. Training of incoming class with knowledge transfer and dissemination of tools for back testing. Letter grading.

**458A-458B. Global Immersion: Two-Quarter Plan. (2-2)** For course 458A: lecture, three hours; presentations, site visits, and discussion, 20 hours; for course 458B: fieldwork, three hours; presentations, site visits, and discussion, 20 hours. Course 458A is enforced requisite to 458B. Taught in English. Designed for MBA, EMBA, FEMBA, and GEMBA students. Four on-campus academic sessions and one intensive week in another country for blend of lectures, guest speakers, panel discussions, and company site visits, with focus on doing business in other countries. Exposure to economy, legal and political environment, major industries and businesses, local culture, key historical events, and many aspects of conducting business outside U.S. Taught by school faculty members in conjunction with lectures by faculty members from top institutional partners, as well as local and regional government officials and ministers, local business executives, and influential leaders from country of focus. May be repeated for credit based on program requirements. In Progress (458A) and letter (458B) grading.

**459E. International Exchange. (2 to 4)** Lecture, 15 hours; discussion and assignments, up to 30 hours (2-unit course). Preparation: completion of first-year core courses. Taught in English. Open to EMBA and FEMBA students. Intensive one-week study at international university. Courses taught by faculty members from partner institution in destination country. Topics vary but are tailored to MBA curriculum. S/U or letter grading.

**460A-460B. Managing Finance and Financing Emerging Enterprises. (2-2)** Lecture, three hours. Course 460A is enforced requisite to 460B. Designed for second-year graduate students. Emphasis on financial, control, and investment issues confronting rapidly growing companies in entrepreneurial settings. Consideration and selection of financing vehicles that may be appropriate to securing money requirements of organizations. In Progress (460A) and letter (460B) grading.

**466B. Advanced Financial Policy for Managers. (4)** Lecture, four hours. Limited to Executive MBA program students. Modern financial management deals with decision making under uncertainty for corporate financial management, portfolio investment decisions, financial institutions, and international financial management. Focus on learning sound theoretical tools and applying them in casework. S/U or letter grading.

**468. Macroeconomics and Economic Forecasting. (4)** Lecture, four hours. Limited to Executive MBA program students. Macroeconomic theory and its application to business forecasting. Major economic indicators and their historical description of the U.S. economy; theoretical tools that business economists use to analyze impacts of monetary and fiscal policy; macroeconomic techniques applicable to business decisions. S/U or letter grading.

**472B. Customer Information Strategy. (4)** Lecture, four hours. Limited to Executive MBA program students. Exploration of innovation and marketing of products and services to customers. Use of creativity tools, customer research, and marketing science to create value and allocate resources so as to maximize revenues and profits that result. S/U or letter grading.

**479E. International Exchange: Executive MBA Program. (2 to 4)** Lecture, three hours; discussion and site visits, 20 hours. Preparation: completion of first-year core courses in Executive MBA program. Intensive one-week program in one foreign country, with courses taught by faculty members from partner institutions in destination country. Topics vary but are tailored to MBA curriculum, including but not limited to finance, marketing, global economics, strategy, human resources, operations, and technology management. Exposure to local business practices, company site visits, and exploration of local cultural and historical sites. S/U or letter grading.

**481A-481B. Negotiations Behavior. (2-2)** Lecture, three hours. Course 481A is enforced requisite to 481B. Limited to Global Executive MBA students. Presentation of theoretical principles and concepts from psychology, sociology, and economics through lectures and readings, with focus primarily on improving practical negotiating skills through experiential learning (i.e., negotiations simulations). Participants learn to enhance their individual abilities in dyadic and group situations and to analyze contexts for most effective application of these skills. In Progress (481A) and letter (481B) grading.

**484A-484B. Management of Technology and Innovation. (2-2)** Lecture, three hours. Course 484A is enforced requisite to 484B. Limited to Global Executive MBA students. Problems of managing technological innovation in Asia. Topics include incorporation of technological consideration into strategy, adoption of technological innovation, promoting innovation through organizational design and leadership, e-business, and m-business. In Progress (484A) and letter (484B) grading.

**485. Corporate Entrepreneurship. (4)** Lecture, three hours. Managerial efforts aimed at identification, development, and exploitation of technical and organizational innovations, management of new product or process developments, and effective new venture management in context of large corporations in manufacturing and service industries. Development of awareness and understanding of range, scope, and complexity of issues related to creation of organizational environment that is supportive of entrepreneurial endeavors, and insight concerning effective implementation of technological and organizational innovations in corporate setting. Letter grading.

**488. Business Plan Development. (4)** Lecture, four hours. Enforced prerequisites: courses 487A, 487B. Limited to Executive MBA program students. How to develop business plans, understanding of analytical processes required to produce plans, improvement of student writing and oral presentation skills, and review of business plans of other entities. Writing of one complete business plan and presentation of it to experienced investors. Letter grading.

**489. Entrepreneurship and Venture Initiation. (4)** Lecture, 90 minutes. Limited to Executive MBA program students. Introduction to basic tools and jargon required for entrepreneurship that requires financing or management of intellectual property. Terminology used by lawyers, accountants, venture capitalists, and other investors when forming and financing new companies. Assessment of feasibility of business concept and communication of concept to potential investors, employees, and business partners. S/U or letter grading.

**495. Teaching Assistant Training Seminar. (4)** Seminar, three hours. Preparation: appointment as teaching assistant, associate, or fellow in Anderson-based course. Required of all new teaching apprentices. Designed to prepare students for graduate-level teaching and provide professional development. Discussion of practical and theoretical issues about teaching in graduate business school. Emphasis on adult learning theory and pedagogy, theory versus practice in business, and electronic data interchange



(ED) initiatives within classroom. Students learn about classroom and learning management system (LMS) technologies and how to best utilize them to provide seamless learning experience. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA AGSM graduate adviser and assistant dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Research in Management. (1 to 8)** Directed individual study or research. May be repeated. S/U or letter grading.

**597. Preparation for Qualifying Examinations. (4 or 12)** Preparation for master's comprehensive examination or PhD qualifying examinations. S/U grading.

**598. Thesis Research in Management. (4 or 12)** Research for and preparation of master's thesis. May be repeated. S/U grading.

**599. PhD Dissertation Research in Management. (4 or 12)** Research for and preparation of PhD dissertation. S/U grading.

## Management—Executive MBA

### Graduate Courses

**402. Data Analysis and Management Decisions under Uncertainty. (4)** Lecture, four hours. Limited to Executive MBA program students. Survey of statistical model building, with emphasis on managerial interpretation of statistical summary of data. Classical statistics covered through multiple regression to support courses in finance and marketing that follow. Fundamental approaches to decision making under uncertainty. S/U or letter grading.

**403. Financial Accounting. (4)** Lecture, six hours. Limited to Executive MBA program students. Familiarizes the manager with functions of accounting by focusing on use of external financial reports for evaluating corporate performance and use of accounting information for internal planning and control. S/U or letter grading.

**405. Economic Analysis for Managers. (4)** Limited to Executive MBA program students. Policy-oriented problems in antitrust, tax securities, and environmental regulation. Concepts of microeconomic theory illustrated. Topics include traditional antitrust regulations, new trends in antitrust, private versus government antitrust, securities regulation, environmental regulations, and a business firm's optimal response to regulation.

**408. Financial Policy for Managers. (4)** Lecture, four hours. Limited to Executive MBA program students. Modern financial management deals with decision making under uncertainty for corporate financial management, portfolio investment decisions, financial institutions, and international financial management. Focus on learning sound theoretical tools and applying them in casework. S/U or letter grading.

**409. Organizational Behavior. (4)** Lecture, three hours. Limited to Executive MBA program students. Introduction to organizational behavior for executives, including but not limited to optimal decision making, fostering motivation, and other topics on psychology of leadership. Lecture, discussion, and experiential applications of course concepts. S/U or letter grading.

**410. Operations and Technology Management: Systems, Strategies, and Policies. (4)** Lecture, three hours. Limited to Executive MBA program students. Analysis of strategic and operating policies and decisions for systems that produce goods and services. Examination of role of comprehensive planning, inventories, scheduling of resources, distribution systems, and system location. Comprehensive operating problems. S/U or letter grading.

**411. Marketing Strategy and Policy. (4)** Lecture, four hours. Limited to Executive MBA program students. Strategic marketing decisions, including development of marketing objectives and strategies and implemen-

tation of these strategies through pricing, channel, promotion, and new product decisions. S/U or letter grading.

**414A. Leadership Foundations I. (2)** Lecture, two hours. Limited to Executive MBA program students. Focus on individual problem-solving and decision-making skills. Alternative conceptual frameworks presented for augmenting diagnostic and decision-making skills of individuals. Use of readings, cases, decision simulations, and discussions to explore areas of charting job and career progress, working with others, and shaping work culture. S/U or letter grading.

**414B. Leadership Foundations II. (1)** Lecture, one hour. Limited to Executive MBA program students. Continuation of course 414A, with focus on development of self-assessment and self-reflection skills. Facilitation of self-evaluation of leadership strengths and weaknesses, with emphasis on individual problem solving and decision making and team design and development. Readings, cases, decision simulations, peer coaching, and discussions. In Progress grading (credit to be given only on completion of course 414C).

**414C. Leadership Foundations II. (1)** Lecture, one hour. Limited to Executive MBA program students. Continuation of course 414B. Further exploration of leadership strengths and weaknesses, with emphasis on individual peer coaching, conflict management, individual goal setting, and goal achievement. Readings, cases, decision simulations, peer coaching, and discussions. S/U grading.

**414D. Leadership Foundations III. (1)** Lecture, one hour. Limited to Executive MBA program students. Continuation of course 414C. Facilitation of self-evaluation of leadership strengths and weaknesses, with emphasis on career development, social networks, and organizational design. Readings, cases, decision simulations, peer coaching, and discussions. In Progress grading (credit to be given only on completion of course 414E).

**414E. Leadership Foundations III. (1)** Lecture, one hour. Limited to Executive MBA program students. Continuation of course 414D. Further exploration of leadership strengths and weaknesses, with emphasis on individual leadership and organizational change. Readings, cases, decision simulations, peer coaching, and discussions. S/U grading.

**420. Competitive Strategy and Business Policy. (4)** Limited to Executive MBA program students. Study of general management task of forging a corporate competitive strategy. Emphasis on economics of business rivalry within a variety of industrial settings and implications of changing environments on business strategy.

**421. International Business Residential. (4)** Seminar, six hours. Limited to Executive MBA program students. Focuses on doing business globally. Includes on-campus sessions and intensive week of study in another country with lectures, guest speakers, panel discussions, and company site visits. Exposure to economic, legal and political environments, major industries and businesses, local culture, key historical events, and many aspects of conducting business internationally. Taught by school faculty members in conjunction with lectures by faculty members from top institutional partners, as well as local and regional government officials and ministers, local business executives, and influential leaders from country of focus. S/U or letter grading.

**422. Leadership in Practice. (4)** Lecture, six hours. Limited to Executive MBA program students. Addresses practical decision-making challenges leaders face when confronting decisions alone and in groups. Students learn to recognize cognitive biases in themselves and in others and gain skills to re-calibrate group dynamics in order to achieve better results. These skills are taught experientially through participatory simulations and post-hoc analyses. Letter grading.

**428A-428B. Business Creation Capstone. (6-4)** Lecture, three hours; fieldwork, three hours. Limited to Executive MBA program students. Designed for students interested in launching their own business. Student teams work on business idea and develop compre-

hensive strategy for launching that business. Fulfills MBA comprehensive examination requirement. In Progress (428A) and letter (428B) grading.

**439. Selected Topics in Management. (4)** Seminar, six hours. Limited to Executive MBA program students. Examination of selected problems and issues in area of current concern in management. Letter grading.

**440. Selected Topics in Management. (2)** Seminar, three hours. Limited to Executive MBA program students. Examination of selected problems and issues in area of current concern in management. Letter grading.

**441. Selected Topics in Management. (1)** Seminar, two hours. Limited to Executive MBA program students. Examination of selected problems and issues in area of current concern in management. Letter grading.

**442. Selected Topics in Management. (4)** Seminar, six hours. Limited to Executive MBA program students. Examination of selected problems and issues in area of current concern in management. S/U grading.

**443. Selected Topics in Management. (2)** Seminar, three hours. Limited to Executive MBA program students. Examination of selected problems and issues in area of current concern in management. S/U grading.

**444. Selected Topics in Management. (1)** Seminar, two hours. Limited to Executive MBA program students. Examination of selected problems and issues in area of current concern in management. S/U grading.

**445A. Introduction to Strategic Management Research. (2)** Fieldwork, two hours. Limited to Executive MBA program students. Methods of organizational and strategic analysis to determine relationship of organization with its environment. In Progress grading (credit to be given only on completion of courses 445B and 445C).

**445B. Strategic Management Research. (4)** Fieldwork, four hours. Limited to Executive MBA program students. Preparation of strategic overview of selected company entailing collection and analysis of primary and secondary data, including (but not limited to) interviews of corporate executives, corporate financial and marketing data, industry reports, and customer and competitor interviews and/or surveys. In Progress grading (credit to be given only on completion of course 445C).

**445C. Strategic Management Research. (4)** Fieldwork, four hours. Limited to Executive MBA program students. Further research and analysis of one strategic issue facing selected company and identified in course 445B. Presentation of final reports and evaluation of student efforts by corporate personnel. S/U or letter grading.

## Management—Full-Time MBA

### Graduate Courses

**401A-401B. Foundations of Inclusive Leadership. (1-1)** Lecture, three hours. Course 401A is requisite to 401B. Designed to enhance student knowledge of, and competency in, leadership. Conceptual framework is grounded in principles of individual, group, and organizational behavior. Offers different perspectives on topic of leaderships, with emphasis on development of skills that support effective leadership in diverse situations. Combination of readings, lectures, cases, experiential exercises, and class discussion allows entering MBA students to determine their own leadership strengths and limitations; and to develop plan for maintaining or improving their strengths and identifying potential challenges. In Progress (401A) and letter (401B) grading.

**402. Data and Decisions. (4)** Lecture, three hours. Topics include probabilities, random variables (expectation, variance, covariance, normal random variables), decision trees, estimation, hypothesis testing, and multiple regression models. Emphasis on actual business problems and data. Letter grading.

**403. Financial Accounting. (4)** Lecture, three hours. Designed for graduate students. Introduction to fundamental financial accounting methods and procedures, with emphasis on financial statements. Provides basis for firm understanding of language of business—accounting. Letter grading.

**405. Managerial Economics. (4)** Lecture, three hours. Designed for graduate students. Analysis of consumer, producer, and market behavior. Market structure, pricing, and resource allocation. Applications to managerial strategy and public policy, with emphasis on competition, market power, and externalities. Letter grading.

**408. Foundations of Finance. (4)** Lecture, three hours. Introduction to managerial finance. Topics include time value of money, discounting and present values, valuation of bonds and stocks, risk and return, construction of optimal portfolios, capital budgeting, and weighted average cost of capital. Letter grading.

**409. Organizational Behavior. (4)** Lecture, three hours. Requisites: courses 401A, 401B. Introduction to human resource management function and management of human behavior in organizations. Emphasis on relationships among individuals, groups, and organizational units as they influence managerial process and development of prospective general managers. Letter grading.

**410. Operations Technology Management. (4)** Lecture, three hours. Requisites: courses 402, 403. Principles and decision analysis related to effective utilization of factors of production in manufacturing and nonmanufacturing activities for both intermittent and continuous systems. Production organizations, analytical models and methods, facilities design, and design of control systems for production operations. Letter grading.

**411. Marketing Management. (4)** Lecture, three hours. Principles of market-driven managerial decision making: consumer, competitor, and company analysis, market segmentation, definition of target markets, and product positioning. Management of marketing function: product and pricing decisions, channels of distribution, marketing communications. Letter grading.

**415. Foundations of Ethical Decision Making. (2)** Lecture, three hours. Provides practical tools to help students navigate difficult decisions that leaders routinely face. Study adopts behavioral science approach to understanding ethical behavior in order to examine why good people sometimes do bad things. Answering this question requires understanding of fundamental psychological processes that govern human thought and behavior in ethical domains. These processes can lure anyone into ethical lapses that ruin careers, destroy businesses, and bring shame to individuals and organizations. Understanding these processes gives insights into practical ways of designing one's organization to encourage its members to behave in line with their own stated values. Letter grading.

**416. Global Economics and Business Cycles. (2)** Lecture, three hours. Requisite: course 405. Comprehensive introduction to macroeconomics, with focus on real-world applications and implications. Provides students—as future decision-makers in business world—with framework through which to analyze domestic and global macroeconomic fluctuations and trends that impact business environment. Study of models of long-run and short-run macroeconomy, economic growth and competitiveness, unemployment and inflation, and exchange and interest rates. Includes case studies such as domestic and global consequences of 2007 to 2009 Great Recession, 2020 COVID-19 shock and subsequent inflation, growth stagnations of USSR (1970s and 1980s) and Japan (1990s to present), and Latin American debt crises of 1990s. Letter grading.

**420. Business Strategy. (4)** Lecture, three hours. Evaluation and formulation of organization's overall policies and strategies. Economic, heuristic, and social process approaches to policy formulation, environmental analysis, and organizational appraisal. Senior management's role in managing policy process. Letter grading.

**421A. Communication Development for Leaders. (2)** Lecture, three hours. Course 421A is requisite to 421B. Focus on communication basics and tailored to students' needs—entrepreneurship, interpersonal communications, or public speaking. Students learn skills required to become successful presenter; how to present differing types of materials, apply communication theory and strategy to organize informative and persuasive content, and effectively deliver presentations to varied audiences; how to apply visual and verbal messaging research and theory while analyzing audiences, organize and target messages for maximum persuasive impact, and communicate these messages in persuasive manner. Letter grading.

**421B. Communication Development for Leaders II. (2)** Lecture, three hours. Requisite: course 421A. Focus on providing tools and skills that allow students to excel in communicating their vision, inspiring and gaining commitment from stakeholders, and impressing interviewers and investors. Course materials are grounded in empirical research. Skills and techniques learned are broadly generalizable. Experiential exercises to enhance students' abilities in oral and written communications. Study builds on managerial communication skills from Communication Development for Leaders (course 421A). Letter grading.

**422. Applied Management Research. (8)** Fieldwork, eight hours. Must be taken in second year (or its equivalent for part-time students). Supervised study of an organization, including establishment of client/consultant relationships, identification of problems or strategic questions, design of study, collection and analysis of data, development and reporting of implementable recommendations. Letter grading.

**423A. Introduction to Applied Management Research. (2)** Lecture, two hours. Limited to full-time MBA program students. Must be taken after completion of first year in program. Methods of organizational and strategic analysis to determine relationship of organization with its environment. In Progress grading (credit to be given only on completion of courses 423B and 423C).

**423B-423C. Applied Management Research: Two-Quarter Plan. (4-4)** Fieldwork, four hours. Limited to full-time MBA program students. Must be taken after completion of first year in program. Projects include:

(1) faculty-guided consulting project with private companies, nonprofit organizations, or government agencies; establishment of client relationships, identification of problems or strategic questions, design of study, collection and analysis of secondary and primary research data, development of comprehensive business plan, and formal presentation of findings and recommendations or (2) faculty-guided implementation of one new business or (3) pursuit of one faculty-led special research project worthy of publication in recognized academic research journal. In Progress (423B) and S/U or letter (423C) grading.

**426. Fieldwork in Organizations. (4)** Fieldwork, to be arranged. Preparation: completion of at least two terms of MBA program. Required of all full-time MBA students. Under direction of MBA program senior associate dean or other supervising faculty adviser, students perform supervised practical experience or fieldwork in organization as intern or fellow. Execution of predetermined assignment(s) pursuant to defined program of study that includes reporting and assessment of fieldwork experience through combination of written or oral presentations and may include preparation of evaluations or consulting report correlating to defined program of study. S/U grading.

**428A-428B. Business Creation Capstone. (6-4)** Lecture, three hours; fieldwork, three hours. Limited to full-time MBA program students. Designed for students interested in launching their own business. Student teams work on business idea and develop comprehensive strategy for launching that business. Fulfills MBA comprehensive examination requirement. In Progress (428A) and letter (428B) grading.

**428A-428B. Business Creation Capstone. (6-4)** Lecture, three hours; fieldwork, three hours. Limited to full-time MBA program students. Designed for students interested in launching their own business. Student teams work on business idea and develop comprehensive strategy for launching that business. Fulfills MBA comprehensive examination requirement. In Progress (428A) and letter (428B) grading.

## Management—Fully Employed MBA Graduate Courses

**401. Leadership Foundations. (2)** Lecture, three hours. Designed to enhance student knowledge of, and competency in, leadership. Conceptual framework is grounded in principles of individual, group, and organizational behavior. Offers different perspectives on topic of leaderships, with emphasis on development of skills that support effective leadership in diverse situations. Combination of readings, lectures, cases, experiential exercises, and class discussion allows entering MBA students to determine their own leadership strengths and limitations; and to develop plan for maintaining or improving their strengths and identifying potential challenges. Letter grading.

**402. Data and Decisions. (4)** Lecture, three hours. Topics include probabilities, random variables (expectation, variance, covariance, normal random variables), decision trees, estimation, hypothesis testing, and multiple regression models. Emphasis on actual business problems and data. Letter grading.

**403. Financial Accounting. (4)** Lecture, three hours. Designed for graduate students. Introduction to fundamental financial accounting methods and procedures, with emphasis on financial statements. Provides basis for firm understanding of language of business—accounting. Letter grading.

**405. Managerial Economics. (4)** Lecture, three hours. Designed for graduate students. Analysis of consumer, producer, and market behavior. Market structure, pricing, and resource allocation. Applications to managerial strategy and public policy, with emphasis on competition, market power, and externalities. Letter grading.

**408. Foundations of Finance. (4)** Lecture, three hours. Introduction to managerial finance. Topics include time value of money, discounting and present values, valuation of bonds and stocks, risk and return, construction of optimal portfolios, capital budgeting, and weighted average cost of capital. Letter grading.

**409. Organizational Behavior. (4)** Lecture, three hours. Requisite: course 401. Introduction to human resource management function and management of human behavior in organizations. Emphasis on relationships among individuals, groups, and organizational units as they influence managerial process and development of prospective general managers. Letter grading.

**410. Operations Technology Management. (4)** Lecture, three hours. Requisites: courses 402, 403. Principles and decision analysis related to effective utilization of factors of production in manufacturing and nonmanufacturing activities for both intermittent and continuous systems. Production organizations, analytical models and methods, facilities design, and design of control systems for production operations. Letter grading.

**411. Marketing Management. (4)** Lecture, three hours. Principles of market-driven managerial decision making: consumer, competitor, and company analysis, market segmentation, definition of target markets, and product positioning. Management of marketing function: product and pricing decisions, channels of distribution, marketing communications. Letter grading.

**420. Business Strategy. (4)** Lecture, three hours. Evaluation and formulation of organization's overall policies and strategies. Economic, heuristic, and social process approaches to policy formulation, environmental analysis, and organizational appraisal. Senior management's role in managing policy process. Letter grading.

**422. Applied Management Research. (8)** Fieldwork, eight hours. Must be taken in third year. Supervised study of an organization, including establishment of client/consultant relationships, identification of problems or strategic questions, design of study, collection and analysis of data, development and reporting of implementable recommendations. Letter grading.

**426. Fieldwork in Organizations. (4)** Fieldwork, to be arranged. Preparation: completion of at least three terms of FEMBA program. Under direction of FEMBA program senior associate dean or other supervising faculty adviser, students perform supervised practical experience or fieldwork in organization as intern or fellow. Execution of predetermined assignment(s) pursuant to defined program of study that includes reporting and assessment of fieldwork experience through combination of written or oral presentations and may include preparation of evaluations or consulting report correlating to defined program of study. S/U grading.

**427A-427B. Global Access Program. (5-5)** Fieldwork, 60 hours. Requisites: courses 401, 402, 403, 405, 408, 409, 410, 411, 420. Limited to Fully Employed MBA program students. Must be taken in third year. Faculty-guided consulting project with international company or U.S. company with international project focus. Establishment of client relationships, identification of problems or strategic questions, design of study, collection and analysis of secondary and primary research data, development of comprehensive business plan, and formal presentation of findings and recommendations. In Progress (427A) and letter (427B) grading.

**428A-428B. Business Creation Capstone. (6-4)** Lecture, three hours; fieldwork, three hours. Limited to fully employed MBA program students. Designed for students interested in launching their own business. Student teams work on business idea and develop comprehensive strategy for launching that business. Fulfills FEMBA comprehensive examination requirement. In Progress (428A) and letter (428B) grading.

## Management—Global Executive MBA Asia Pacific Graduate Courses

**402. Data Analysis and Management Decisions under Uncertainty. (4)** Lecture, four hours. Limited to UCLA-NUS Executive MBA program students. Survey of statistical model building, with emphasis on managerial interpretation of statistical summary of data. Classical statistics covered through multiple regression to support courses in finance and marketing that follow. Fundamental approaches to decision making under uncertainty. S/U or letter grading.

**403. Financial Accounting. (4)** Lecture, six hours. Limited to UCLA-NUS Executive MBA program students. Familiarizes the manager with functions of accounting by focusing on use of external financial reports for evaluating corporate performance and use of accounting information for internal planning and control. S/U or letter grading.

**404. Negotiations Behavior. (4)** Lecture, three hours. Presentation of theoretical principles and concepts from psychology, sociology, and economics through lectures and readings, with focus primarily on improving practical negotiating skills through experiential learning (i.e., negotiations simulations). Participants learn to enhance their individual abilities in dyadic and group situations and to analyze contexts for most effective application of these skills. Letter grading.

**406. Strategic Leadership and Implementation. (4)** (Formerly numbered 406A.) Lecture, three hours. Designed to address several fundamental aspects of leading complex organizations, with emphasis on important tasks of developing well-aligned, high-performance organizations and on challenges of leading change in organizations. Enables students to develop organized point of view on strategic leadership and to increase their awareness of themselves as leaders. Letter grading.

**407A-407B. Entrepreneurship and Venture Initiation I, II. (2-2)** Lecture, 90 minutes. Course 407A is requisite to 407B. Limited to UCLA-NUS Executive MBA program students. Introduction to basic tools and jargon required for entrepreneurship that requires financing or management of intellectual property. Terminology used by lawyers, accountants, venture capitalists, and other investors when forming and fi-

ancing new companies. Assessment of feasibility of business concept and communication of concept to potential investors, employees, and business partners. In Progress (407A) and letter (407B) grading.

**410A. Logistics and Operations Management. (2)** (Formerly numbered 410.) Lecture, three hours. Limited to UCLA-NUS Executive MBA program students. Analysis of strategic and operating policies and decisions for systems that produce goods and services. Examination of role of comprehensive planning, inventories, scheduling of resources, distribution systems, and system location. Comprehensive operating problems. In Progress grading (credit to be given only on completion of course 410B).

**410B. Logistics and Operations Management. (2)** Lecture, three hours. Limited to UCLA-NUS Executive MBA program students. Analysis of strategic and operating policies and decisions for systems that produce goods and services. Examination of role of comprehensive planning, inventories, scheduling of resources, distribution systems, and system location. Comprehensive operating problems. Letter grading.

**412. Management of Technology and Innovation. (4)** Lecture, three hours. Problems of managing technological innovation in Asia. Topics include incorporation of technological consideration into strategy, adoption of technological innovation, promoting innovation through organizational design and leadership, e-business, and m-business. Letter grading.

**439. Selected Topics in Management. (4)** Seminar, six hours. Limited to UCLA-NUS Executive MBA program students. Examination of selected problems and issues in area of current concern in management. Letter grading.

**440. Selected Topics in Management. (2)** Seminar, three hours. Limited to UCLA-NUS Executive MBA program students. Examination of selected problems and issues in area of current concern in management. Letter grading.

**441. Selected Topics in Management. (1)** Seminar, two hours. Limited to UCLA-NUS Executive MBA program students. Examination of selected problems and issues in area of current concern in management. Letter grading.

**442. Selected Topics in Management. (4)** Seminar, six hours. Limited to UCLA-NUS Executive MBA program students. Examination of selected problems and issues in area of current concern in management. S/U grading.

**443. Selected Topics in Management. (2)** Seminar, three hours. Limited to UCLA-NUS Executive MBA program students. Examination of selected problems and issues in area of current concern in management. S/U grading.

**444. Selected Topics in Management. (1)** Seminar, two hours. Limited to UCLA-NUS Executive MBA program students. Examination of selected problems and issues in area of current concern in management. S/U grading.

**445A-445B-445C. Management Practicum. (4-2-2)** Fieldwork, to be arranged. Three-term individual or group (three to five students) project on global strategic issues designed to allow students to employ and enhance concepts learned in classroom. In Progress (445A and 445B) and letter (445C) grading.

## Management—Master of Financial Engineering Graduate Courses

**400. Fundamentals of Investments. (2)** Lecture, three hours. Limited to Master of Financial Engineering program students. Essentials of asset pricing and portfolio choice, standard discounted cash flow approaches, and no-arbitrage framework for valuing financial securities. Basic paradigms of asset pricing, such as capital asset pricing model (CAPM), arbitrage pricing theory (APT), and Fama-French Three-Factor model. Development and illustration of dynamic portfolio selection and optimization approaches. Letter grading.

**401. Financial Accounting. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Introduction to concepts of financial accounting and its underlying assumptions, including examination of uses and limitations of financial statements. Discussion of procedural aspects of accounting to enhance understanding of content of financial statements, with emphasis on using accounting information in evaluation of business performance and risk. Examination of use of accounting information in research studies. Letter grading.

**402. Econometrics. (4)** Lecture, six hours. Limited to Master of Financial Engineering program students. Theory and in-depth application of linear regression. Topics include simple linear regression, multiple regression, prediction in multiple regression model, residual diagnostics, detection of outliers, and violations of stochastic assumptions. Letter grading.

**403. Stochastic Calculus. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Economic, statistical, and mathematical foundations of derivatives markets. Basic discrete- and continuous-time paradigms used in derivatives finance, including introduction to stochastic processes, stochastic differential equations, Ito's lemma, and key elements of stochastic calculus. Economic foundations of Black/Scholes no-arbitrage paradigm, including introduction to Girsanov's theorem and changes of measure, representation of linear functionals, equivalent martingale measures, risk-neutral valuation, fundamental partial differential equation representations of derivatives prices, market prices of risk, and Feynman/Kac representations of solutions to derivatives prices. Role of market completeness and its implications for hedging and replication of derivatives. S/U or letter grading.

**404. Financial Decision Making. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Examination of broad range of issues faced by corporate financial managers, including analysis of investment and financing decisions of firms, impact on firms of agency costs and asymmetric information, mergers and acquisitions, private equity, and risk management strategies and tools. Letter grading.

**405. Computational Methods in Finance. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Quantitative and computational tools used in finance, including numerical techniques such as implementation of binomial and trinomial option pricing, lattice algorithms for computing derivative prices and hedge ratios, simulation-based algorithms for pricing American options, and numerical solution of partial differential equations that appear in financial engineering. S/U or letter grading.

**406. Derivative Markets. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Introduction to derivative markets and basic concepts, models, analyses, and technical tools of quantitative finance used in these markets. Derivatives are both exchange traded and over-the-counter securities. Derivative markets are world's largest and most liquid. Organization and role of put and call option markets, futures and forward markets, and their interrelations, with emphasis on arbitrage relations, valuation, and hedging with derivatives. Implementation of derivatives trading strategies, perspective of corporate securities as derivatives, functions of derivatives in securities markets, and recent innovations in derivative markets. S/U or letter grading.

**407. Empirical Methods in Finance. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Econometric and statistical techniques commonly used in quantitative finance. Use of estimation application software in exercises to estimate volatility, correlations, stability, regressions, and statistical inference using financial time series. S/U or letter grading.

**408. Fixed-Income Markets. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Quantitative approach to fixed-income securities and bond portfolio management, with focus on fixed-income security markets. Pricing of bonds and fixed-income derivatives, measurement and

hedging of interest rate risk, dynamic models of interest rates, and management of fixed-income portfolio risk. S/U or letter grading.

**409. Financial Risk Measurement and Management. (4)** Lecture, three hours. Limited to Master of Financial Engineering program students. Examination of financial risk measurement and management, including market risk, credit risk, liquidity risk, settlement risk, model risk, volatility risk, and kurtosis risk. S/U or letter grading.

**410. Applied Finance Project. (4)** Fieldwork, four hours. Limited to Master of Financial Engineering program students. Applied quantitative finance project that explores one quantitative finance problem that might be met in practice and involves development or use of some tools developed in MFE program. S/U or letter grading.

**411. Fieldwork/Research on Financial Engineering. (4)** Fieldwork, to be arranged. Preparation: completion of one term of MFE program. Limited to Master of Financial Engineering program students. Supervised, nonpaid, or paid practical research experience or fieldwork in organization as intern or fellow. Execution of predetermined assignment(s) pursuant to defined program of study that may include formal coursework. May not be applied toward MFE degree requirements. S/U grading.

**412. Trading, Market Frictions, and FinTech. (4)** Lecture, three hours. Examination of financial market infrastructure and mechanism of price formation and discovery. Through lends of market frictions, development of different perspectives on critical phenomena such as bubbles and crashes, short squeezes, and mutual fund runs. Case studies of FinTech unicorns demonstrate how those firms profit from resolving market frictions and how recent technology changes landscape of trading. Discussion of new implications of these technological advancements in stock market (i.e., high-frequency trading) and alternative markets (i.e., bond market and cryptocurrency market). Letter grading.

**415A-415B. Career Development Series. (2-2)** Lecture, three hours. Career search process requires active engagement on part of job candidate. Preliminary action is self-assessment, recognizing and valuing one's own strengths and skills to present oneself to employers as top candidate for target roles. Students identify industry and employers that are aligned with their career goals and utilize career strategies covered, including presenting oneself professionally, networking, strong application documents (résumé, cover letter, e-mails, etc.), and one's ability to communicate their value, during interview process. S/U grading.

**431. Special Topics in Financial Engineering. (2 to 4)** Lecture, three hours. Limited to Master of Financial Engineering program students. In-depth examination of problems or issues in one area of current concern in financial engineering. May be repeated for credit. S/U or letter grading.

## Management—Master of Science in Business Analytics Graduate Courses

**400. Statistical Foundations for Analytics. (4)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Review of mathematics, statistics, and probability concepts utilized in business analytics. Topics include basics of calculus, linear algebra, probability, and statistics. Letter grading.

**401. Machine Learning for Decision Making. (2)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Basics of R programming language as required to succeed as data scientists. Emphasis on how to extend language by function programming and package development. Introduction to scientific document creation and reproducible research in R environment. Letter grading.

**402. SQL and Basic Data Management. (2)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Introduction to and practice in Structured Query Language (SQL) syntax and constructs pertaining to data definitions, data manipulation, and data controls in relational databases using MySQL; and important concepts of data management including data analysis and modeling for relational database management systems (RDBMS). Letter grading.

**403. Optimization. (2)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Introductory course in optimization. Introduction to modeling and spreadsheet modeling, linear programming, logistics and network programming, integer programming, and non-linear programming. Emphasis on model building and solving problems using Excel-based solvers. Letter grading.

**404. Business Fundamentals for Analytics. (4)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Application of economic, financial, and marketing principles to key management decisions within organizations. Analytical tools for better understanding of external business environment in which organizations operate. S/U or letter grading.

**405. Data Management. (4)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Tactics and strategies related to managing, manipulating, storing, and delivering data. Letter grading.

**406. Prescriptive Models and Data Analytics. (4)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Fundamental tools in data analytics, including experimental design and analysis, regression analysis, and model design, and how to implement these approaches using statistical analysis package R. S/U or letter grading.

**407. Data Analytics Industry Seminar I. (2)** Seminar, 90 minutes to three hours. Required of Master of Science in Business Analytics students. Industry guest speaker presentations. S/U or letter grading.

**408. Operations Analytics. (4)** Lecture, three hours. Limited to Master of Science in Business Analytics students. How business analytics can be used to optimize internal processes and resources. Applications and cases that illustrate quantitative techniques and show how to build operational competitive edge based on business analytics. S/U or letter grading.

**409. Competitive Analytics. (4)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Application of data analytics to examine competitive conditions in industry or market. S/U or letter grading.

**410. Customer Analytics. (4)** Lecture, three hours. Limited to Master of Science in Business Analytics students. Analysis of customer data to make better marketing decisions using real-world cases, exercises, and projects to aggregate theories, frameworks, and methods. Estimation of demand-side models that describe, understand, and estimate aspects of consumers' decision-making process. Introduction to marketing-mix models and consumer-choice models. S/U or letter grading.

**411. Fieldwork/Research in Business Analytics. (4)** Fieldwork, eight hours. Preparation: one term of Master of Science in Business Analytics program. Limited to Master of Science in Business Analytics students. Internship with company in proposed area of study. Regular activity reports to faculty adviser. Letter grading.

**412. Business Analytics Supervised Project. (4)** Fieldwork, three hours. Limited to Master of Science in Business Analytics students. Hands-on applied analytics project that helps prepare students for career in quantitative analysis and data science by testing their ability to solve complex analytical business problems in real-world settings. Students hone their communication skills and delve deeply into area of interest beyond classroom. Students learn strategy, business consulting, entrepreneurship, business plan development, primary research collection and analysis, market assessment, financial analysis, and planning. Letter grading.

**413. Industry Seminar II. (2)** Seminar, 90 minutes to three hours. Required of Master of Science in Business Analytics students. Industry guest speaker presentations. S/U or letter grading.

**431. Internet Customer Analytics. (2)** Lecture, three hours (five weeks). Limited to Master of Science in Business Analytics students. Focuses on strategic and tactical issues that come up after foundational stage, specifically those issues related to customer acquisition and customer retention. Introduction of analytics frameworks, data structures, and models needed to support best practices around these issues. S/U or letter grading.

**432. Health Care Analytics. (2)** Lecture, three hours (five weeks). Limited to Master of Science in Business Analytics students. Exploration of opportunities for improvement in design and management of health care systems and operations, using tools such as regression analysis, linear optimization, queuing theory, decision analysis, Monte Carlo simulation, and machine learning techniques. Identification of key operational challenges facing health care managers and techniques for improving efficiency in variety of health care settings, discussion of applications of data analytics and operations management in health care industry, and practical experience with developing quantitative tools and empirical analyses. S/U or letter grading.

**433. Entertainment Analytics. (2)** Lecture, three hours (five weeks). Limited to Master of Science in Business Analytics students. Introduction to business analytics in entertainment industry. Focus on movie studios, television, and online media. Entertainment and media executives have changed way they approach decision making as result of big data and analytics in last two years, including making greater use of specialized analytics tools; employing dedicated data insights team to inform strategic decisions; and relying on enhanced data analytics such as simulation, optimization, or predictive analytics. Examination of content as it is produced by studios and then goes from one stage to another, being shown in theater, broadcast on television, and Internet. Analytics of providing content looking both at investment needed to produce and disseminate content, and how revenues are being extracted covered at each stage. S/U or letter grading.

**434. Advanced Workshop on Machine Learning. (2)** Lecture, three hours (five weeks). Limited to Master of Science in Business Analytics students. Concise introduction to theory and practice of neural networks and deep learning. Discussion of some of mathematical foundations behind main algorithms. Application-centered, practical course. S/U or letter grading.

**435. Data Visualization. (2)** Lecture, three hours (five weeks). Limited to Master of Science in Business Analytics students. Offers solid basis for working with data and for exploring discipline. Collection, visualization, analysis, and processing of big data through lectures, case studies, and intensive class project. Tableau and Python are used. Addresses both theoretical underpinning of domain and intensive applied computing component. S/U or letter grading.

**436. Fraud Analytics. (2)** Lecture, three hours (five weeks). Limited to Master of Science in Business Analytics students. How to build analytics side of fraud detection model systems. Covers all algorithmic aspects of solving fraud problem, in particular how to approach and design algorithmic solution. Focus on algorithmic development. Does not address software engineering aspects of building and fielding fraud solution. Topics covered are background for building real-time fraud detection systems and forensic accounting principles. S/U or letter grading.

**437. Forecasting and Time Series. (2)** Lecture, three hours (five weeks). Limited to Master of Science in Business Analytics students. Covers principal methods of time series data analysis and forecasting that are applicable in many functional areas of business, including simple and multiple regression, seasonal decomposition, AutoRegressive Integrated Moving Average (ARIMA), vector autoregressive, dynamic linear, error correction models. Use of R, R Studio and its various packages for regression and time series econometrics analysis and forecasting models. S/U or letter grading.



**438. Sports Analytics. (2)** Lecture, three hours. Preparation: programming experience (Python), basic statistics. Discussion of theory, development, and application of analytics in sports. Study of application of analytics in sports for purposes of in-game strategy, player performance, team management, sports operations, and fantasy competitions, among other topics. Lectures, laboratories, guest speakers from sports industry and academia, and culminating group project. S/U or letter grading.

## Management–PhD Graduate Courses

**200. Economics of Decision. (4)** Discussion, three hours. Preparation: basic probability theory. Basics of single-person decision theory and introduction to non-cooperative game theory. Examination in some detail of von Neumann/Morgenstern expected utility theory. Other topics in decision theory include subjective expected utility theory and departures from expected utility behavior. S/U or letter grading.

**201A. Probability, Statistics, and Computational Methods for Econometrics. (4)** Lecture, three hours. Designed for PhD students. Introduction to probabilistic, statistical, and computational tools needed for applied researchers in business fields. Probability theory, modes of convergence, hypothesis testing, Bayesian inference, R programming, linear algebra, numerical optimization, simulation methods, numerical integration. S/U or letter grading.

**201B. Theory and Application of Regression Analysis. (4)** Lecture, three hours. Recommended prerequisite: course 201A. Designed for PhD students. Introduction to general regression analysis. Linear model, maximum likelihood and asymptotic tests, endogeneity, instrumental variables, differences-in-differences, regression-discontinuity design, propensity score matching, limited dependent variable models, introduction to panel data. S/U or letter grading.

**201C. Time-Series Analysis. (4)** Lecture, three hours. Recommended prerequisite: course 201B. Designed for PhD students. Introduction to time-series methods in analysis of business data. Basics of time series, optimal prediction, multiple equation time-series models, generalized method-of-moments, volatility modeling and nonnormalities, dynamic factor models. S/U or letter grading.

**202A–202B–202C. Accounting Workshops. (1–1–2)** Lecture, two hours. Designed for PhD students. Intended to develop ability to critically evaluate research in fields relevant to study of accounting. Papers presented in colloquium format by leading scholars in accounting. Active participation and intellectual interchange encouraged through discussion of papers during colloquium. May be repeated for credit. S/U grading.

**203A–203B. Research Topics in Finance. (2–2)** Seminar, three hours. Course 236A is requisite to 236B. Designed for PhD students in their second through fourth year. Intended to help students bridge gap between coursework and research. Students select academic financial economics papers that they present, replicate, and critique. In Progress (203A) and S/U or letter (203B) grading.

**204A–204B–204C. Finance Workshops. (1–1–2)** Lecture, 90 minutes. Designed for PhD students. Intended to develop ability to critically evaluate finance research. Papers presented in colloquium format by leading scholars in finance. Active participation and intellectual interchange encouraged through discussion of papers in sessions prior to workshop, as well as during colloquium. May be repeated for credit. S/U grading.

**205A–205B–205C. Seminars: Decisions, Operations, and Technology Management Systems. (1–1–2)** Seminar, 90 minutes to three hours. Required of all PhD students in decisions, operations, and technology management. Student, faculty, and guest speaker presentations of ongoing research. May be repeated for credit. S/U or letter grading.

**206A–206B–206C. Research Seminars: Management and Organizational Behavior. (1–1–2)** Seminar, two hours. Designed for PhD students. Development of ability to critically evaluate research in fields relevant to study of problems or issues of current concern in management and organizational behavior. Papers presented in colloquium format by leading scholars in organizational behavior. Active participation and intellectual interchange encouraged through discussion of papers during colloquium. May be repeated for credit. S/U or letter grading.

**207A–207B–207C. Workshops: Marketing. (1–1–2)** Lecture, three hours. Designed for PhD students. Required of all students during first two years of their PhD work. Series consists of number of leading scholars in marketing and related disciplines who make presentations to marketing faculty and PhD students. Active participation and intellectual interchange that helps students gain richer perspective on field of marketing. In Progress (207A, 207B) and S/U or letter (207C) grading.

**208A–208B–208C. Global Economics and Management Workshops. (1–1–2)** Seminar, two hours. Designed for PhD students. Development of ability to critically evaluate research in fields relevant to study of economics. Papers presented in colloquium format by leading scholars in economics. Active participation and intellectual interchange encouraged through discussion of papers during colloquium. May be repeated for credit. S/U grading.

**209A–209B–209C. Management Strategy and Policy Workshops. (1–1–2)** Lecture, three hours. Designed for PhD students. Intended to develop ability to critically evaluate research in fields relevant to study of management strategy and policy. Papers presented in colloquium format by leading scholars in management strategy and policy. Active participation and intellectual interchange encouraged through discussion of papers in sessions prior to workshop, as well as during colloquium. May be repeated for credit. S/U grading.

**231. Network Flows and Integer Programming. (4)** Lecture, three hours. Preparation: linear programming. Survey course to (1) lay foundations for more advanced study of graphs, network flow models, and integer programming models and their applications, (2) establish connections between these technical foundations and real problems drawn from many areas of management, and (3) build professional skills needed to apply these tools. S/U or letter grading.

**232. Behavior under Uncertainty. (4)** Lecture, three hours. Designed for PhD students. Exploration of foundational research and current controversies in behavioral literature on judgment and decision making under uncertainty. S/U or letter grading.

**233. Introduction to Multivariate Analysis. (4)** Lecture, three hours. Preparation: working knowledge of differential and integral calculus of several variables, basic probability theory, and univariate mathematical statistics. Introduction to use of multivariate models in management research to organize and represent information; interpretation of coefficients from multivariate exploratory models (e.g., principal axes and factor analysis models); survey of multivariate statistical procedures (e.g., multiple discriminant analysis, multivariate analysis of variance, canonical correlation, and confirmatory factor models). S/U or letter grading.

**234. Special Topics in Accounting. (4)** Lecture, three hours. Preparation: doctoral standing or consent of instructor. Examination in depth of problems or issues of current concern in accounting, such as application of information economics and principal-agent model to accounting. S/U or letter grading.

**235. Empirical Research in Accounting. (4)** Lecture, three hours. Requisites: training in econometrics and doctoral standing or consent of instructor. Introduction to empirical accounting literature, focusing on role that accounting information plays in formation of capital market prices. S/U or letter grading.

**236. Theoretical Models in Accounting. (4)** Lecture, three hours. Major theoretical paradigms characterizing analytic modeling in accounting. Emphasis on financial accounting applications. Discussion focuses on economic intuition as reflected by key tensions and

related insights. Possible examination of mathematical expressions that encapsulate what can be learned from models. Letter grading.

**237. Introduction to Financial Economics. (4)** Lecture, three hours. Provides foundational material for analytical studies of financial markets. Emphasis is on continuous time mathematics as applied to pricing of financial assets. S/U or letter grading.

**238. Macroeconomics and Finance. (4)** Lecture, three hours. Introduction to research frontier of dynamic and quantitative modeling and estimation in macro finance. Exploration of asset liquidity, slow moving capital and market segmentation, and intermediary-based asset pricing. S/U or letter grading.

**239. Empirical Asset Pricing. (4)** Lecture, three hours. Focus on measuring and understanding risk premiums in financial markets. Study of evidence pertaining to pricing kernel and applied theoretical developments that are motivated by evidence. S/U or letter grading.

**240. Theory of Corporate Finance. (4)** Lecture, three hours. First course in theory of corporate finance. Topics covered include capital structure under asymmetric information and agency problems, security design, dynamic investment policies, and structural estimation of equilibrium models in corporate finance. S/U or letter grading.

**241A. Models for Operations Planning, Scheduling, and Control. (4)** Lecture, three hours. Designed for PhD students with some knowledge of mathematical programming and stochastic processes. Foundations of operations planning, scheduling, and control, with emphasis on formal models and their applications. Aggregate planning, work force scheduling, inventory management, and detailed operations scheduling and control. S/U or letter grading.

**241B. Scheduling Models for Intermittent Systems. (4)** Lecture, three hours. Requisite: course 241A. Scheduling models and results for single machine, flow shop, job shop, and resource-constrained project networks. Approaches include classical models, recent heuristic approaches, current research in coordinated interaction of computer models, and man/machine interaction. S/U or letter grading.

**242. Special Topics in Decisions, Operations, and Technology Management. (4)** Lecture, three hours. Designed for MBA and PhD students. Studies of advanced subjects of current interest in decisions, operations, and technology management. Emphasis on recent developments and application of specialized knowledge. Topics vary each term and have included strategy for information intensive industries, empirical research in operations management, analytical methods of operation research, introduction to management in information economy, and models for medical management. May be repeated for credit with topic change. S/U or letter grading.

**M243. Foundations of Organizational Behavior. (4)** (Same as Psychology M222E.) Lecture, three hours. Designed for graduate students. Doctoral-level survey of classic and emerging theories and research in field of organizational behavior, with focus on micro-level topics related to individual and interpersonal processes within organizations. Exploration of how individual behaviors, cognitions, and perceptions are affected by organizational content, structure, and culture. S/U or letter grading.

**244. Advanced Studies in Organizational Behavior. (4)** Lecture, three hours. Designed for graduate students. Doctoral-level survey of research literature assessing how organizations utilize human resources to enhance individual, group, and organizational effectiveness. Current theory and research in psychology, anthropology, organization behavior, and economics, including topics such as careers, participation, negotiations, and technology/work systems. S/U or letter grading.

**245. Research in Organizations. (4)** Seminar, three hours. Designed for graduate students. Doctoral-level survey of major topics in organizational behavior, with focus on macro-level organizational topics related to study of organizational systems and organizational environments. Topics may include demography, organizational change, organizational structure, and networks. Letter grading.

**246. Theory in Marketing.** (4) Lecture, three hours. Serves as mechanism to introduce students to development of marketing thought. Issues pertaining to general topic of theory development and testing. Prepares students for conducting theoretically grounded research in marketing. S/U or letter grading.

**247. Research in Marketing Management.** (4) Lecture, three hours. Designed for PhD students. Study of research issues associated with marketing management decisions. Recent research in areas of strategic marketing, market segmentation, new product development and introduction, pricing strategies, channel policy, promotion decisions, and sales force management examined critically. Review of both quantitative and behavioral approaches to studying these issues. S/U or letter grading.

**248. Quantitative Research in Marketing.** (4) Lecture, three hours. Designed for PhD students in management and related fields. Students are assumed to have good background in marketing principles and to be familiar with probability, statistics, mathematical programming, and econometrics. Review of a range of quantitative models as applied in marketing research. S/U or letter grading.

**249. Behavioral Research in Marketing.** (4) Seminar, three hours. Designed for PhD students who are conducting research in consumer behavior or related areas. Empirical research in consumer behavior surveyed and critically evaluated from theoretical as well as practical perspectives. S/U or letter grading.

**250. Special Research Topics in Marketing.** (4) Lecture, three hours. Designed for PhD students. Advanced selected topics in marketing, with emphasis on thorough examination of one or two topics in current research and theory. May be repeated for credit. S/U or letter grading.

**M251. Research and Development Policy.** (4) (Same as Public Policy M280A.) Lecture, three hours. Examination of research and development as process and as element of goal-oriented organization. Factors affecting invention and innovation; transfer of technology; organizational and behavioral considerations; coupling of science, technology, and organizational goals; assessing of and forecasting technological futures. S/U or letter grading.

**252. Special Topics in Management Theory.** (4) Lecture, three hours. Designed for PhD students. Examination in depth of problems or issues of current concern in management theory. Emphasis on recent contributions to theory, research, and methodology. Of special interest to advanced PhD candidates, academic staff, or distinguished visiting faculty. May be repeated for credit. S/U or letter grading.

**253. Field Research in Organizations and Management.** (4) Seminar, three hours. Designed for PhD students. Immersion in discipline and practice of using field data to conduct management research. Students become more informed users and reviewers of variety of methodological approaches. Students gain familiarity with approaching companies to partner on research, gathering and preparing to analyze field data, and what to expect in review process for paper that uses field data. Content of research discussed could extend to other fields (e.g., strategy, psychology, judgment and decision making). S/U or letter grading.

**254. Empirical Corporate Finance.** (4) Lecture, three hours. Familiarizes students with major areas of ongoing research in empirical corporate finance. Focus on state of empirical knowledge about corporate and household finance, and methodological issues arising in empirical research in corporate finance. S/U or letter grading.

**255. Information and Trading in Financial Markets.** (4) Lecture, three hours. Consideration of research on how information is processed in financial markets. Emphasis on classical models, as well as psychological approaches to stock price movements. Review of behavioral interpretations of trading behavior and price patterns in financial markets. S/U or letter grading.

**260. Behavioral Economics: Individuals, Organizations, and Markets.** (4) Lecture, three hours. Study of how predictions of behavior and optimal economic policy differ when traditional economic assumptions

(often selfish, unbounded rationality) are replaced with more psychologically realistic assumptions drawn from lab and world. Special attention to way in which these modified assumptions can be incorporated into broadly applicable and parsimonious models of human behavior, and what they imply for markets, management, and public policy. Letter grading.

**261. Judgment and Decision Making.** (4) Lecture, three hours. Introduction to behavioral research on judgment and decision making, with special attention to conditions of uncertainty. Includes research by Daniel Kahneman and Amos Tversky for which Kahneman was awarded 2002 Nobel Memorial Prize in Economic Sciences, and some of work for which Richard Thaler was cited in his Nobel Memorial Prize in 2017. Examination of recent descriptive models of judgment and decision making using rational choice theory as point of departure. Examination of classic articles and current controversies. Letter grading.

**262. Applied Analysis for Behavioral Research.** (4) Lecture, three hours. Provides foundation for statistical analyses that are conducted as part of career as behavioral researcher. Heavy focus on understanding and using statistical analyses, not deriving proofs. Letter grading.

**263. Choice Architecture and Nudging in Field.** (4) Lecture, three hours. Application of behavioral science to field experimentation. Designed to bridge crucial educational gap for PhD students. Includes identifying research partners, achieving scale, dealing with logistical challenges, and collaborating with outside institutions who may have different goals. Letter grading.

**270. Political Economy of Economic Development.** (4) Lecture, three hours. Use of historical and comparative approach to understanding evolution and development of societies. Examination of research that asks whether differences in economic development today have historical roots. Study of different mechanisms and channels through which history matters. Particular attention to role of domestic institutions and culture in explaining historical persistence. Letter grading.

## MATERIALS SCIENCE AND ENGINEERING

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Jaime Marian, PhD, *Vice Chair*  
Ya-Hong Xie, PhD, *Vice Chair*

## Faculty Roster

### Professors

Gregory P. Carman, PhD (*Ben Rich–Lockheed Martin Professor of Advanced Aerospace Technologies*)  
Jane P. Chang, PhD (*William Frederick Seyer Professor of Materials Electrochemistry*)  
Yong Chen, PhD  
Bruce S. Dunn, PhD (*Nippon Sheet Glass Company Professor of Materials Science*)  
Mark S. Goorsky, PhD  
Vijay Gupta, PhD  
Yu Huang, PhD (*Traugott and Dorothea Frederking Endowed Professor*)

Subramanian S. Iyer, PhD (*Charles P. Reames Endowed Professor of Electrical Engineering*)  
Ioanna Kakoulli, DPhil  
Richard B. Kaner, PhD  
Xiaochun Li, PhD (*Raytheon Company Professor of Mechanical Engineering*)  
Jaime Marian, PhD  
Ali Mosleh, PhD, NAE (*Evalyn Knight Professor of Engineering*)  
Qibing Pei, PhD  
Gaurav N. Sant, PhD (*Pritzker Professor of Sustainability*)  
Dwight C. Streit, PhD, NAE  
Sarah H. Tolbert, PhD  
Kang L. Wang, PhD (*Raytheon Company Professor of Electrical Engineering*)  
Yinmin (Morris) Wang, PhD  
Paul S. Weiss, PhD (*Presidential Professor of Chemistry*)  
Ya-Hong Xie, PhD  
Jenn-Ming Yang, PhD (*Collins Aerospace Term Professor of Excellence*)  
Yang Yang, PhD (*Carol and Lawrence E. Tannas, Jr., Endowed Professor of Engineering*)

### Professors Emeriti

Alan J. Ardell, PhD  
Nasr M. Ghoniem, PhD  
Kanji Ono, PhD  
Benjamin M. Wu, DDS, PhD

### Associate Professor

Ximin He, PhD

### Assistant Professors

Amartya S. Banerjee, PhD  
Laura Kim, PhD  
Aaswath P. Raman, PhD

### Lecturer

Magdalena Balonis-Sant, PhD

### Adjunct Associate Professors

Eric P. Bescher, PhD  
Sergey Prikhodko, PhD

### Adjunct Assistant Professor

Marta Pozuelo, PhD

## Overview

At the heart of materials science and engineering is the understanding and control of the microstructure of solids. Microstructure is used broadly in reference to electronic and atomic structure of solids—and defects within them—at size scales ranging from atomic bond lengths to airplane wings. The structure of solids over this wide range dictates their structural, electrical, biological, and chemical properties. The phenomenological and mechanistic relationships between microstructure and the macroscopic properties of solids are, in essence, what materials science is all about.

Materials engineering builds on the foundation of materials science and is concerned with the design, fabrication, and optimal selection of engineering materials that must simultaneously fulfill dimensional, property, quality control, and economic requirements.

## Undergraduate Major

### Materials Engineering BS

The materials engineering program is designed for students who wish to pursue a professional career in the materials field and desire a broad understanding of the relationship between microstructure and properties of materials. Metals, ceramics, and polymers, as well as the design, fabrication, and testing of metallic and other materials such as oxides, glasses, and fiber-reinforced composites, are included in the course contents.

Students are introduced to the basic principles of metallurgy and ceramic and polymer science as part of the Materials Engineering major.

The department also has a program in electronic materials that provides a broad-based background in materials science, with opportunity to specialize in the study of those materials used for electronic and optoelectronic applications. The program incorporates several courses in electrical engineering in addition to those in the Materials Science curriculum.

The materials engineering program is accredited by the Engineering Accreditation Commission of [ABET](#).

### Capstone Major

The Materials Engineering major is a designated capstone major. Students undertake two individual projects involving materials selection, treatment, and serviceability. Successful completion requires working knowledge of physical properties of materials and strategies and methodologies of using materials properties in the materials selection process. Students learn and work independently and practice leadership and teamwork in and across disciplines. They are also expected to communicate effectively in oral, graphic, and written forms.

### Learning Outcomes

The Materials Engineering major has the following learning outcomes:

- Application of knowledge of mathematics, natural science, and engineering to analysis of materials and other systems
- Learn and work independently
- Practice leadership and teamwork in and across disciplines
- Design of a system, component, or process to meet desired needs
- Effective oral, graphic, and written communication
- Identification, formulation, and solution of engineering problems

### Requirements

#### Materials Engineering Option

##### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A, 20B, 20L; Civil and Environmental Engineering M20 or Computer Science 31 or Mechanical and Aerospace Engineering M20; Materials Science and Engineering 10, 90L; Mathematics

31A, 31B, 32A, 32B, 33A, 33B (or Mechanical and Aerospace Engineering 82); Physics 1A, 1B, 1C.

##### The Major

*Required:* Civil and Environmental Engineering 91 (or Mechanical and Aerospace Engineering 101), 108, Electrical and Computer Engineering 100, Materials Science and Engineering 104, 110, 110L, 120, 130, 131, 131L, 132, 143A, 150, 160; one upper-division mathematics course selected from Civil and Environmental Engineering 103, Electrical and Computer Engineering 102, Mathematics 132, Mechanical and Aerospace Engineering 182B, 182C; two laboratory courses (4 units) from Materials Science and Engineering 121L, 141L, 143L, 161L, or up to 2 units of 199; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone design courses (Materials Science and Engineering 140A and 140B); and two major field elective courses (8 units) from Chemical Engineering CM114, Civil and Environmental Engineering 130, 135A, Electrical and Computer Engineering 2, 123A, 123B, Materials Science and Engineering 105, C111, C112, 121, 122, 151, 161, 162, Mechanical and Aerospace Engineering 156A, 166C, plus at least one elective course (4 units) from Chemistry and Biochemistry 30A, 30AL, Electrical and Computer Engineering 131A, Materials Science and Engineering 170, 171, Mathematics 170A, or Statistics 100A.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

#### Electronic Materials Option

##### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A, 20B, 20L; Civil and Environmental Engineering M20 or Computer Science 31 or Mechanical and Aerospace Engineering M20; Materials Science and Engineering 10, 90L; Mathematics 31A, 31B, 32A, 32B, 33A, 33B (or Mechanical and Aerospace Engineering 82); Physics 1A, 1B, 1C.

##### The Major

*Required:* Electrical and Computer Engineering 100, 101A, 121B, Materials Science and Engineering 104, 110, 110L, 120, 121, 121L, 122, 130, 131, 131L, 132, Mechanical and Aerospace Engineering 101; one upper-division mathematics course selected from Civil and Environmental Engineering 103, Electrical and Computer Engineering 102, Mathematics 132, Mechanical and Aerospace Engineering 182B, 182C; either Materials Science and Engineering 150 or 160 and one course (4 units) from Electrical and Computer Engineering 123A, 123B, Materials Science and Engineering 150, 160; 4 laboratory units from Materials Science and Engineering 141L, 161L, or up to 2 units of 199; three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone design courses (Materials Science and Engineering 140A and 140B); and one major field elective course (4 units) from Electrical and Computer Engineering 110, 131A, Materials Science and Engineering 105, C111, C112, 143A, or 162.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Graduate Major

### Materials Science and Engineering MS, PhD

The graduate program allows for specialization in one of the following fields: ceramics and ceramic processing, electronic and optical materials, or structural materials.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Materials Science and Engineering

### Lower-Division Courses

**10. Freshman Seminar: New Materials. (1)** Seminar, one hour; outside study, two hours. Preparation: high school chemistry and physics. Not open to students with credit for course 104. Introduction to basic concepts of materials science and new materials vital to advanced technology. Microstructural analysis and various material properties discussed in conjunction with such applications as biomedical sensors, pollution control, and microelectronics. Letter grading.

**13L. Cultural (Materials) Science Investigations in Art and Archaeology. (5)** Laboratory, four hours; discussion, two hours; site visits, four hours; outside study, five hours. Focus on portable X-ray fluorescence (XRF) and ultraviolet, visible, near infrared (UV/Vis/NIR) spectroscopy and forensic imaging, with emphasis on fundamentals of techniques, data collection and interpretation, and effects of weathering and post depositional and taphonomic processes to help answer questions related to ancient materials manufacturing technologies, materials variability, and human interaction with environment. Experimental techniques and analysis of materials through: X-ray fluorescence spectroscopy (XRF); fiber optic reflectance spectroscopy (FORS); and forensic multispectral imaging. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**33W. Materials Structure and Technology in Archaeology and Architecture. (5)** (Formerly numbered 33.) Seminar, three hours; laboratory, two hours; discussion, one hour; outside study, nine hours. Requisite: English Composition 3. Exploration of three classes of materials and composites, and relationships that exist between structural elements of materials and their properties: vitreous materials, building material binders, and pigments and colorants. Through study of ancient materials and technology in archaeology and architecture, exploration of relationships among processing, structure, properties, and performance for: vitreous materials—ceramics, frits, and glass; building material binders—airial lime-based mortars, natural and artificial hydraulic lime/cements and concretes; and pigments and colorants (natural and synthetic organic, inorganic, and organic/inorganic hybrids). Through reverse engineering processing, ex-

ploration of ancient engineering materials (their micro/nano structure and physical, chemical, and mechanical properties), and their durability and sustainability as time-proven examples of technology innovation and/or invention. Letter grading.

**90L. Physical Measurement in Materials Engineering. (2)** Laboratory, four hours; outside study, two hours. Various physical measurement methods used in materials science and engineering. Mechanical, thermal, electrical, magnetic, and optical techniques. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**104. Science of Engineering Materials. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisites: Chemistry 20A, 20B, 20L, Physics 1A. Corequisite: Physics 1B. General introduction to different types of materials used in engineering designs: metals, ceramics, plastics, and composites, relationship between structure (crystals and microstructure) and properties of technological materials. Illustration of their fundamental differences and their applications in engineering. Letter grading.

**105. Principles of Nanoscience and Nanotechnology. (4)** (Formerly numbered M105.) Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: Chemistry 20A, 20B, Physics 1C. Introduction to underlying science encompassing structure, properties, and fabrication of technologically important nanoscale systems. New phenomena that emerge in very small systems (typically with feature sizes below few hundred nanometers) explained using basic concepts from physics and chemistry. Chemical, optical, and electronic properties, electron transport, structural stability, self-assembly, templated assembly and applications of various nanostructures such as quantum dots, nanoparticles, quantum wires, quantum wells and multilayers, carbon nanotubes. Letter grading.

**110. Introduction to Materials Characterization A (Crystal Structure, Nanostructures, and X-Ray Scattering). (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 104. Modern methods of materials characterization; fundamentals of crystallography, properties of X rays, X-ray scattering; powder method, Laue method; determination of crystal structures; phase diagram determination; high-resolution X-ray diffraction methods; X-ray spectroscopy; design of materials characterization procedures. Letter grading.

**110L. Introduction to Materials Characterization A Laboratory. (2)** Laboratory, four hours; outside study, two hours. Enforced requisite: course 104. Experimental techniques and analysis of materials through X-ray scattering techniques; powder method, crystal structure determination, high-resolution X-ray diffraction methods, and special projects. Letter grading.

**C111. Introduction to Materials Characterization B (Electron Microscopy). (4)** (Formerly numbered 111.) Lecture, four hours; outside study, eight hours. Characterization of microstructure and microchemistry of materials; transmission electron microscopy; reciprocal lattice, electron diffraction, stereographic projection, direct observation of defects in crystals, replicas; scanning electron microscopy: emissive and reflective modes; chemical analysis; electron optics of both instruments. Concurrently scheduled with course C211. Letter grading.

**111L. Introduction to Materials Characterization B Laboratory. (2)** Laboratory, four hours; outside study, two hours. Enforced requisite: course 111. Experimental techniques and analysis of materials through electron microscopy. Determination of morphology, microstructure, and crystallinity of samples. Letter grading.

**C112. Cultural Materials Science II: Characterization Methods in Conservation of Materials. (4)** Lecture, four hours. Preparation: general chemistry, inorganic and organic chemistry, materials science. Principles and methods of materials characterization in conservation: optical and electron microscopy, X-ray and electron spectroscopy, X-ray diffraction, infrared spectroscopy, reflectance spectroscopy and multispectral imaging spectroscopy, chromatography, design of archaeological and ethnographic materials characterization procedures. Concurrently scheduled with course C212. Letter grading.

**120. Physics of Materials. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 104, 110 (or Chemistry 113A). Introduction to electrical, optical, and magnetic properties of solids. Free electron model, introduction to band theory and Schrödinger wave equation. Crystal bonding and lattice vibrations. Mechanisms and characterization of electrical conductivity, optical absorption, magnetic behavior, dielectrical properties, and p-n junctions. Letter grading.

**121. Materials Science of Semiconductors. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 120. Structure and properties of elemental and compound semiconductors. Electrical and optical properties, defect chemistry, and doping. Electronic materials analysis and characterization, including electrical, optical, and ion-beam techniques. Heterostructures, band-gap engineering, development of new materials for optoelectronic applications. Letter grading.

**121L. Materials Science of Semiconductors Laboratory. (2)** Lecture, 30 minutes; discussion, 30 minutes; laboratory, two hours; outside study, three hours. Enforced corequisite: course 121. Experiments conducted on materials characterization, including measurements of contact resistance, dielectric constant, and thin film biaxial modulus and CTE. Letter grading.

**122. Principles of Electronic Materials Processing. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 104. Description of basic semiconductor materials for device processing; preparation and characterization of silicon, III-V compounds, and films. Discussion of principles of CVD, MOCVD, LPE, and MBE; metals and dielectrics. Letter grading.

**130. Phase Relations in Solids. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 104. Summary of thermodynamic laws, equilibrium criteria, solution thermodynamics, mass-action law, binary and ternary phase diagrams, glass transitions. Letter grading.

**131. Diffusion and Diffusion-Controlled Reactions. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 130 or Chemistry 110A. Diffusion in metals and ionic solids, nucleation and growth theory; precipitation from solid solution, eutectoid decomposition, design of heat treatment processes of alloys, growth of intermediate phases, gas-solid reactions, design of oxidation-resistant alloys, recrystallization, and grain growth. Letter grading.

**131L. Diffusion and Diffusion-Controlled Reactions Laboratory. (2)** Laboratory, two hours; outside study, four hours. Enforced corequisite: course 131. Design of heat-treating cycles and performing experiments to study interdiffusion, growth of intermediate phases, recrystallization, and grain growth in metals. Analysis of data. Comparison of results with theory. Letter grading.

**132. Structure and Properties of Metallic Alloys. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 131. Physical metallurgy of steels, lightweight alloys (Al and Ti), and superalloys. Strengthening mechanisms, microstructural control methods for strength and toughness improvement. Grain boundary segregation. Letter grading.

**140A. Materials Selection and Engineering Design A. (3)** Lecture, two hours; laboratory, two hours; outside study, five hours. Enforced requisites: two courses from 132, 150, 160. Explicit guidance among myriad materials available for design in engineering. Properties and applications of steels, nonferrous al-

loys, polymeric, ceramic, and composite materials, coatings. Materials selection, treatment, and serviceability emphasized as part of successful design. Design projects. Letter grading.

**140B. Materials Selection and Engineering Design B. (3)** Lecture, two hours; laboratory, two hours; outside study, five hours. Enforced requisite: course 140A. Explicit guidance among myriad materials available for design in engineering. Properties and applications of steels, nonferrous alloys, polymeric, ceramic, and composite materials, coatings. Materials selection, treatment, and serviceability emphasized as part of successful design. Design projects. Letter grading.

**141L. Computer Methods and Instrumentation in Materials Science. (2)** Laboratory, four hours. Preparation: knowledge of BASIC or C or assembly language. Limited to junior/senior Materials Science and Engineering majors. Interface and control techniques, real-time data acquisition and processing, computer-aided testing. Letter grading.

**143A. Mechanical Behavior of Materials. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: course 104, Mechanical and Aerospace Engineering 101. Plastic flow of metals under simple and combined loading, strain rate and temperature effects, dislocations, fracture, microstructural effects, mechanical and thermal treatment of steel for engineering applications. Letter grading.

**143L. Mechanical Behavior Laboratory. (2)** Laboratory, four hours. Requisites: courses 90L, 143A (may be taken concurrently). Methods of characterizing mechanical behavior of various materials; elastic and plastic deformation, fracture toughness, fatigue, and creep. Letter grading.

**150. Introduction to Polymers. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Polymerization mechanisms, molecular weight and distribution, chemical structure and bonding, structure crystallinity, and morphology and their effects on physical properties. Glassy polymers, springy polymers, elastomers, adhesives. Fiber forming polymers, polymer processing technology, plastication. Letter grading.

**151. Structure and Properties of Composite Materials. (4)** Lecture, four hours; outside study, eight hours. Preparation: at least two courses from 132, 143A, 150, 160. Requisite: course 104. Relationship between structure and mechanical properties of composite materials with fiber and particulate reinforcement. Properties of fiber, matrix, and interfaces. Selection of macrostructures and material systems. Letter grading.

**160. Introduction to Ceramics and Glasses. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses 104, 130. Introduction to ceramics and glasses being used as important materials of engineering, processing techniques, and unique properties. Examples of design and control of properties for certain specific applications in engineering. Letter grading.

**161. Processing of Ceramics and Glasses. (4)** Lecture, four hours; discussion, one hour. Requisite: course 160. Study of processes used in fabrication of ceramics and glasses for structural applications, optics, and electronics. Processing operations, including modern techniques of powder synthesis, greenware forming, sintering, glass melting. Microstructure properties relations in ceramics. Fracture analysis and design with ceramics. Letter grading.

**161L. Laboratory in Ceramics. (2)** Laboratory, four hours. Requisite: course 160. Recommended corequisite: course 161. Processing of common ceramics and glasses. Attainment of specific properties through process control for engineering applications. Quantitative characterization and selection of raw materials. Slip casting and extrusion of clay bodies. Sintering of powders. Glass melting and fabrication. Determination of chemical and physical properties. Letter grading.

**162. Electronic Ceramics. (4)** Lecture, four hours; outside study, eight hours. Requisites: course 104, Physics 1C. Utilization of ceramics in microelectronics; thick film and thin film resistors, capacitors, and substrates; design and processing of electronic



ceramics and packaging; magnetic ceramics; ferroelectric ceramics and electro-optic devices; optical wave guide applications and designs. Letter grading.

**CM163. Electrochemical Processes. (4)** (Same as Chemical Engineering CM114.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 130 (or Mechanical and Aerospace Engineering 105A), Chemical Engineering 102B. Fundamentals of electrochemistry and engineering applications to industrial electrochemical processes. Primary emphasis on fundamental approach to analyze electrochemical processes. Specific topics include electrochemical reactions on metal and semiconductor surfaces, electrodeposition, electroless deposition, electrosynthesis, fuel cells, aqueous and non-aqueous batteries, solid-state electrochemistry. May be concurrently scheduled with course CM263. Letter grading.

**170. Engaging Elements of Communication: Oral Communication. (2)** Lecture, one hour; discussion, one hour; outside study, four hours. Comprehensive oral presentation and communication skills provided by building on strengths of individual personal styles in creation of positive interpersonal relations. Skill set prepares students for different types of academic and professional presentations for wide range of audiences. Learning environment is highly supportive and interactive as it helps students creatively develop and greatly expand effectiveness of their communication and presentation skills. Letter grading.

**171. Engaging Elements of Communication: Writing for Technical Community. (2)** Lecture, one hour; discussion, one hour; outside study, four hours. Comprehensive technical writing skills on subjects specific to field of materials science and engineering. Students write review term paper in selected subject field of materials science and engineering from given set of journal publications. Instruction leads students through several crucial steps, including brainstorming, choosing title, coming up with outline, concise writing of abstract, conclusion, and final polishing. Other subjects include writing style, word choices, and grammar. Letter grading.

**CM180. Introduction to Biomaterials. (4)** (Same as Bioengineering CM178.) Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: course 104, or Chemistry 20A, 20B, and 20L. Engineering materials used in medicine and dentistry for repair and/or restoration of damaged natural tissues. Topics include relationships between material properties, suitability to task, surface chemistry, processing and treatment methods, and biocompatibility. Concurrently scheduled with course CM280. Letter grading.

**188. Special Courses in Materials Science and Engineering. (4)** Seminar, four hours; outside study, eight hours. Special topics in materials science and engineering for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated once for credit with topic or instructor change. Letter grading.

**194. Research Group Seminars: Materials Science and Engineering. (4)** Seminar, four hours; outside study, eight hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field or of research of faculty members or students. May be repeated for credit. Letter grading.

**199. Directed Research in Materials Science and Engineering. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. Occasional field trips may be arranged. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**200. Principles of Materials Science I. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 120. Lattice dynamics and thermal properties of solids, classical and quantized

free electron theory, electrons in a periodic potential, transport in semiconductors, dielectric and magnetic properties of solids. Letter grading.

**201. Principles of Materials Science II. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 131. Kinetics of diffusional transformations in solids. Precipitation in solids. Nucleation theory. Theory of precipitate growth. Ostwald ripening. Spinodal decomposition. Cellular reactions. Letter grading.

**202. Thermodynamics of Materials. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Principles of thermodynamics and statistical mechanics and their application to physical and chemical phenomena in materials. Finite-temperature properties of single-component and multicomponent systems, equations of state, thermodynamic potentials and their derivatives, phase diagrams, and other equilibrium properties. First-order and second-order phase transitions in liquids and solids. Introduction to classical and modern theories of critical phenomena. Thermodynamic description of irreversible processes and entropy generation. Letter grading.

**210. Diffraction Methods in Science of Materials. (4)** Lecture, four hours; recitation, one hour; outside study, seven hours. Requisite: course 110. Theory of diffraction of waves (X rays, electrons, and neutrons) in crystalline and noncrystalline materials. Long- and short-range order in crystals, structural effects of plastic deformation, solid-state transformations, arrangements of atoms in liquids and amorphous solids. Letter grading.

**C211. Introduction to Materials Characterization B (Electron Microscopy). (4)** (Formerly numbered 211.) Lecture, four hours; outside study, eight hours. Characterization of microstructure and microchemistry of materials; transmission electron microscopy; reciprocal lattice, electron diffraction, stereographic projection, direct observation of defects in crystals, replicas; scanning electron microscopy: emissive and reflective modes; chemical analysis; electron optics of both instruments. Concurrently scheduled with course C111. Letter grading.

**C212. Cultural Materials Science II: Characterization Methods in Conservation of Materials. (4)** (Formerly numbered CM212.) Lecture, four hours. Preparation: general chemistry, inorganic and organic chemistry, materials science. Principles and methods of materials characterization in conservation: optical and electron microscopy, X-ray and electron spectroscopy, X-ray diffraction, infrared spectroscopy, reflectance spectroscopy and multispectral imaging spectroscopy, chromatography, design of archaeological and ethnographic materials characterization procedures. Concurrently scheduled with course C112. Letter grading.

**M213. Cultural Materials Science I: Analytical Imaging and Documentation in Conservation of Materials. (4)** (Same as Conservation M215.) Lecture, two hours; laboratory, two hours. Basic and advanced techniques on digital photography, computer-aided recording tools, and scientific imaging to determine and document condition (defects) and technological features of archaeological and ethnographic materials. Development of basic theoretical knowledge on imaging and photonics technology and practical skills on conservation photo-documentation, analytical (forensic) photography, and advanced new imaging technologies. Letter grading.

**213L. Cultural Materials Science Laboratory: Technical Study. (4)** (Formerly numbered M213L.) Laboratory, four hours. Requisites: courses M213 (or 216) and 214 or one course from Conservation 260 through 263. Corequisite: course C212. Research-based laboratory through object-based problem-solving approach in conservation materials science. Experimental techniques, characterization, and analysis of archaeological and ethnographic materials (using materials science principles and reverse engineering processes) to determine technological features, defects, and products of alteration. Hands-on experience with noninvasive imaging and spectroscopic techniques, sampling and sample preparation methods, analysis of microsamples. Letter grading.

**214. Structure, Properties, and Deterioration of Materials: Rock Art, Wall Paintings, Mosaics. (2)** (Formerly numbered M214.) Lecture, three hours. Recommended preparation: basic knowledge of general chemistry and materials science. Introduction to materials and techniques of rock art, wall paintings (including painted surfaces on cement and composite decorative architectural surfaces), and mosaics. Archaeological and ethnographic context, techniques, and materials. Pigments, colorants, and binding media. Chemical, optical, and structural properties. Relationship between composition (chemistry), structure (crystals, molecular arrangement, and microstructure), and properties explained using basic concepts from physics and chemistry. Intrinsic attributes and resistance to weathering. Causes, sources, and mechanisms of deterioration (physical, chemical, and biochemical). Letter grading.

**216. Science of Conservation Materials and Methods I. (4)** (Formerly numbered M216.) Lecture, two hours; laboratory, two hours. Recommended prerequisite: laboratory safety fundamental concepts course by Office of Environment, Health, and Safety. Introduction to physical, chemical, and mechanical properties of conservation materials (employed for preservation of archaeological and cultural materials) and their aging characteristics. Science and application methods of traditional organic and inorganic systems and introduction of novel technology based on biomineralization processes and nanostructured materials. Letter grading.

**221. Science of Electronic Materials. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 120. Study of major physical and chemical principles affecting properties and performance of semiconductor materials. Topics include bonding, carrier statistics, band-gap engineering, optical and transport properties, novel materials systems, and characterization. Letter grading.

**222. Growth and Processing of Electronic Materials. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 120, 130, 131. Thermodynamics and kinetics that affect semiconductor growth and device processing. Particular emphasis on fundamentals of growth (bulk and epitaxial), heteroepitaxy, implantation, oxidation. Letter grading.

**223. Materials Science of Thin Films. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 120, 131. Fabrication, structure, and property correlations of thin films used in microelectronics for data and information processing. Topics include film deposition, interfacial properties, stress and strain, electromigration, phase changes and kinetics, reliability. Letter grading.

**224. Deposition Technologies and Their Applications. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Examination of physics behind majority of modern thin film deposition technologies based on vapor phase transport. Basic vacuum technology and gas kinetics. Deposition methods used in high-technology applications. Theory and experimental details of physical vapor deposition (PVD), chemical vapor deposition (CVD), plasma-enhanced chemical vapor deposition processes. Letter grading.

**225. Materials Science of Surfaces. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 120, Chemistry 113A. Introduction to atomic and electronic structure of surfaces. Survey of methods for determining composition and structure of surfaces and near-surface layers of solid-state materials. Emphasis on scanning probe microscopy, Auger electron spectroscopy, X-ray photoelectron spectroscopy, ultraviolet photoelectron spectroscopy, secondary ion mass spectrometry, ion scattering spectroscopy, and Rutherford backscattering spectrometry. Applications in microelectronics, optoelectronics, metallurgy, polymers, biological and biocompatible materials, and catalysis. Letter grading.

**226. Si-CMOS Technology: Selected Topics in Materials Science. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Recommended preparation: Electrical Engineering 221B. Requisites: courses 130, 131, 200, 221, 222. Selected topics in materials science from modern Si-CMOS technology,

including technological challenges in high k/metal gate stacks, strained Si FETs, SOI and three-dimensional FETs, source/drain engineering including transient-enhanced diffusion, nonvolatile memory, and metallization for ohmic contacts. Letter grading.

**243A. Fracture of Structural Materials. (4)** Lecture, four hours; laboratory, two hours; outside study, four hours. Requisite: course 143A. Engineering and scientific aspects of crack nucleation, slow crack growth, and unstable fracture. Fracture mechanics, dislocation models, fatigue, fracture in reactive environments, alloy development, fracture-safe design. Letter grading.

**243C. Dislocations and Strengthening Mechanisms in Solids. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 143A. Elastic and plastic behavior of crystals, geometry, mechanics, and interaction of dislocations, mechanisms of yielding, work hardening, and other strengthening. Letter grading.

**246A. Mechanical Properties of Nonmetallic Crystalline Solids. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 160. Materials and environmental factors affecting mechanical properties of nonmetallic crystalline solids, including atomic bonding and structure, atomic-scale defects, microstructural features, residual stresses, temperature, stress state, strain rate, size and surface conditions. Letter grading.

**246B. Structure and Properties of Glass. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 160. Structure of amorphous solids and glasses. Conditions of glass formation and theories of glass structure. Mechanical, electrical, and optical properties of glass and relationship to structure. Letter grading.

**246D. Electronic and Optical Properties of Ceramics. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 160. Principles governing electronic properties of ceramic single crystals and glasses and effects of processing and microstructure on these properties. Electronic conduction, ferroelectricity, and photochromism. Magnetic ceramics. Infrared, visible, and ultraviolet transmission. Unique application of ceramics. Letter grading.

**247. Nanoscale Materials: Challenges and Opportunities. (4)** Lecture, four hours; discussion, eight hours. Limited to graduate students. Literature studies of up-to-date subjects in novel materials and their potential applications, including nanoscale materials and biomaterials. Letter grading.

**248. Materials and Physics of Solar Cells. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Comprehensive introduction to materials and physics of photovoltaic cell, covering basic physics of semiconductors in photovoltaic devices, physical models of cell operation, characteristics and design of common types of solar cells, and approaches to increasing solar cell efficiency. Recent progress in solar cells, such as organic solar cell, thin-film solar cells, and multiple junction solar cells provided to increase student knowledge. Tour of research laboratory included. Letter grading.

**250B. Advanced Composite Materials. (4)** Lecture, four hours; outside study, eight hours. Preparation: BS in Materials Science and Engineering. Requisite: course 151. Fabrication methods, structure and properties of advanced composite materials. Fibers; resin-, metal-, and ceramic-matrix composites. Physical, mechanical, and nondestructive characterization techniques. Letter grading.

**251. Chemistry of Soft Materials. (4)** Lecture, four hours. Introduction to organic soft materials, including essential basic organic chemistry and polymer chemistry. Topics include three main categories of soft materials: organic molecules, synthetic polymers, and biomolecules and biomaterials. Extensive description and discussion of structure-property relationship, spectroscopic and experimental techniques, and preparation methods for various soft materials. Letter grading.

**252. Organic Polymer Electronic Materials. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Preparation: knowledge of introductory organic chemistry and polymer science. Introduction

to organic electronic materials with emphasis on materials chemistry and processing. Topics include conjugated polymers; heavily doped, highly conducting polymers; applications as processable metals and in various electrical, optical, and electrochemical devices. Synthesis of semiconductor polymers for organic light-emitting diodes, solar cells, thin-film transistors. Introduction to emerging field of organic electronics. Letter grading.

**253. Bioinspired Materials. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Broad overview of most recent advances in bioinspired materials and biomaterials, covering natural materials, biomimicry, and bioinspired artificial materials, with emphasis on synthesis, processing, hierarchical design, and assembly from nano- to macro-scale, properties and characterizations, and real-life applications. Letter grading.

**261. Risk Analysis for Engineers and Scientists. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Topics include definition and fundamental concepts of risk, sociotechnical context of risk assessment and risk management, perception and reality of risk, risk-informed decision-making, domains of application (safety, health, security, economy, and environment), principal methods of risk assessment, including overview of probability and statistics, how to identify risk scenarios, techniques modeling failures of complex systems (e.g., fault tree and event tree analysis), data collection and analysis, model integration and computational algorithms for risk calculation and identification of risk drivers, simulation approach to risk modeling, uncertainty analysis, examples of risk assessment of engineered systems (e.g., space and aviation, nuclear power, petrochemical plants), other applications (risk of medical procedures, financial risk, natural hazards risk). Letter grading.

**CM263. Electrochemical Processes. (4)** (Same as Chemical Engineering CM214.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: course 130 (or Mechanical and Aerospace Engineering 105A), Chemical Engineering 102B. Fundamentals of electrochemistry and engineering applications to industrial electrochemical processes. Primary emphasis on fundamental approach to analyze electrochemical processes. Specific topics include electrochemical reactions on metal and semiconductor surfaces, electrodeposition, electroless deposition, electrosynthesis, fuel cells, aqueous and non-aqueous batteries, solid-state electrochemistry. May be concurrently scheduled with course CM163. Letter grading.

**270. Computer Simulations of Materials. (4)** Lecture, four hours; outside study, eight hours. Introduction to modern methods of computational modeling in materials science. Topics include basic statistical mechanics, classical molecular dynamics, and Monte Carlo methods, with emphasis on understanding basic physical ideas and learning to design, run, and analyze computer simulations of materials. Use of examples from current literature to show how these methods can be used to study interesting phenomena in materials science. Hands-on computer experiments. Letter grading.

**271. Electronic Structure of Materials. (4)** Lecture, four hours; outside study, eight hours. Preparation: basic knowledge of quantum mechanics. Recommended requisite: course 200. Introduction to modern first-principles electronic structure calculations for various types of modern materials. Properties of electrons and interatomic bonding in molecules, crystals, and liquids, with emphasis on practical methods for solving Schrödinger equation and using it to calculate physical properties such as elastic constants, equilibrium structures, binding energies, vibrational frequencies, electronic band gaps and band structures, properties of defects, surfaces, interfaces, and magnetism. Extensive hands-on experience with modern density-functional theory code. Letter grading.

**272. Theory of Nanomaterials. (4)** Lecture, four hours; outside study, eight hours. Strongly recommended requisite: course 200. Introduction to properties and applications of nanoscale materials, with emphasis on understanding of basic principles that distinguish nanostructures (with feature size below 100 nm) from

more common microstructured materials. Explanation of new phenomena that emerge only in very small systems, using simple concepts from quantum mechanics and thermodynamics. Topics include structure and electronic properties of quantum dots, wires, nanotubes, and multilayers, self-assembly on surfaces and in liquid solutions, mechanical properties of nanostructured metamaterials, molecular electronics, spin-based electronics, and proposed realizations of quantum computing. Discussion of current and future directions of this rapidly growing field using examples from modern scientific literature. Letter grading.

**CM280. Introduction to Biomaterials. (4)** (Same as Bioengineering CM278.) Lecture, three hours; discussion, two hours; outside study, seven hours. Requisites: course 104, or Chemistry 20A, 20B, and 20L. Engineering materials used in medicine and dentistry for repair and/or restoration of damaged natural tissues. Topics include relationships between material properties, suitability to task, surface chemistry, processing and treatment methods, and biocompatibility. Concurrently scheduled with course CM180. Letter grading.

**282. Exploration of Advanced Topics in Materials Science and Engineering. (2)** Lecture, one hour; discussion, one hour; outside study, four hours. Researchers from leading research institutions around world deliver lectures on advanced research topics in materials science and engineering. Student groups present summary previews of topics prior to lecture. Class discussions follow each presentation. May be repeated for credit. S/U grading.

**296. Seminar: Advanced Topics in Materials Science and Engineering. (2)** Seminar, two hours; outside study, four hours. Advanced study and analysis of current topics in materials science and engineering. Discussion of current research and literature in research specialty of faculty members teaching course. May be repeated for credit. S/U grading.

**M297B. Material Processing in Manufacturing. (4)** (Same as Mechanical and Aerospace Engineering M297B.) Lecture, four hours; outside study, eight hours. Enforced requisite: Mechanical and Aerospace Engineering 183A. Thermodynamics, principles of material processing: phase equilibria and transitions, transport mechanisms of heat and mass, nucleation and growth of microstructure. Applications in casting/solidification, welding, consolidation, chemical vapor deposition, infiltration, composites. Letter grading.

**M297C. Composites Manufacturing. (4)** (Same as Mechanical and Aerospace Engineering M297C.) Lecture, four hours; outside study, eight hours. Requisites: course 151, Mechanical and Aerospace Engineering 166C. Matrix materials, fibers, fiber preforms, elements of processing, autoclave/compression molding, filament winding, pultrusion, resin transfer molding, automation, material removal and assembly, metal and ceramic matrix composites, quality assurance. Letter grading.

**298. Seminar: Engineering. (2 to 4)** Seminar, to be arranged. Limited to graduate materials science and engineering students. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual or Tutorial Studies. (2 to 8)** Tutorial, to be arranged. Limited to graduate materials science and engineering students. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for MS Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. Limited to graduate materials science and engineering students. Reading and preparation for MS comprehensive examination. S/U grading.

**597B. Preparation for PhD Preliminary Examinations. (2 to 16)** Tutorial, to be arranged. Limited to graduate materials science and engineering students. S/U grading.

**597C. Preparation for PhD Oral Qualifying Examination. (2 to 16)** Tutorial, to be arranged. Limited to graduate materials science and engineering students. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 12)** Tutorial, to be arranged. Limited to graduate materials science and engineering students. Supervised independent research for MS candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Limited to graduate materials science and engineering students. Usually taken after students have been advanced to candidacy. S/U grading.

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## MATHEMATICS

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### Mathematics

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Chandrashekhhar Khare, PhD, *Chair*  
Inwon C. Kim, PhD, *Graduate Vice Chair*  
Igor Pak, PhD, *Administrative Vice Chair*

Marcus L. Roper, PhD, *Undergraduate Vice Chair*

Michael J. Andrews, PhD, *Director, Program in Computing*

Andrea L. Bertozzi, PhD, *Director, Applied Mathematics*

## Faculty Roster

### Professors

Christopher R. Anderson, PhD  
Paul Balmer, PhD  
Jacob P. Bedrossian, PhD  
Andrea L. Bertozzi, PhD (*Betsy Wood Knapp Professor of Innovation and Creativity*)  
Marek Biskup, PhD  
Don M. Blasius, PhD  
Mario Bonk, PhD  
Artem Chernikov, PhD  
Tom Chou, PhD  
Lara Dolecek, PhD  
Richard S. Elman, PhD  
Wilfrid D. Gangbo, PhD  
Robert E. Greene, PhD  
Michael A. Hill, PhD  
Ko Honda, PhD  
Chandrashekhhar Khare, PhD  
Mikhail Khitrik, PhD  
Rowan B. Killip, PhD  
Inwon C. Kim, PhD  
Ker-Chau Li, PhD  
Kefeng Liu, PhD  
Andrew S. Marks, PhD  
Alexander S. Merkurjev, PhD  
Deanna M. Needell, PhD (*Dunn Family Endowed Professor of Data Theory*)

Itay Neeman, PhD  
William I. Newman, PhD  
Stanley J. Osher, PhD  
Rafail Ostrovsky, PhD  
Igor Pak, PhD  
Peter Petersen, PhD  
Sorin T. Popa, PhD  
Mason A. Porter, PhD  
Marcus L. Roper, PhD  
Raphael A. Rouquier, PhD  
Amit Sahai, PhD (*Symantec Term Professor of Computer Science*)  
Sucharit Sarkar, PhD  
Hayden K. Schaeffer, PhD  
Romyar T. Sharifi, PhD  
Dimitri Y. Shlyakhtenko, PhD  
Terence C. Tao, PhD (*James and Carol Collins Professor of Letters and Science*)  
Burt Totaro, PhD  
Lieven Vandenbergh, PhD  
Luminita A. Vese, PhD  
Monica Visan, PhD  
Jun Yin, PhD  
Wotao Yin, PhD  
William R. Zame, PhD

### Professors Emeriti

Kirby A. Baker, PhD  
Russell E. Caflisch, PhD  
Lennart Carleson, PhD  
Tony F. Chan, PhD  
Lincoln Chayes, PhD  
Shiu-Yuen Cheng, PhD  
William D. Duke, PhD  
Robert D. Edwards, PhD  
Gregory I. Eskin, PhD  
Hector O. Fattorini, PhD  
Thomas S. Ferguson, PhD  
Theodore W. Gamelin, PhD  
John B. Garnett, PhD  
David A. Gieseker, PhD  
Mark L. Green, PhD  
Nathaniel Grossman, PhD  
Alfred W. Hales, PhD  
Haruzo Hida, PhD  
Robert I. Jennrich, PhD  
Alan J. Laub, PhD  
Gang Liu, PhD  
Donald A. Martin, PhD  
Yiannis N. Moschovakis, PhD  
James V. Ralston, Jr., PhD  
Bruce L. Rothschild, PhD  
Murray M. Schacher, PhD  
Roberto H. Schonmann, PhD  
Masamichi Takesaki, PhD  
James H. White, PhD

### Associate Professors

Alyson K. Fletcher, PhD  
Chenfanfu Jiang, PhD  
Georg Menz, PhD  
Guido F. Montúfar, PhD

### Assistant Professors

Pavel Galashin, PhD  
Joaquin L. Moraga, PhD  
Hong Wang, PhD

### Senior Lecturer SOE

William J. Conley, PhD

### Adjunct Professor

Christian Ratsch, PhD

### Adjunct Assistant Professor

Mary P. Greene, MS

## Overview

Gauss called mathematics the “queen of the sciences.” It has provided powerful intellectual tools that have made possible tremendous advances in modern science and technology. The Department of Mathematics offers courses of study that introduce students to the fundamentals of mathematics and allow them to master the most important parts of the subject, both pure and applied. It leads doctoral students to the frontiers of mathematical research, where they can begin to push back those frontiers.

## Undergraduate Study

In addition to its seven majors, the department also hosts the Mathematics/Economics Interdepartmental Program, which offers a Mathematics/Economics major.

## Undergraduate Policies

### Preliminary Examination in Mathematics

If students wish to enroll in Mathematics 1, 3A, 31A, or 31AL, they must pass the [Mathematics Diagnostic Test](#).

For specific information about the online test, refer to the [Schedule of Classes](#) or the [department website](#); or contact the Mathematics Student Services Office, 6356 Mathematical Sciences.

### Advanced Placement in Calculus

Students who have taken the Advanced Placement (AP) Calculus AB Test and obtained a score of 5 receive 4 units of credit and Mathematics 31A equivalency; those with a score of 4 receive 4 units of calculus and analytic geometry credit. They may petition for 31A equivalency, or they may take course 31A or 31AL at UCLA, although they must still satisfy the course requisites (Mathematics Diagnostic Test). Students who take the BC Test and obtain a score of 5 receive 8 units of credit and Mathematics 31A, 31B equivalency; those with a score of 4 receive 4 units of credit and Mathematics 31A equivalency. They may petition for 31A, 31B equivalency, or they may take courses 31A or 31AL, 31B at UCLA, although they must still satisfy the course requisites (Mathematics Diagnostic Test). Students receiving a score of 4 or lower on the AB examination, or 3 or lower on the BC examination, should consult with the undergraduate mathematics counselor prior to enrolling in a calculus course at UCLA.

### Credit Limitations

Credit is given for at most one course in each of the following groups: (1) 3A, 31A, 31AL; (2) 3B, 31B, 31E; (3) 110A, 117; (4) 170A, 170E.

Courses from only one of the following statistics sequences may be applied toward any mathematics major: (1) Statistics 100A (or Mathematics 170A or 170E), 100B (or Mathematics 170S), 100C or (2) former Statistics 110A, 110B.

Mathematics 132 is not open for credit to students with credit for Physics 132.

Mathematics 151A is not open for credit to students with credit for Electrical and Computer Engineering 133A.

Mathematics 170A, 170E, and Statistics 100A are not open for credit to students with credit for Electrical and Computer Engineering 131A.

Mathematics 170S is not open for credit to students with credit for Statistics 100B.

Mathematics 174E is not open for credit to students with credit for Economics 141.

For lower-division mathematics courses, students may not take or repeat a course for credit if it is a requisite for a more advanced lower-division course for which they already have credit. This applies in particular to the repetition of courses (e.g., if students wish to repeat Mathematics 31B, they must do so before completing course 32B; if students wish to repeat Mathematics 3B or 31B or 32A, they must do so before completing course 33A).

For upper-division mathematics courses, students may not take or repeat a lower sequence course for credit if it is part of a sequence for which they already have credit. This applies in particular to the repetition of courses (e.g., if students wish to repeat Mathematics 131A, they must do so before completing course 131B or 131BH).

Students may not receive credit for both a course and the honors version of that course (e.g., they may not receive credit for both Mathematics 131A and 131AH).

## Honors Courses

The department offers lower-division honors courses in calculus, and upper-division honors courses in algebra and analysis. The courses are intended for students (not necessarily mathematics majors) who desire a broad, comprehensive introduction to these topics.

## Program in Computing Courses

Program in Computing 1 is designed for students who wish a broad, general introduction to the topic of computers and computation, but who have no prior experience in computing.

Courses 10A, 10B, and 10C provide an extensive introduction to programming, using the C++ language. Courses 16A, 16B, 20A, and 40A cover Python, Java, and Internet programming. They are of interest to majors in many fields, including those completing a specialization in Computing. Students should consult with their major department regarding enrollment in these courses, their relevance to their program, and suitability for use in fulfilling requisites.

## Subject Matter Preparation Program for Single-Subject Credential in Mathematics

Students interested in obtaining a single-subject secondary school credential in mathematics should consult with a departmental counselor regarding the requirements for a waiver from the Mathematics California Subject Examination for Teachers (CSET), which is required by the [California Commission on Teacher Credentialing](#). Students should meet with a departmental counselor as early in their undergraduate careers as possible because the program does require additional courses beyond the major requirements. See the [Curtis Center](#) website for details on teaching credential requirements. For additional information, contact the Education Department credentialing specialist at 310-825-8328.

## Undergraduate Majors

### Mathematics BS

The Mathematics major is designed for students whose basic interest is mathematics.

### Learning Outcomes

The Mathematics major has the following learning outcomes:

- Strong mathematical content knowledge of single and multivariate differential and integral calculus, and differential equations
- Ability to synthesize material, solve problems, and think abstractly
- Familiarity with linear algebra, techniques of proof, and foundations of real analysis
- Ability to perform basic computer programming, especially in C++

### Entry to the Major

#### Admission

Current UCLA students need to apply for the Mathematics major by filing a petition with the Student Services Office in 6356 Mathematical Sciences. All students are identified as Mathematics pre-majors until they satisfy the following minimum requirements for the major: (1) achieve grades of C or better in all pre-major mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B), (2) achieve a minimum 2.5 grade-point average in the calculus sequence with no more than two repeats, (3) complete one 12-unit term in residence in regular session at UCLA, (4) be enrolled in UCLA regular session at the time of application, and (5) file a petition to declare the major before completing 160 quarter units.

#### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Mathematics pre-major at the time they apply for admission are automatically admitted to the pre-major.

### First-Year Students

To enter the major, students must petition after they have completed the six sequenced courses with a 2.5 minimum overall grade-point average, have completed one 12-unit term in residence in regular session at UCLA, are enrolled in UCLA regular session at the time of application, and before completing 160 quarter units.

### Transfer Students

Transfer applicants to the Mathematics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of calculus for majors, one calculus-based physics (mechanics) course, one C++ programming course, and two courses from general chemistry for majors, economics, symbolic logic, and calculus-based physics.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Student Services Office after completing one 12-unit term in residence in regular session at UCLA, and while enrolled in UCLA regular session at the time of application.

## Requirements

### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, Physics 1A, Program in Computing 10A, and two courses from Chemistry and Biochemistry 20A, 20B, Economics 11, Life Sciences 7A, Philosophy 31, 132, Physics 1B, 1C, 5B, 5C.

### The Major

*Required:* Mathematics 110A, 110B, 115A, 120A, 131A, 131B, 132, and at least five elective courses from 106 through 199 and Statistics 100A through 102C.

### Honors Program

The program entails taking a specified sequence of courses as part of the major requirements, completing an approved seminar offered by the Mathematics Department or submitting an original research project, and earning an overall GPA of at least 3.6 in approved upper-division and graduate mathematics courses.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Mathematics 61 or 180, Program in Computing 10A, 10B, two courses from 10C, 15, 16A, 20A, 40A, and at least two courses from Mathematics 149 through 159, with a minimum grade of C– in each course and a combined grade-point average of at least 2.0. Students must petition for admission to this program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the Student Services Office).



Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade. The mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B) are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course. The other preparation courses must be completed with a minimum overall 2.0 grade-point average and a grade of C– or better in each course.

Repetition of more than two mathematics sequenced courses or of any mathematics sequenced course more than once results in automatic dismissal from the major.

### The Major

Each course must be taken for a letter grade.

The 12 courses must be completed with a minimum overall grade-point average of 2.0, with grades of C– or better in Mathematics 115A and 131A.

### Honors Program

Students who wish to graduate with departmental honors should apply for admission to the honors program in the Student Services Office. They may apply any time after completing four courses from the calculus sequence or from upper-division mathematics courses with an overall grade-point average of 3.6 or better.

Students completing the program are awarded honors at graduation; if they demonstrate exceptional achievement (i.e., at least a 3.8 GPA in upper-division mathematics courses taken for the major), they are awarded highest honors. Contact the department for more information.

## Applied Mathematics BS

The Applied Mathematics major concerns applications of mathematics to the sciences, including the life, social and physical sciences, and engineering.

### Learning Outcomes

The Applied Mathematics major has the following learning outcomes:

- Strong mathematical content knowledge of single and multivariate differential and integral calculus, and differential equations
- Ability to synthesize material, solve problems, and think abstractly
- Familiarity with linear algebra, techniques of proof, and foundations of real analysis
- Ability to perform basic computer programming, especially in C++

### Entry to the Major

#### Admission

Current UCLA students need to apply for the Applied Mathematics major by filing a petition

with the Student Services Office in 6356 Mathematical Sciences. All students are identified as Applied Mathematics pre-majors until they satisfy the following minimum requirements for the major: (1) achieve grades of C or better in all pre-major mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B), (2) achieve a minimum 2.5 grade-point average in the calculus sequence with no more than two repeats, (3) complete one 12-unit term in residence in regular session at UCLA, (4) be enrolled in UCLA regular session at the time of application, and (5) file a petition to declare the major before completing 160 quarter units.

#### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Applied Mathematics pre-major at the time they apply for admission are automatically admitted to the pre-major.

#### First-Year Students

To enter the major, students must petition after they have completed the six sequenced courses with a 2.5 minimum overall grade-point average, have completed one 12-unit term in residence in regular session at UCLA, are enrolled in UCLA regular session at the time of application, and before completing 160 quarter units.

#### Transfer Students

Transfer applicants to the Applied Mathematics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of calculus for majors, two calculus-based physics courses, one C++ programming course, and one course from general chemistry for majors or calculus-based physics.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Student Services Office after completing one 12-unit term in residence in regular session at UCLA, and while enrolled in UCLA regular session at the time of application.

### Requirements

#### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, Physics 1A, 1B, Program in Computing 10A, and one course from Chemistry and Biochemistry 20A, 20B, Physics 1C.

#### The Major

*Required:* Mathematics 115A, 131A, either 131B or 132, 142; two two-term sequences from two of the following categories: *numerical analysis*—courses 151A and 151B, *probability and statistics*—courses 170A and 170B, or Statistics 100A and 100B, *differential equations*—courses 134 and 135; four courses from 106 through 199 and Statistics 100A through 102C (appropriate courses from other departments may be substituted for some of the additional

courses provided departmental consent is given before such courses are taken).

### Honors Program

The program entails taking a specified sequence of courses as part of the major requirements, completing an approved seminar offered by the Mathematics Department or submitting an original research project, and earning an overall GPA of at least 3.6 in approved upper-division and graduate mathematics courses.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Mathematics 61 or 180, Program in Computing 10A, 10B, two courses from 10C, 15, 16A, 20A, 40A, and at least two courses from Mathematics 149 through 159, with a minimum grade of C– in each course and a combined grade-point average of at least 2.0. Students must petition for admission to this program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the Student Services Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade. The mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B) are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course. The other preparation courses must be completed with a minimum overall 2.0 grade-point average and a grade of C– or better in each course.

Repetition of more than two mathematics sequenced courses or of any mathematics sequenced course more than once results in automatic dismissal from the major.

### The Major

Each course must be taken for a letter grade. The 12 courses must be completed with a minimum overall grade-point average of 2.0, with grades of C– or better in Mathematics 115A and 131A.

### Honors Program

Students who wish to graduate with departmental honors should apply for admission to the honors program in the Student Services Office. They may apply any time after completing four courses from the calculus sequence or from upper-division mathematics courses with an overall grade-point average of 3.6 or better.

Students completing the program are awarded honors at graduation; if they demonstrate exceptional achievement (i.e., at least a 3.8 GPA in upper-division mathematics courses taken for the major), they are awarded highest honors. Contact the department for more information.

## Data Theory BS

### Capstone Major

The Data Theory major is a designated capstone major. Students work in small teams to solve a large, open-ended data science problem for community- or campus-based clients. Emphasis is placed on the development and theoretical support of a statistical model or algorithmic approach. Alternatively, students may undertake research on the foundations of data science, studying advanced topics and writing a senior thesis.

### Learning Outcomes

The Data Theory major has the following learning outcomes:

- Understanding of mathematical and statistical bases of most common methods of data science
- Ability to explain in writing, with examples, how concepts of statistics and mathematics together solve real-world problems involving data
- Skillfully manage data
- Development, comparison, and testing of data-driven models to solve problems
- Understanding and explanation of variability when fitting and interpreting models of real-world systems
- Carrying out of reproducible data analysis using accepted practices of research community
- Written and verbal communication of findings of analyses
- Identification of areas of active research in data science
- Insightfully address problems concerning ethics of data use and storage, including data privacy and security
- Demonstrated mastery of concepts and skills of machine learning, modeling and supervised learning, dimension reduction and unsupervised learning, and deep learning
- Demonstrated familiarity with numerous software tools used in statistical and data science work and research
- Demonstrated knowledge of mathematical foundations, including pure and applied linear algebra, basic analysis, probability, and optimization theory
- Study and evaluation of proofs of mathematical and statistical results employed in data theory
- Work effectively in a team on a data science problem
- Demonstrated eligibility for graduate study in applied mathematical science or statistical science

### Entry to the Major

#### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Data Theory pre-major at the time they apply for admission are automatically admitted to the pre-major. Students must visit the student services office of either the Mathematics Department or Statistics and Data Sci-

ence Department in order to petition to enter the major. All students are identified as Data Theory pre-majors until they satisfy the following minimum requirements for the major.

#### First-Year Students

To enter the major, students must petition after they have completed the preparation for the major courses. Students who have an overall grade-point average (GPA) of at least 3.3 in the preparation for the major courses, and have completed all preparation for the major courses before the fall quarter of their third year at UCLA, will be admitted to the major.

Students whose overall GPA is between 2.7 and 3.3, or who fail to complete the preparation courses before the fall quarter of their third year, are admitted only if space is available. All students must petition before they have earned 160 units, or by the winter quarter of their junior year, whichever comes first. Only grades for courses that are taken at the University of California, including UC summer schools, are counted for this GPA computation.

#### Transfer Students

Transfer applicants to the Data Theory major are admitted to the pre-major. Applicants with 90 or more units must have completed the following by the end of the spring term prior to entry to UCLA: two years of calculus for physical science and/or engineering majors, one linear algebra course, one C++ programming course, one statistics course.

Transfer students must have completed all preparation for the major coursework, and must have passed Mathematics 42, 115A, and at least 4 units of upper-division coursework required for this major with at least a 3.3 GPA, in order to be eligible to petition to enter the major. Transfer students will be admitted to the major if they satisfy these requirements. Transfer students who fail to meet these criteria for automatic admission will be admitted only if resources allow. Transfer students must petition to enter the major no later than the spring quarter of their first year at UCLA.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students must visit the student services office of either the Mathematics Department or Statistics and Data Science Department in order to petition to enter the major.

### Requirements

#### Preparation for the Major

*Required:* Mathematics 31A, 31B, 32A, 32B, 33A, 42, 115A; Program in Computing 10A; one course selected from Statistics 10, 12, 13, 15; Statistics 20, 21.

#### The Major

*Required:* Mathematics 118, 131A, 156, Statistics 101A, 101C, 102A, 102B, 147, 184; one two-quarter sequence: Mathematics 170E and 170S, or Statistics 100A and 100B; one elective selected from Mathematics 151A, 151B, 164, 168, 171, 174E, 178A, 178B, 178C, 179 or 182;

one elective selected from Statistics 100C, 101B, 102C, or C151 through 199 (except Statistics 182, 186, or 189); two additional electives from either of the above lists; a capstone course (Mathematics M148 or Statistics M148), to be taken during the final year.

### Policies

#### Preparation for the Major

Each course must be completed with a grade of C or better and an overall grade-point average of at least 2.7. All students must take Mathematics 42 at UCLA. The major is limited in size according to available resources.

Repetition of more than two mathematics or statistics sequenced courses or of any mathematics or statistics sequenced course more than once results in automatic dismissal from the major.

#### The Major

Only 4 units of course 199 may be applied toward the major. Courses 189 and 189HC may not be applied toward any of the major requirements.

Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

## Financial Actuarial Mathematics BS

The Financial Actuarial Mathematics major concerns the applications of mathematics to finance, the actuarial field, and related areas.

### Learning Outcomes

The Financial Actuarial Mathematics major has the following learning outcomes:

- Strong mathematical content knowledge of single and multivariate differential and integral calculus, and differential equations
- Demonstrated knowledge of how to synthesize material, solve problems, and think abstractly
- Familiarity with linear algebra, techniques of proof, and foundations of real analysis
- Working knowledge of probability and financial and insurance mathematics at the level needed to pass of the first three preliminary actuarial examinations by the Society of Actuaries
- Strong content knowledge of the fourth and fifth preliminary examinations.
- Familiarity with basic statistical analysis including probability distributions, random variables, survey sampling, testing, data summary, sums of squares principle, testing general linear hypothesis in regression, and inference procedures
- Ability to perform basic computer programming, especially in C++

### Entry to the Major

#### Admission

Current UCLA students need to apply for the Financial Actuarial Mathematics major by filing a petition with the Student Services Office in

6356 Mathematical Sciences. All students are identified as Financial Actuarial Mathematics pre-majors until they satisfy the following minimum requirements for the major: (1) achieve grades of C or better in all pre-major mathematics sequenced courses (Mathematics 31A, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A) with a minimum 2.5 grade-point average and no more than two repeats, (2) achieve grades of C or better in all pre-major economics courses (Economics 1, 2, 11, Management 1A, 1B) with a minimum 2.5 grade-point average and no more than one repeat, (3) complete one 12-unit term in residence in regular session at UCLA, (4) be enrolled in UCLA regular session at the time of application, and (5) file a petition to declare the major before completing 160 quarter units.

### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Financial Actuarial Mathematics pre-major at the time they apply for admission are automatically admitted to the pre-major.

### First-Year Students

To enter the major, students must petition after they have completed the six sequenced courses with a 2.5 minimum overall grade-point average, have completed one 12-unit term in residence in regular session at UCLA, are enrolled in UCLA regular session at the time of application, and before completing 160 quarter units.

### Transfer Students

Transfer applicants to the Financial Actuarial Mathematics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of calculus for majors, one C++ programming course, one microeconomic theory course, one macroeconomics course, and two terms of accounting principle.

Transfer credit for any of the above is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Student Services Office after completing one 12-unit term in residence in regular session at UCLA, and while enrolled in UCLA regular session at the time of application.

## Requirements

### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, and one course selected from Mathematics 11N, 42, 61, 70; Economics 1, 2, 11, Management 1A, Program in Computing 10A, 10B or 16A.

### The Major

*Required:* Ten mathematics/statistics courses, including Mathematics 115A, 131A, 170E,

170S, 174E (or Economics 141 or Statistics C183), 177, 178A, 178B, 178C, 179; and two courses from Economics 101 through 199B, Statistics 100C.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Mathematics 61 or 180, Program in Computing 10A, 10B, two courses from 10C, 15, 16A, 20A, 40A, and at least two courses from Mathematics 149 through 159, with a minimum grade of C- in each course and a combined grade-point average of at least 2.0. Students must petition for admission to this program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the Student Services Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade. The economics preparation for the major courses (Economics 1, 2, 11, Management 1A) are calculated separately from the mathematics preparation for the major courses (Mathematics 11N or 42 or 61 or 70, 31A or 31AL, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A, 10B or 16A).

The economics preparation courses must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course, as must the mathematics preparation courses.

Repetition of more than one economics preparatory course, more than two mathematics preparation courses, or of any economics or mathematics preparation course more than once results in automatic dismissal from the major.

### The Major

Each course must be taken for a letter grade. Transfer credit is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major.

To graduate, the ten Mathematics Department courses must be completed with an overall grade-point average of 2.0, with grades of C- or better in Mathematics 115A and 131A, as must the two elective courses.

## Mathematics of Computation BS

The Mathematics of Computation major is for mathematics students who have a secondary interest in computing.

### Learning Outcomes

The Mathematics of Computation major has the following learning outcomes:

- Strong mathematical content knowledge of single and multivariate differential and integral calculus, and differential equations

- Ability to synthesize material, solve problems, and think abstractly
- Familiarity with linear algebra, techniques of proof, and foundations of real analysis
- Ability to perform basic computer programming, especially in C++

## Entry to the Major

### Admission

Current UCLA students need to apply for the Mathematics of Computation major by filing a petition with the Student Services Office in 6356 Mathematical Sciences. All students are identified as Mathematics of Computation pre-majors until they satisfy the following minimum requirements for the major: (1) achieve grades of C or better in all pre-major mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B), (2) achieve a minimum 2.5 grade-point average in the calculus sequence with no more than two repeats, (3) complete one 12-unit term in residence in regular session at UCLA, (4) be enrolled in UCLA regular session at the time of application, and (5) file a petition to declare the major before completing 160 quarter units.

### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Mathematics of Computation pre-major at the time they apply for admission are automatically admitted to the pre-major.

### First-Year Students

To enter the major, students must petition after they have completed the six sequenced courses with a 2.5 minimum overall grade-point average, have completed one 12-unit term in residence in regular session at UCLA, are enrolled in UCLA regular session at the time of application, and before completing 160 quarter units.

### Transfer Students

Transfer applicants to the Mathematics of Computation major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of calculus for majors, one discrete structures course, two calculus-based physics courses, three programming courses, and one course from general chemistry for majors or calculus-based physics.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Student Services Office after completing one 12-unit term in residence in regular session at UCLA, and while enrolled in UCLA regular session at the time of application.

## Requirements

### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, 61, Physics 1A, 1B, Program in Computing 10A, 10B, 10C, and one course



from Chemistry and Biochemistry 20A, 20B, Physics 1C.

### The Major

*Required:* Eleven Mathematics Department courses, including Mathematics 115A, 131A, 131B or 132, 151A, 151B, and six courses from 106 through 199 and Statistics 100A through 101C; three upper-division computer science courses (12 units).

### Honors Program

The program entails taking a specified sequence of courses as part of the major requirements, completing an approved seminar offered by the Mathematics Department or submitting an original research project, and earning an overall GPA of at least 3.6 in approved upper-division and graduate mathematics courses.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade. The mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B) are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course. The other preparation courses must be completed with a minimum overall 2.0 grade-point average and a grade of C– or better in each course.

Repetition of more than two mathematics sequenced courses or of any mathematics sequenced course more than once results in automatic dismissal from the major.

#### The Major

Each course must be taken for a letter grade. The 14 courses must be completed with a minimum overall grade-point average of 2.0, with grades of C– or better in Mathematics 115A and 131A.

#### Honors Program

Students who wish to graduate with departmental honors should apply for admission to the honors program in the Student Services Office. They may apply any time after completing four courses from the calculus sequence or from upper-division mathematics courses with an overall grade-point average of 3.6 or better.

Students completing the program are awarded honors at graduation; if they demonstrate exceptional achievement (i.e., at least a 3.8 GPA in upper-division mathematics courses taken for the major), they are awarded highest honors. Contact the department for more information.

## Mathematics/Applied Science BS

The Mathematics/Applied Science major is designed for students with a substantial interest in mathematics and its applications to a particular field. It is an individual major in that students, in consultation with a faculty adviser, design their

own program. They may also select one of the established programs: mathematics/history of science plan or medical and life sciences plan. In the past, Mathematics/Applied Science majors have combined the study of mathematics with fields such as atmospheric and oceanic sciences, biochemistry, biology, chemistry, economics, geography, physics, psychology, and statistics.

Students interested in designing an individual program should meet with the undergraduate adviser, 6356 Mathematical Sciences, during their sophomore year. A proposed program is drawn up, then forwarded to the mathematics/applied science curriculum committee for approval. All programs must include the following preparation for the major and major courses.

### Learning Outcomes

The Mathematics/Applied Science major has the following learning outcomes:

- Strong mathematical content knowledge of single and multivariate differential and integral calculus, and differential equations
- Familiarity with linear algebra, techniques of proof, and foundations of real analysis
- Ability to synthesize material, solve problems, and think abstractly
- Ability to perform basic computer programming, especially in C++
- Familiarity with basic statistical analysis including probability distributions, random variables, survey sampling, testing, data summary, sums of squares principle, testing general linear hypothesis in regression, and inference procedures

### Entry to the Major

#### Admission

Current UCLA students need to apply for the Mathematics/Applied Science major by filing a petition with the Student Services Office in 6356 Mathematical Sciences. All students are identified as Mathematics/Applied Science pre-majors until they satisfy the following minimum requirements for the major: (1) achieve grades of C or better in all pre-major mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B), (2) achieve a minimum 2.5 grade-point average in the calculus sequence with no more than two repeats, (3) complete one 12-unit term in residence in regular session at UCLA, (4) be enrolled in UCLA regular session at the time of application, and (5) file a petition to declare the major before completing 160 quarter units.

#### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Mathematics/Applied Science pre-major at the time they apply for admission are automatically admitted to the pre-major.

#### First-Year Students

To enter the major, students must petition after they have completed the six sequenced courses with a 2.5 minimum overall grade-point average, have completed one 12-unit term in residence in regular session at UCLA, are en-

rolled in UCLA regular session at the time of application, and before completing 160 quarter units.

### Transfer Students

Transfer applicants to the Mathematics/Applied Science major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of calculus for majors and one C++ programming course. Additional courses are required for each concentration plan.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Student Services Office after completing one 12-unit term in residence in regular session at UCLA, and while enrolled in UCLA regular session at the time of application.

### Requirements

#### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A. Additional preparation, varying with the individual program, may be required.

#### The Major

*Required:* Fourteen courses, seven in the Mathematics Department selected from Mathematics 106 through 199 and seven upper-division courses in a related field selected from one or two other departments.

#### Mathematics/History of Science Plan

##### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, Program in Computing 10A, and three courses from History 2B, 3A through 3D.

##### The Major

*Required:* Eight mathematics courses, including Mathematics 106, 115A, 131A, 134, 170A, and three courses from 110A through 199; six outside courses to be selected from History 179A through 180C, Philosophy 124, and any upper-division Honors Collegium course with history of science/medicine content.

#### Medical and Life Sciences Plan

##### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, Chemistry and Biochemistry 20A, 20B, 20L, 30A, 30AL, Life Sciences 7A, 7B, 7C, Physics 1A, 1B, Program in Computing 10A.

##### The Major

*Required:* Seven mathematics courses, including Mathematics 115A, 131A, 134, 151A, 170A, 170B, and one course from 110A through 199 and Statistics 100B through 101C; six outside courses, including Neuroscience M101A, M101B, and M101C, and three courses from Biostatistics 100A, Chemistry and Biochemistry CM160A, Computer Science CM186, Ecology and Evolutionary Biology C119A, 133, C135, Life Sciences 107, Physiological Science 100, M135, and any additional upper-division course



from these fields with consent of the administering department and the Mathematics Department.

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Mathematics 61 or 180, Program in Computing 10A, 10B, two courses from 10C, 15, 16A, 20A, 40A, and at least two courses from Mathematics 149 through 159, with a minimum grade of C- in each course and a combined grade-point average of at least 2.0. Students must petition for admission to this program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the Student Services Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade. The mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B) are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course. The other preparation courses must be completed with a minimum overall 2.0 grade-point average and a grade of C- or better in each course.

Repetition of more than two mathematics sequenced courses or of any mathematics sequenced course more than once results in automatic dismissal from the major.

#### History of Science Plan

Each course must be taken for a letter grade. The mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B) are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course. The other preparation courses must be completed with a minimum overall 2.0 grade-point average and a grade of C- or better in each course.

Repetition of more than two mathematics sequenced courses or of any mathematics sequenced course more than once results in automatic dismissal from the major.

#### Medical and Life Sciences Plan

Each course must be taken for a letter grade. The mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B) are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course. The other preparation courses must be completed with a minimum overall 2.0 grade-point average and a grade of C- or better in each course.

Repetition of more than two mathematics sequenced courses or of any mathematics se-

quenced course more than once results in automatic dismissal from the major.

### The Major

Each course must be taken for a letter grade. The seven Mathematics Department courses must be completed with a minimum overall grade-point average of 2.0, with grades of C- or better in Mathematics 115A and 131A, as must the seven courses outside mathematics.

At least five of the courses from the related discipline must be taken after the program has been approved. Students are not admitted to the major if they have 135 or more units by the end of the term in which they plan to enter the program.

#### History of Science Plan

Each course must be taken for a letter grade. The eight Mathematics Department courses must be completed with a minimum overall grade-point average of 2.0, with grades of C- or better in Mathematics 115A and 131A, as must the six outside courses from history, philosophy, or physiological science.

#### Medical and Life Sciences Plan

Each course must be taken for a letter grade. The seven Mathematics Department courses must be completed with a minimum overall grade-point average of 2.0, with grades of C- or better in Mathematics 115A and 131A, as must the six outside courses.

## Mathematics for Teaching BS

The Mathematics for Teaching major is designed primarily for students planning to teach mathematics at the high school level. It provides exposure to a broad range of mathematical topics, especially those appropriate for the prospective teacher. Students planning to pursue graduate studies in mathematics or related fields are encouraged to enter the Mathematics, Applied Mathematics, or Mathematics of Computation major.

### Capstone Major

The Mathematics for Teaching major is a designated capstone major. In their senior year students complete a year-long course sequence that culminates in a model lesson presentation, paper, and portfolio. Through their capstone work, students demonstrate their familiarity with research and current issues in mathematics education, as well as their capacities to problem solve; reason quantitatively, geometrically, and algebraically; construct viable arguments; critique others' reasoning; and use tools strategically.

### Learning Outcomes

The Mathematics for Teaching major has the following learning outcomes:

- Strong mathematical content knowledge
- Sound theoretical and practical background for mathematics expected to be taught in secondary schools
- Understanding of the importance of mathematical thinking to design teaching to imbue students with a problem-solving and analytical spirit

- Familiarity with pedagogical research and ability to apply it to classroom work
- Ability to effectively plan lessons
- Preparation and experience in different modes of instruction
- Ability to use mathematical sophistication to shape lessons

## Entry to the Major

### Admission

Current UCLA students need to apply for the Mathematics for Teaching major by filing a petition with the Student Services Office in 6356 Mathematical Sciences. All students are identified as Mathematics for Teaching pre-majors until they satisfy the following minimum requirements for the major: (1) achieve grades of C or better in all pre-major mathematics sequenced courses (Mathematics 31A, 31B, 32A, 32B, 33A, 33B), (2) achieve a minimum 2.5 grade-point average in the calculus sequence with no more than two repeats, (3) complete one 12-unit term in residence in regular session at UCLA, (4) be enrolled in UCLA regular session at the time of application, and (5) file a petition to declare the major before completing 160 quarter units.

### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Mathematics for Teaching pre-major at the time they apply for admission are automatically admitted to the pre-major.

### First-Year Students

To enter the major, students must petition after they have completed the six sequenced courses with a 2.5 minimum overall grade-point average, have completed one 12-unit term in residence in regular session at UCLA, are enrolled in UCLA regular session at the time of application, and before completing 160 quarter units.

### Transfer Students

Transfer applicants to the Mathematics for Teaching major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of calculus for majors, one discrete structures course, one C++ programming course, and three courses from calculus-based physics, general chemistry for majors, and computing.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Student Services Office after completing one 12-unit term in residence in regular session at UCLA, and while enrolled in UCLA regular session at the time of application.

## Requirements

### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, 61, Physics 1A or 5A, Program

in Computing 10A, and two courses from Chemistry and Biochemistry 20A, 20B, Physics 1B, 1C, 5B, 5C, Program in Computing 10B through 97.

### The Major

*Required:* Mathematics 106, 110A or 117, 115A, 120A or 123, 131A, 170A or Statistics 100A, Statistics 100B, one course from Mathematics 110B through 191H or Statistics 100C, one course from Mathematics 131B through 136, one course from 142 through 167, and a capstone series in the senior year (courses 105A, 105B, 105C).

### Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major and (2) completing Mathematics 61 or 180, Program in Computing 10A, 10B, two courses from 10C, 15, 16A, 20A, 40A, and at least two courses from Mathematics 149 through 159, with a minimum grade of C- in each course and a combined grade-point average of at least 2.0. Students must petition for admission to this program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the Student Services Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade. The mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B) are calculated separately from the other preparation for the major courses and must be completed with a minimum overall 2.5 grade-point average and a grade of C or better in each course. The other preparation courses must be completed with a minimum overall 2.0 grade-point average and a grade of C- or better in each course.

Repetition of more than two mathematics sequenced courses or of any mathematics sequenced course more than once results in automatic dismissal from the major.

#### The Major

Each course must be taken for a letter grade. The 13 courses must be completed with a minimum overall grade-point average of 2.0, with grades of C- or better in Mathematics 115A and 131A.

## Undergraduate Minors

### Mathematics Minor

The Mathematics minor is designed to provide students with the opportunity to widen their background and general comprehension of the role of mathematics in various disciplines.

#### Admission

To enter the minor, students must have completed all of the lower-division minor courses with grades of C or better (an overall grade-

point average of 2.0 or better) and at least one upper-division mathematics course.

### The Minor

*Required Lower-Division Courses (12 units):* Mathematics 32A, 33A, 33B.

*Required Upper-Division Courses (20 units):* At least five courses (20 units) selected from Mathematics 106 through 199.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade. Students must complete all lower-division courses with grades of C or better. Upper-division courses must have an overall grade-point average of 2.0 or better that is calculated separately from the lower-division courses. Successful completion of the minor is indicated on the transcript and diploma.

## Mathematics for Teaching Minor

The Mathematics for Teaching minor is designed for students majoring in fields other than mathematics who plan to teach secondary mathematics after graduation. The minor recognizes completion of requisite coursework for the Joint Mathematics Education Program and also prepares students for the contents of the California Subject Examination for Teachers (CSET). Post-bachelor credentialing programs will see that students with this minor have taken coursework on secondary mathematics from an advanced standpoint that is recommended by the [Conference Board of the Mathematical Sciences](#) and the [California Commission on Teacher Credentialing](#). This minor is not open to students in any Mathematics Department major.

### Admission

To enter the minor, students must have completed Mathematics 115A with a grade of C or better. If Mathematics 115A was not completed at UCLA, students must show proof that they completed an equivalent course with a grade of C or better.

### The Minor

*Required Upper-Division Courses (29 units):* Mathematics 105A, 105B, 105C, 110A or 117, 115A, 120A or 123, 131A.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade with a grade of C- or better in each, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Mathematics MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Mathematics MAT

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Mathematics

### Lower-Division Courses

**1. Precalculus. (4)** Lecture, three hours; discussion, one hour. Preparation: three years of high school mathematics. Requisite: successful completion of Mathematics Diagnostic Test. Function concept. Linear and polynomial functions and their graphs, applications to optimization. Inverse, exponential, and logarithmic functions. Trigonometric functions. P/NP or letter grading.

**3A. Calculus for Life Sciences Students. (4)** Lecture, three hours; discussion, one hour. Preparation: three and one half years of high school mathematics (including trigonometry). Enforced prerequisite: successful completion of Mathematics Diagnostic Test (score of 48 or better) or course 1 with grade of C- or better. Not open for credit to students with credit in another calculus sequence. Modeling with functions, limits, and derivatives, decisions and optimization in biology, derivative rules and tools. P/NP or letter grading.

**3B. Calculus for Life Sciences Students. (4)** Lecture, three hours; discussion, one hour. Requisite: course 3A with grade of C- or better. Not open for credit to students with credit for course 31B. Applications of differentiation, integration, differential equations, linear models in biology, phase lines and classifying equilibrium values, bifurcations. P/NP or letter grading.

**3C. Ordinary Differential Equations with Linear Algebra for Life Sciences Students. (4)** Lecture, three hours; discussion, one hour. Requisite: course 3B with grade of C- or better. Multivariable modeling, matrices and vectors, eigenvalues and eigenvectors, linear and nonlinear systems of differential equations, probabilistic applications of integration. P/NP or letter grading.

**11N. Gateway to Mathematics: Number Theory. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B. Introductory number theory course for freshmen and sophomores. Topics include prime number theory and cryptographic applications, factorization theory (in integers and Gaussian integers), Pythagorean triples, Fermat descent (for sums of squares and Fermat quartic), Pell's equation, and Diophantine approximation. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**31A. Differential and Integral Calculus. (4)** Lecture, three hours; discussion, one hour. Preparation: at least three and one half years of high school mathematics (including some coordinate geometry and trigonometry). Requisite: successful completion of Mathematics Diagnostic Test or course 1 with grade of C– or better. Differential calculus and applications; introduction to integration. P/NP or letter grading.

**31AL. Differential and Integral Calculus Laboratory. (5)** Lecture, three hours; discussion, one hour; laboratory, one hour. Preparation: at least three and one-half years of high school mathematics (including some coordinate geometry and trigonometry). Requisite: successful completion of Mathematics Diagnostic Test or course 1 with grade of C– or better. Not open for credit to students with credit for course 31A. Intended for students who still need to review precalculus material (laboratory) while starting calculus. Differential calculus and applications; introduction to integration. P/NP or letter grading.

**31B. Integration and Infinite Series. (4)** Lecture, three hours; discussion, one hour. Requisite: course 31A with grade of C– or better. Not open for credit to students with credit for course 3B. Transcendental functions; methods and applications of integration; sequences and series. P/NP or letter grading.

**31BH. Integration and Infinite Series (Honors). (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 31A with grade of B or better. Honors course parallel to course 31B. P/NP or letter grading.

**31E. Calculus for Economics Students. (4)** Lecture, three hours; discussion, one hour. Requisite: course 31A with grade of C– or better. Not open for credit to students with credit for course 3B, 3C, or 31B. Calculus for applications to economics. Partial differentiation, implicit functions, exponential and logarithmic functions, extrema, optimization, constrained optimization. P/NP or letter grading.

**32A. Calculus of Several Variables. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 31A with grade of C– or better. Introduction to differential calculus of several variables, vector field theory. P/NP or letter grading.

**32AH-32BH. Calculus of Several Variables (Honors). (4-4)** Lecture, three hours; discussion, one hour. Enforced requisite for course 32AH: course 31A with grade of B or better; for 32BH: courses 31B and 32A, with grades of B or better. Honors sequence parallel to courses 32A, 32B. P/NP or letter grading.

**32B. Calculus of Several Variables. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 31B and 32A, with grades of C– or better. Introduction to integral calculus of several variables, line and surface integrals. P/NP or letter grading.

**M32T. Essential Calculus for Mathematical Biologists. (4)** (Same as Computational and Systems Biology M32 and Life Sciences M32.) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 30A, 30B. Not open to students with credit for course 31A, 31B, 32A, or 32B. Designed for life sciences students. Methods and results of single and multivariable calculus essential for quantitative training in biology. Limits, differentiation (single and several variables), optimization, integration and methods of integration, Taylor polynomials and applications to approximation, Taylor and other power series, vector valued functions, gradients, and Lagrange multipliers. P/NP or letter grading.

**33A. Linear Algebra and Applications. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 3B or 31B or 32A with grade of C– or better. Introduction to linear algebra: systems of linear equations, matrix algebra, linear independence, subspaces, bases and dimension, orthogonality, least-squares methods, determinants, eigenvalues and eigenvectors, matrix diagonalization, and symmetric matrices. P/NP or letter grading.

**33AH. Linear Algebra and Applications (Honors). (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 3B or 31B or 32A with grade of B or better. Honors course parallel to course 33A. P/NP or letter grading.

**33B. Differential Equations. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 31B with grade of C– or better. Highly recommended: course 33A. First-order, linear differential equations; second-order, linear differential equations with constant coefficients; power series solutions; linear systems. P/NP or letter grading.

**42. Introduction to Data-Driven Mathematical Modeling: Life, Universe, and Everything. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B, 32A, 32B, 33A, one statistics course from Statistics 10, 12, 13, one programming course from Computer Science 31, Program in Computing 10A, Statistics 20. Introduction to data-driven mathematical modeling combining data analysis with mechanistic modeling of phenomena from various applications. Topics include model formulation, data visualization, nondimensionalization and order-of-magnitude physics, introduction to discrete and continuous dynamical systems, and introduction to discrete and continuous stochastic models. Examples drawn from many fields and practice problems from Mathematical Contest in Modeling. P/NP or letter grading.

**61. Introduction to Discrete Structures. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B. Not open for credit to students with credit for course 180 or 184. Discrete structures commonly used in computer science and mathematics, including sets and relations, permutations and combinations, graphs and trees, induction. P/NP or letter grading.

**70. Introduction to Probability. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B. Introduction to probability through applications and examples. Topics include laws of large numbers, statistics, chance trees, conditional probability, Bayes' rule, continuous and discrete random variables, jointly distributed random variables, multivariate normal and conditional distributions. In-depth discussion of betting schemes in gambling, occurrence of rare events, coincidences, and statistical predictions. P/NP or letter grading.

**73XP. Key Issues in K-12 Mathematics. (3)** (Formerly numbered 73SL.) Seminar, two hours; fieldwork, two hours. Introduction to K-12 mathematics activity in U.S. Cultivation of interest in teaching through exploration of sequences of mathematical content and habits of mind taught in K-12. Analysis of sequences of topics in current California State Standards in Mathematics (CCSS-M), mathematical structures that underlie these sequences, and cognitive aspects of learning mathematics. Experience with professional mathematician's habits of mind outlined in CCSS-M (including proof and mathematical modeling), and effective strategies for teaching mathematics to diverse student groups. Fieldwork in local mathematics classroom arranged by Cal Teach program. P/NP grading.

**74XP. Mathematics and Pedagogy for Teaching Lementary Mathematics. (3)** (Formerly numbered 74SL.) Seminar, two hours; fieldwork, two hours. Development of professional mathematical and pedagogical understandings required to teach California's K-5 mathematics curriculum. Exploration of K-5 mathematics, practice of effective teaching strategies for all learners, and discussion of current research and standards in mathematics education. Fieldwork in local mathematics classrooms (observation and presenting lesson plan) arranged by Cal Teach program. P/NP grading.

**75XP. Mathematics and Pedagogy for Teaching Middle School Mathematics. (3)** Seminar, two hours; off-campus classroom observation and participation, two hours. Facilitates development of professional mathematical and pedagogical understandings required to teach California middle school mathematics curriculum. Exploration of topics in grades six through eight mathematics from professional perspective, practice with effective teaching strategies for all learners, and discussion of current research and standards in mathematics education. Clinical practice in local mathematics classrooms arranged by Cal Teach program. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or

other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**94. Mathematical Outreach: Explorations of Mathematics in the Physical World. (6)** Lecture, twelve hours; discussion one hour. Preparation: three years of high school mathematics (to algebra II), some basic familiarity with computers. Uses inquiry-based mathematical modeling as a tool for understanding dynamics of physical systems and chemical processes. Fundamental concepts of single-variable calculus and models of dynamical processes in physics, chemistry, and other subjects in which quantities change with time. Use of computer program C++ for problem solving, plotting, and dynamical simulation in the laboratory. Exploration of current topics in metacognition and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. P/NP or letter grading.

**95. Transition to Upper-Division Mathematics. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 32A, 32B. Not open for credit to students with credit for course 131A or 132. Introduction to rigorous methods of proof-based upper-division mathematics courses. Basic logic; structure of mathematical proofs; sets, functions, and cardinality; natural numbers and induction; construction of real numbers; topology of real numbers; sequences and convergence; continuity. May not be applied toward major requirements. P/NP or letter grading.

**97. Variable Topics in Mathematics. (4)** Lecture, three hours; discussion, one hour. Study of selected topics in mathematics at introductory level. P/NP or letter grading.

**98XA. PEERS Collaborative Learning Workshops for Life Sciences Majors. (1)** Laboratory, three hours. Corequisite: associated undergraduate lecture course in mathematics for life sciences majors. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of intuition and problem-solving skills in collaborative learning environment. May be repeated four times, but only 1 unit may be applied toward graduation. P/NP grading.

**98XB. PEERS Collaborative Learning Workshops for Physical Sciences and Engineering Majors. (1)** Laboratory, three hours. Corequisite: associated undergraduate lecture course in mathematics for physical sciences and engineering majors. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of intuition and problem-solving skills in collaborative learning environment. May be repeated four times, but only 1 unit may be applied toward graduation. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

### General and Teacher Training

**100. Problem Solving. (4)** Lecture, three hours. Requisite: course 31B with grade of C– or better. Problem-solving techniques and mathematical topics useful as preparation for Putnam Examination and similar competitions. Continued fractions, inequalities, modular arithmetic, closed form evaluation of sums and prod-

ucts, problems in geometry, rational functions and polynomials, other nonroutine problems. Participants expected to take Putnam Examination. P/NP grading.

**101. Advanced Problem Solving. (4)** Lecture, three hours. Requisite: course 100 or significant experience with mathematical competitions. Enrollment based on one selection test or past Putnam results. Advanced problem solving techniques and mathematical topics useful as preparation for Putnam competition. Problems in abstract algebra, linear algebra, number theory, combinatorics, probability, real and complex analysis, differential, equations, Fourier analysis. Regular practice tests given, similar in difficulty to Putnam competition. May be repeated for maximum of 12 units. P/NP or letter grading.

**103A. Mathematics and Pedagogy for Teaching Middle School Mathematics. (2)** Seminar, one hour; fieldwork (classroom observation and participation), two hours. Requisite: course 115A. Course 103A is enforced requisite to 103B, which is enforced requisite to 103C. Facilitates student development in mathematical and pedagogical understandings required to teach middle school mathematics curriculum. Exploration of California's grades 6 through 8 mathematics from professional perspective, practice with effective teaching strategies for all learners, and discussion of current research and standards in mathematics education with fieldwork in local mathematics classrooms. P/NP (undergraduates) or S/U (graduates) grading.

**103B. Observation and Participation: Mathematics Instruction. (2)** Seminar, one hour; fieldwork (classroom observation and participation), two hours. Enforced requisite: course 103A. Observation, participation, or tutoring in mathematics classes at middle school and secondary levels. May be repeated for credit. P/NP (undergraduates) or S/U (graduates) grading.

**103C. Observation and Participation: Mathematics Instruction. (2)** Seminar, one hour; fieldwork (classroom observation and participation), two hours. Enforced requisite: course 103B. Observation, participation, or tutoring in mathematics classes at middle school and secondary levels. May be repeated for credit. P/NP (undergraduates) or S/U (graduates) grading.

**105A. Mathematics and Pedagogy for Teaching Secondary School Mathematics. (4)** Lecture, four hours; fieldwork, 30 minutes. Requisites: courses 110A (or 117), 120A (or 123), and 131A, with grades of C- or better. Course 105A is requisite to 105B, which is requisite to 105C. Mathematical knowledge and research-based pedagogy needed for teaching key geometry topics in secondary school, including axiomatic systems, measure, and geometric transformations. Introduction to professional standards and current research for teaching secondary school mathematics. Letter grading.

**105B. Mathematics and Pedagogy for Teaching Secondary School Mathematics. (4)** Lecture, four hours; fieldwork, 30 minutes. Requisites: courses 105A, 110A (or 117), 120A (or 123), and 131A, with grades of C- or better. Mathematical knowledge and research-based pedagogy needed for teaching key polynomial, rational, and transcendental functions and related equations in secondary school; professional standards and current research for teaching secondary school mathematics. Letter grading.

**105C. Mathematics and Pedagogy for Teaching Secondary School Mathematics. (4)** Lecture, four hours; fieldwork, 30 minutes. Requisites: courses 105A, 105B, 110A (or 117), 120A (or 123), and 131A, with grades of C- or better. Mathematical knowledge and research-based pedagogy needed for teaching key analysis, probability, and statistics topics in secondary school; professional standards and current research for teaching secondary school mathematics. Letter grading.

**106. History of Mathematics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B, 32A. Roots of modern mathematics in ancient Babylonia and Greece, including place value number systems and proof. Development of algebra through Middle Ages to Fermat and Abel, invention of analytic geometry and calculus. Selected topics. P/NP or letter grading.

## Algebra, Number Theory, and Logic

**110A-110B. Algebra. (4-4)** Lecture, three hours; discussion, one hour. P/NP or letter grading. **110A.** Requisite: course 115A. Not open for credit to students with credit for course 117. Ring of integers, integral domains, fields, polynomial domains, unique factorization. **110B.** Requisite: course 110A or 117. Groups, structure of finite groups.

**110AH-110BH. Algebra (Honors). (4-4)** Lecture, three hours; discussion, one hour. Honors sequence parallel to courses 110A, 110B.

**110C. Algebra. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 110A, 110B. Field extensions, Galois theory, applications to geometric constructions, and solvability by radicals.

**111. Theory of Numbers. (4)** Lecture, three hours; discussion, one hour. Requisite: courses 110A. Algebraic number theory (including prime ideal theory), cyclotomic fields and reciprocity laws, Diophantine equations (especially quadratic forms, elliptic curves), equations over finite fields, topics in theory of primes, including prime number theorem and Dirichlet's theorem. P/NP or letter grading.

**114C. Computability Theory. (4)** Lecture, three hours; discussion, one hour. Requisite: course 110A or 131A or Philosophy 135. Effectively calculable, Turing computable, and recursive functions; Church/Turing thesis. Normal form theorem; universal functions; unsolvability and undecidability results. Recursive and recursively enumerable sets; relative recursiveness, polynomial-time computability. Arithmetical hierarchy. P/NP or letter grading.

**114L. Mathematical Logic. (4)** Lecture, three hours; discussion, one hour. Requisite: course 110A or 131A or Philosophy 135. Introduction to mathematical logic, aiming primarily at completeness and incompleteness theorems of Gödel. Propositional and predicate logic; syntax and semantics; formal deduction; completeness, compactness, and Lowenheim/Skolem theorems. Formal number theory: nonstandard models; Gödel incompleteness theorem. P/NP or letter grading.

**M114S. Introduction to Set Theory. (4)** (Same as Philosophy M134.) Lecture, three hours; discussion, one hour. Requisite: course 110A or 131A or Philosophy 135. Axiomatic set theory as framework for mathematical concepts; relations and functions, numbers, cardinality, axiom of choice, transfinite numbers. P/NP or letter grading.

**115A-115B. Linear Algebra. (5-4)** P/NP or letter grading. **115A.** Lecture, three hours; discussion, two hours. Requisite: course 33A. Techniques of proof, abstract vector spaces, linear transformations, and matrices; determinants; inner product spaces; eigenvector theory. **115B.** Lecture, three hours; discussion, one hour. Requisite: course 115A. Linear transformations, conjugate spaces, duality; theory of a single linear transformation, Jordan normal form; bilinear forms, quadratic forms; Euclidean and unitary spaces, symmetric skew and orthogonal linear transformations, polar decomposition.

**115AH. Linear Algebra (Honors). (5)** Lecture, three hours; discussion, two hours. Requisite: course 33A with grade of B or better. Honors course parallel to course 115A. P/NP or letter grading.

**116. Mathematical Cryptology. (4)** Lecture, three hours; discussion, one hour. Requisite: course 115A. Not open for credit to students with credit for Program in Computing 130. Introduction to mathematical cryptology using methods of number theory, algebra, probability. Topics include symmetric and public-key cryptosystems, one-way functions, signatures, key exchange, groups, primes, pseudoprimes, primality tests, quadratic reciprocity, factoring, rho method, RSA, discrete logs. P/NP or letter grading.

**117. Algebra for Applications. (4)** Lecture, three hours; discussion, one hour. Requisite: course 115A. Not open for credit to students with credit for course 110A. Integers, congruences; fields, applications of finite fields; polynomials; permutations, introduction to groups.

**118. Mathematical Methods of Data Theory. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 42, 115A. Introduction to computational methods for data problems with focus on linear algebra and optimization. Matrix and tensor factorization, PageRank, assorted other topics in matrices, linear programming, unconstrained optimization, constrained optimization, integer optimization, dynamic programming, and stochastic optimization. P/NP or letter grading.

## Geometry and Topology

**120A-120B. Differential Geometry. (4-4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33B, 115A, 131A. Course 120A is requisite to 120B. Curves in 3-space, Frenet formulas, surfaces in 3-space, normal curvature, Gaussian curvature, congruence of curves and surfaces, intrinsic geometry of surfaces, isometries, geodesics, Gauss/Bonnet theorem. P/NP or letter grading.

**121. Introduction to Topology. (4)** Requisite: course 131A. Metric and topological spaces, completeness, compactness, connectedness, functions, continuity, homeomorphisms, topological properties.

**123. Foundations of Geometry. (4)** Lecture, three hours; discussion, one hour. Requisite: course 115A. Axioms and models, Euclidean geometry, Hilbert axioms, neutral (absolute) geometry, hyperbolic geometry, Poincaré model, independence of parallel postulate.

## Analysis

**131A-131B. Analysis. (4-4)** Lecture, three hours; discussion, one hour. P/NP or letter grading. **131A.** Requisites: courses 32B, 33B. Recommended: course 115A. Rigorous introduction to foundations of real analysis; real numbers, point set topology in Euclidean space, functions, continuity. **131B.** Requisites: courses 33B, 115A, 131A. Derivatives, Riemann integral, sequences and series of functions, power series, Fourier series.

**131AH-131BH. Analysis (Honors). (4-4)** Lecture, three hours; discussion, one hour. Requisites for course 131AH: courses 32B and 33B, with grades of B or better. Recommended: course 115A. Honors sequence parallel to courses 131A, 131B. P/NP or letter grading.

**131C. Topics in Analysis. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 131A, 131B. Advanced topics in analysis, such as Lebesgue integral, integration on manifolds, harmonic analysis. Content varies from year to year. May be repeated for credit by petition.

**132. Complex Analysis for Applications. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33B. Introduction to basic formulas and calculation procedures of complex analysis of one variable relevant to applications. Topics include Cauchy/Riemann equations, Cauchy integral formula, power series expansion, contour integrals, residue calculus.

**132H. Complex Analysis (Honors). (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33B, and 131A, with grades of B or better. Specifically designed for students who have strong commitment to pursue graduate studies in mathematics. Introduction to complex analysis, with more emphasis on proofs. Honors course parallel to course 132. P/NP or letter grading.

**133. Introduction to Fourier Analysis. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 33A, 33B, 131A. Fourier series, Fourier transform in one and several variables, finite Fourier transform. Applications, in particular, to solving differential equations. Fourier inversion formula, Plancherel theorem, convergence of Fourier series, convolution. P/NP or letter grading.

**134. Linear and Nonlinear Systems of Differential Equations. (4)** Lecture, three hours; discussion, one hour. Requisite: course 33B. Dynamical systems analysis of nonlinear systems of differential equations. One- and two-dimensional flows. Fixed points, limit cycles, and stability analysis. Bifurcations and normal forms. Elementary geometrical and topological results. Applications to problems in biology, chemistry, physics, and other fields. P/NP or letter grading.



**135. Ordinary Differential Equations. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 33A, 33B. Selected topics in differential equations. Laplace transforms, existence and uniqueness theorems, Fourier series, separation of variable solutions to partial differential equations, Sturm/Liouville theory, calculus of variations, two-point boundary value problems, Green's functions. P/NP or letter grading.

**136. Partial Differential Equations. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 33A, 33B. Linear partial differential equations, boundary and initial value problems; wave equation, heat equation, and Laplace equation; separation of variables, eigenfunction expansions; selected topics, as method of characteristics for nonlinear equations.

## Applied Mathematics

**142. Mathematical Modeling. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33B. Introduction to fundamental principles and spirit of applied mathematics. Emphasis on manner in which mathematical models are constructed for physical problems. Illustrations from many fields of endeavor, such as physical sciences, biology, economics, and traffic dynamics.

**146. Methods of Applied Mathematics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33B. Integral equations, Green's function, and calculus of variations. Selected applications from control theory, optics, dynamical systems, and other engineering problems.

**M148. Experience of Data Science. (4)** (Same as Statistics M148.) Lecture, four hours. Requisites: courses 118, 131A, 156 or Statistics 101C, 170S or Statistics 100B, Statistics 101A. Students solve real data science problems for community- or campus-based clients. Students work in small groups with faculty member and client to frame client's question in data science terms, create mathematical models, analyze data, and report results. Students may elect to undertake research on foundations of data science, studying advanced topics and writing senior thesis with discussion of findings or survey of literature on chosen foundational topic. Development of collaborative skills, communication principles, and discussion of ethical issues. Letter grading.

**151A-151B. Applied Numerical Methods. (4-4)** Lecture, three hours; discussion, one hour. Introduction to numerical methods with emphasis on algorithms, analysis of algorithms, and computer implementation issues. Letter grading. **151A.** Requisites: courses 32B, 33B, 115A, Program in Computing 10A or Computer Science 31. Solution of nonlinear equations. Numerical differentiation, integration, and interpolation. Direct methods for solving linear systems. **151B.** Requisite: course 151A. Numerical solution of differential equations. Approximation theory, iterative solutions of linear equations, solution of nonlinear systems, two-point boundary value problems, optimization.

**151AH. Numerical Analysis Part 1 (Honors). (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33B, 115A, 131A, Computer Science 31 or Programming in Computing 10A or equivalent, with grades of B or better. Not open for credit to students with credit for course 151A. Rigorous introduction to numerical algorithms including necessary skills to apply algorithms in statistics, imaging, data science, engineering, and related fields. Root finding, solving linear systems, interpolation, quadrature, and finding eigenvalues. MATLAB programming. P/NP or letter grading.

**151BH. Numerical Analysis Part 2 (Honors). (4)** Lecture, three hours; discussion, one hour. Requisites: courses 115A or 115AH, 131A or 131AH, 151A or 151AH, Computer Science 31 or Programming in Computing 10A, with grades of B or better. Rigorous introduction to numerical algorithms including necessary skills to apply algorithms in statistics, imaging, data science, engineering and related fields. Finding eigenvalues, finding numerical solutions to ordinary differential equations, the least squares problem and the fast Fourier transform. MATLAB programming. Honors course parallel to course 151B. P/NP or letter grading.

**155. Mathematical Imaging. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33B, 115A, Program in Computing 10A or Computer Science 31. Imaging geometry. Image transforms. Enhancement, restoration, and segmentation. Descriptors. Morphology. P/NP or letter grading.

**156. Machine Learning. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 115A, 164, 170A or 170E or Statistics 100A, and Computer Science 31 or Program in Computing 10A. Strongly recommended requisite: Program in Computing 16A or Statistics 21. Introductory course on mathematical models for pattern recognition and machine learning. Topics include parametric and nonparametric probability distributions, curse of dimensionality, correlation analysis and dimensionality reduction, and concepts of decision theory. Advanced machine learning and pattern recognition problems, including data classification and clustering, regression, kernel methods, artificial neural networks, hidden Markov models, and Markov random fields. Projects in MATLAB to be part of final project presented in class. P/NP or letter grading.

**164. Optimization. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 115A, 131A. Not open for credit to students with credit for former Electrical Engineering 136. Fundamentals of optimization. Linear programming: basic solutions, simplex method, duality theory. Unconstrained optimization, Newton method for minimization. Nonlinear programming, optimality conditions for constrained problems. Additional topics from linear and nonlinear programming. P/NP or letter grading.

**167. Mathematical Game Theory. (4)** Lecture, three hours; discussion, one hour. Requisite: course 115A. Quantitative modeling of strategic interaction. Topics include extensive and normal form games, background probability, lotteries, mixed strategies, pure and mixed Nash equilibria and refinements, bargaining; emphasis on economic examples. Optional topics include repeated games and evolutionary game theory. P/NP or letter grading.

**168. Introduction to Networks. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 115A, 170E (or 170A or Electrical and Computer Engineering 131A or Statistics 100A). Introduction to network science (including theory, computation, and applications), which can be used to study complex systems of interacting agents. Study of networks in technology, social, information, biological, and mathematics involving basic structural features of networks, generative models of networks, network summary statistics, centrality, random graphs, clustering, and dynamical processes on networks. Introduction to advanced topics as time permits. P/NP or letter grading.

## Probability

**170A. Probability Theory I. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 33A, 131A. Not open to students with credit for course 170E, Electrical and Computer Engineering 131A, or Statistics 100A. Rigorous presentation of probability theory based on real analysis. Probability space, probability and conditional probability, independence, Bayes' rule, discrete and continuous random variables and their distributions, expectation, moments and variance, conditional distribution and expectation, weak law of large numbers. P/NP or letter grading.

**170B. Probability Theory II. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 131A, 170A. Continuation of rigorous presentation of probability theory based on real analysis. Moments and generating functions; laws of large numbers, central limit theorem, and convergence in distribution; branching processes; random walks; Poisson and other random processes in continuous time. Advance topics in probability theory. P/NP or letter grading.

**170E. Introduction to Probability and Statistics 1: Probability. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B. Not open to students with credit for course 170A, Electrical and Computer Engineering 131A, or Statistics 100A. Introduction to probability theory with emphasis on topics relevant to applications. Topics include discrete (binomial, Poisson, etc.) and continuous (exponential, gamma,

chi-square, normal) distributions, bivariate distributions, distributions of functions of random variables (including moment generating functions and central limit theorem). P/NP or letter grading.

**170S. Introduction to Probability and Statistics 2: Statistics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B, and 170A or 170E or Statistics 100A. Not open to students with credit for Statistics 100B. Introduction to statistics. Topics include sampling, estimation (maximum likelihood and Bayesian), properties of estimators, regression, confidence intervals, hypotheses testing, analysis of variance. P/NP or letter grading.

**171. Stochastic Processes. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 33A, 170E (or 170A or Statistics 100A). Discrete Markov chains, continuous-time Markov chains, renewal theory. P/NP or letter grading.

**174E. Mathematics of Finance for Mathematics/Economics Students. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 33A, and 170A or 170E or Statistics 100A. Not open for credit to students with credit for course 174A, Economics 141, or Statistics C183/C283. Mathematical modeling of financial securities in discrete and continuous time. Forwards, futures, hedging, swaps, uses and pricing (tree models and Black-Scholes) of European and American options, Greeks and numerical methods. P/NP or letter grading.

**177. Theory of Interest and Applications. (4)** Lecture, three hours; discussion, one hour. Requisite: course 32B. Types of interest, time value of money, annuities and similar contracts, loans, bonds, portfolios and general cash flows, rate of return, term structure of interest rates, duration, convexity and immunization, interest rate swaps, financial derivatives, forwards, futures, and options. Letter grading.

**178A. Foundations of Actuarial Mathematics: Life Insurance and Annuities. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 32B, 170A or 170E (or Statistics 100A), 175 or 177. Introduction to mathematics associated with long-term insurance coverages. Single- and multiple-life survival models, annuities, premium calculations and policy values, reserves, pension plans and retirement benefits. Letter grading.

**178B. Foundations of Actuarial Mathematics: Additional Topics in Long-Term Actuarial Mathematics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 170B or 170S (or Statistics 100B), 178A. Multistate models, covers pensions, health insurances, and profit-testing. Study of probability distributions employed most commonly in actuarial theory. Beginning study of short-term actuarial mathematics. Letter grading.

**178C. Foundations of Actuarial Mathematics: Loss Models. (4)** Lecture, three hours; discussion, one hour. Requisite: course 178B. Study of loss models associated with actuarial problems. Covers severity, frequency, and aggregate loss models, parameter estimation (frequentist, Bayesian), model selection, and credibility. Letter grading.

**179. Advanced Topic in Financial Mathematics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 174E. Continuation of course 174E. In-depth study of risk measures and instruments of risk management in investment portfolios and corporate financial structure. Exotic and real options, value at risk, mean-variance analysis, portfolio optimization, risk analysis, capital asset pricing model, market efficiency, and Modigliani-Miller theory. P/NP or letter grading.

## Discrete Mathematics

**180. Graph Theory. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B, 61. Strongly recommended preparation: course 115A. Designed for computer science and engineering students. Graphs and trees. Planarity, graph colorings. Set systems. Ramsey theory. Random graphs. Linear algebra methods. P/NP or letter grading.

**182. Algorithms. (4)** Lecture, three hours; discussion, one hour. Requisite: course 3C or 32A, and 61. Not open for credit to students with credit for Computer

Science 180. Graphs, greedy algorithms, divide and conquer algorithms, dynamic programming, network flow. Emphasis on designing efficient algorithms useful in diverse areas such as bioinformatics and allocation of resources. P/NP or letter grading.

**184. Enumerative Combinatorics. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 31A, 31B, 61, 115A. Designed for mathematics and physics students. Permutations and combinations, counting principles, recurrence relations, and generating functions. Application to asymptotic and probabilistic enumeration. P/NP or letter grading.

## Special Studies

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190A-190O. Seminars: Current Literature. (1 each)** Seminar, one hour. Designed for undergraduate students. Readings and presentations of papers in mathematical literature under supervision of staff member. One-hour presentation required. P/NP grading: **190A.** History and Development of Mathematics. **190B.** Number Theory. **190C.** Algebra. **190D.** Logic. **190E.** Geometry. **190F.** Topology. **190G.** Analysis. **190H.** Differential Equations. **190I.** Functional Analysis. **190J.** Applied Mathematics. **190K.** Probability. **190L.** Dynamical Systems. **190M.** Mathematics. **190N.** Combinatorics. **190O.** Cryptography.

**191. Variable Topics Research Seminars: Mathematics. (4)** Seminar, three hours. Variable topics research course in mathematics that covers material not covered in regular mathematics upper-division curriculum. Reading, discussion, and development of culminating project. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

**191H. Honors Research Seminars: Mathematics. (4)** Seminar, three hours. Participating seminar on advanced topics in mathematics. Content varies from year to year. May be repeated for credit by petition. P/NP or letter grading.

**M192A. Introduction to Collaborative Learning Theory and Practice. (1)** (Formerly numbered 192A.) (Same as Atmospheric and Oceanic Sciences M192A, Chemistry M192E, Computer Science M192A, Life Sciences M192A, and Physics M192S.) Seminar, one hour. Training seminar for undergraduate students

who are selected for learning assistant (LA) program. Exploration of current topics in pedagogy and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. Letter grading.

**195. Community Internships in Mathematics Education. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Internship to be supervised by Center for Community Learning and Mathematics Department. Students meet on regular basis with instructor, provide periodic reports of their experience, have assigned readings on mathematics education, and complete final paper. May not be repeated and may not be applied toward major requirements. Individual contract with supervising faculty member required. P/NP grading.

**192B. Collaborative Learning Theory and Practice. (2 to 4)** Seminar, two to four hours. Requisite: course M192A (may be taken concurrently). Limited to students serving as learning assistants. Further exploration of current topics in pedagogy and education research focused on methods of learning in small groups and their practical application to supervise learning in UCLA mathematics courses. With instructor's guidance, students apply pedagogical principles based on current education research, assist with development of innovative instructional materials, and receive and generate frequent feedback on their activities. May be repeated three times for credit. May not be used to fulfill elective requirement for any mathematics major. Letter grading.

**197. Individual Studies in Mathematics. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. At discretion of chair and subject to availability of staff, individual intensive study of topics suitable for undergraduate course credit but not specifically offered as separate courses. Scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for maximum of 12 units, but no more than one 197 or 199 course may be applied toward upper-division courses required for majors offered by Mathematics Department. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Mathematics. (2 or 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Scheduled meetings to be arranged between faculty member and student. Culminating report required. May be repeated for maximum of 12 units, but no more than one 197 or 199 course may be applied toward upper-division courses required for majors offered by Mathematics Department. Individual contract required. P/NP or letter grading.

## Graduate Courses

### Teacher Preparation

**201A-201B-201C. Topics in Algebra and Analysis. (4-4-4)** Preparation: bachelor's degree in mathematics. Designed for mathematics/education program students. Important ideas of algebra, geometry, and calculus leading effectively from elementary to modern mathematics. Approaches to number system, point sets, geometric interpretations of algebra and analysis, integration, differentiation, series and analytic functions. May not be applied toward MA degree requirements.

**202A-202B. Mathematical Models and Applications. (4-4)** Preparation: bachelor's degree in mathematics. Designed for mathematics/education program students. Development of mathematical theories describing various empirical situations. Basic characterizing postulates; development of a logical structure of theorems. Modern topics such as operations research, linear programming, game theory, learning models, models in social and life sciences. May not be applied toward MA degree requirements.

**203. Master's Linear Algebra. (4)** Lecture, four hours; discussion, one hour. Rigorous treatment of fundamental results of pure and applied linear algebra over fields. Applications to contemporary research. Preparation for linear algebra portion of UCLA Mathematics Basic Examination that is required of MA and PhD students. S/U or letter grading.

**204. Master's Analysis. (4)** Lecture, four hours; discussion, one hour. Rigorous treatment of fundamental results of analysis. Applications to contemporary research. Preparation for analysis portion of UCLA Mathematics Basic Examination that is required of MA and PhD students. S/U or letter grading.

## Number Theory

**205A-205B-205C. Number Theory. (4-4-4)** Lecture, three hours. Requisites: courses 210A, 246A. Algebraic number theory, including ideal theory, valuations, local fields, cyclotomic fields. Introduction to class-field theory, analytic number theory, L-functions and class number formulas, and modular forms. S/U or letter grading.

**206A-206B. Combinatorial Theory. (4-4)** Generating functions. Probabilistic methods. Polya theorem. Enumerative graph theory. Partition theory. Number theoretical applications. Structure of graphs, matching theory, duality theorems. Packings, pavings, coverings, statistical designs, difference sets, triple systems, finite planes. Configurations, polyhedra. Ramsey theory, finite and transfinite, and applications.

**207A-207B-207C. Topics in Number Theory. (4-4-4)** Lecture, three hours. Adelic analysis on  $GL(1)$  and  $GL(2)$ , especially Tate thesis and Hecke theory, automorphic representations. Special values of L-functions and p-adic L-functions, arithmetic theory of modular forms, advanced topics in analytic number theory. Arithmetic geometry, especially of modular curves. S/U or letter grading.

**M208A-M208B. Topics in Applied Number Theory. (4-4)** (Same as Computer Science M283A-M283B.) Lecture, three hours. Basic number theory, including congruences and prime numbers. Cryptography: public-key and discrete log cryptosystems. Attacks on cryptosystems. Primality testing and factorization methods. Elliptic curve methods. Topics from coding theory: Hamming codes, cyclic codes, Gilbert/Varshamov bounds, Shannon theorem. S/U or letter grading.

**M209A. Cryptography. (4)** (Same as Computer Science M282A.) Lecture, four hours; outside study, eight hours. Introduction to theory of cryptography, stressing rigorous definitions and proofs of security. Topics include notions of hardness, one-way functions, hard-core bits, pseudorandom generators, pseudorandom functions and pseudorandom permutations, semantic security, public-key and private-key encryption, secret-sharing, message authentication, digital signatures, interactive proofs, zero-knowledge proofs, collision-resistant hash functions, commitment protocols, key-agreement, contract signing, and two-party secure computation with static security. Letter grading.

**M209B. Cryptographic Protocols. (4)** (Same as Computer Science M282B.) Lecture, four hours. Requisite: course M209A. Consideration of advanced cryptographic protocol design and analysis. Topics include noninteractive zero-knowledge proofs; zero-knowledge arguments; concurrent and non-black-box zero-knowledge;  $IP=PSPACE$  proof, stronger notions of security for public-key encryption, including chosen-ciphertext security; secure multiparty computation; dealing with dynamic adversary; nonmalleability and composability of secure protocols; software protection; threshold cryptography; identity-based cryptography; private information retrieval; protection against man-in-middle attacks; voting protocols; identification protocols; digital cash schemes; lower bounds on use of cryptographic primitives, software obfuscation. May be repeated for credit with topic change. Letter grading.

## Algebra

**210A-210B-210C. Algebra. (4-4-4)** Requisites: courses 110A, 110B, 110C. Students with credit for courses 110B and/or 110C cannot receive MA degree credit for courses 210B and/or 210C. Group theory, including theorems of Sylow and Jordan/Holder/Schreier; rings and ideals, factorization theory in integral domains, modules over principal ideal rings, Galois theory of fields, multilinear algebra, structure of algebras.

**211. Structure of Rings. (4)** Requisite: course 210A. Radical, irreducible modules and primitive rings, rings and algebras with minimum condition.

**212A. Homological Algebra. (4)** Lecture, three hours. Enforced requisite: course 210A. Modules over rings, homomorphisms and tensor products of modules, functors and derived functors, homological dimension of rings and modules. S/U or letter grading.

**212B. Homological Algebra. (4)** Lecture, three hours. Requisites: courses 210A, 210B, 210C, 212A. Advanced topics in modern homological algebra, such as triangulated categories, differential graded algebras as dg-categories, tilting theory and applications of group cohomology to representation theory, stable categories and modular representation theory, and other current topics. S/U or letter grading.

**213A-213B. Theory of Groups. (4-4)** Requisite: course 210A. Topics include representation theory, transfer theory, infinite Abelian groups, free products and presentations of groups, solvable and nilpotent groups, classical groups, algebraic groups.

**214A. Introduction to Algebraic Geometry. (4)** Lecture, three hours. Requisite: course 215A (or 210A, 210B, and 210C with consent of instructor). Affine and projective varieties. Irreducibility, dimension, singular and smooth points. Rational maps, curves, intersections in projective space. Schemes. Proper and finite morphisms. Coherent and quasi-coherent sheaves. Divisors, line bundles, ampleness. S/U or letter grading.

**214B. Introduction to Algebraic Geometry. (4)** Lecture, three hours. Requisite: course 214A. Cohomology of coherent sheaves. Flat morphisms, smooth morphisms. Riemann-Roch theorem for curves. Projective embeddings of curves, elliptic curves, canonical embedding. Introduction to birational geometry in higher dimensions. S/U or letter grading.

**215A-215B. Commutative Algebra. (4-4)** Requisite: course 210A. Topics from commutative ring theory, including techniques of localization, prime ideal structure in commutative Noetherian rings, principal ideal theorem, Dedekind rings, modules, projective modules, Serre conjecture, regular local rings.

**216A-216B-216C. Further Topics in Algebra. (4-4-4)** Lecture, three hours. Requisites: courses 210A, 210B, 210C. Closer examination of areas of current research in algebra, including algebraic geometry and K-theory. Variable content may include Abelian varieties, invariant theory, Hodge theory, geometry over finite fields, K-theory, homotopical algebra, and derived algebraic geometry. May be repeated for credit by petition. S/U or letter grading.

**M217. Geometry and Physics. (4)** (Same as Physics M236.) Lecture, three hours. Interdisciplinary course on topics at interface between physics quantum fields and superstrings and mathematics of differential and algebraic geometry. Topics include supersymmetry, Seiberg/Witten theory, conformal field theory, Calabi/Yau manifolds, mirror symmetry and duality, integrable systems. S/U grading.

**218A. Discrete Mathematics: Probabilistic Methods. (4)** Lecture, three hours. Linearity of expectation, second moment method, local lemma, correlation inequalities, martingales, large deviation inequalities, Janson and Talagrand inequalities, and pseudo-randomness. S/U or letter grading.

**218B. Discrete Mathematics: Algebraic Methods. (4)** Lecture, three hours. Basic dimension arguments, spaces of polynomials and tensor product methods, eigenvalues of graphs and their application, combinatorial Nullstellensatz and Chevalley/Waring theorem. Counterexample to Borsuk conjecture, chromatic

number of unit distance graph of Euclidean space, explicit constructions of Ramsey graphs, other topics. S/U or letter grading.

**218C. Topics in Discrete Mathematics. (4)** Lecture, three hours. Examination of variety of methods, approaches, and techniques that were developed in last 30 years in discrete mathematics. Topics may include extremal problems for graphs and set systems, Ramsey theory, additive number theory combinatorial geometry, topological methods in combinatorics, entropy and other tools from information theory, discrete harmonic analysis and its applications to combinatorics and theoretical computer science. Topics vary from year to year. May be repeated for credit with consent of instructor. S/U or letter grading.

## Logic and Foundations

**220A-220B-220C. Mathematical Logic. (4-4-4)** Lecture, three hours. Requisite: course M114S. Fundamental methods and results in mathematical logic, using mathematical methods to reason about existence or nonexistence of proofs and computations in many different settings. Topics include compactness theorem, saturation of models, completeness and incompleteness theorems of Gödel, Turing computability and degrees of unsolvability, recursion in Baire space, Zermelo/Fraenkel axioms, universe of constructible sets, and related equiconsistency results in set theory. S/U or letter grading.

**222A-222B. Lattice Theory and Algebraic Systems. (4-4)** Lecture, three hours. Requisite: course 210A. Partially ordered sets, lattices, distributivity, modularity; completeness, interaction with combinatorics, topology, and logic; algebraic systems, congruence lattices, subdirect decomposition, congruence laws, equational bases, applications to lattices.

**223C. Topics in Computability Theory. (4)** Lecture, three hours. Requisites: courses 220A, 220B. Degrees of unsolvability, recursively enumerable sets, undecidable theories; inductive definitions, admissible sets and ordinals; recursion in higher types; recursion and complexity. Topics vary from year to year. May be repeated for credit with consent of instructor. S/U or letter grading.

**223D. Topics in Descriptive Set Theory. (4)** Lecture, three hours. Requisites: courses 220A, 220B. Classical and effective results on Borel and projective sets; infinite games of perfect information and principle of determinacy; consequences of determinacy, including periodicity, structure theory of pointclasses, and partition properties. Topics vary from year to year. May be repeated for credit with consent of instructor. S/U or letter grading.

**223M. Topics in Model Theory. (4)** Lecture, three hours. Requisites: courses 220A, 220B. Ultraproducts, preservation theorems, interpolation theorems, saturated models, omitting types, categoricity, two cardinal theorems, enriched languages, soft model theory, and applied model theory. Topics vary from year to year. May be repeated for credit with consent of instructor. S/U or letter grading.

**223S. Topics in Set Theory. (4)** Lecture, three hours. Requisites: courses 220A, 220B, 220C. Forcing and independence results, including independence of continuum hypothesis and independence of axiom of choice; inner model theory; large cardinals; proofs of determinacy; combinatorial set theory. Topics vary from year to year. May be repeated for credit with consent of instructor. S/U or letter grading.

## Geometry and Topology

**225A. Differential Topology. (4)** Lecture, three hours; discussion, one hour. Manifolds, tangent vectors, smooth maps, tangent bundles and vector bundles in general, vector fields and integral curves, Sard theorem on measure of critical values, embedding theorem, transversality, degree theory, Lefschetz fixed-point theorem, Euler characteristic, Ehresmann theorem that proper submersions are locally trivial fibrations. S/U or letter grading.

**225B. Differential Geometry. (4)** Lecture, three hours; discussion, one hour. Lie derivatives, integrable distributions and Frobenius theorem, differential forms, integration and Stokes theorem, de Rham cohomology,

including Mayer/Vietoris sequence, Poincaré duality, Thom classes, degree theory and Euler characteristic revisited from viewpoint of de Rham cohomology, Riemannian metrics, gradients, volume forms, and interpretation of classical integral theorems as aspects of Stokes theorem for differential forms. S/U or letter grading.

**225C. Algebraic Topology. (4)** Lecture, three hours; discussion, one hour. Basic concepts of homotopy theory, fundamental group and covering spaces, singular homology and cohomology theory, axioms of homology theory, Mayer/Vietoris sequence, calculation of homology and cohomology of standard spaces, cell complexes and cellular homology, de Rham theorem on isomorphism of de Rham differential-form cohomology and singular cohomology with real coefficients. S/U or letter grading.

**226A-226B-226C. Differential Geometry. (4-4-4)** Lecture, three hours. Requisite: course 225A. Manifold theory; connections, curvature, torsion, and parallelism. Riemannian manifolds; completeness, submanifolds, constant curvature. Geodesics; conjugate points, variational methods, Myers theorem, nonpositive curvature. Further topics such as pinched manifolds, integral geometry, Kahler manifolds, symmetric spaces.

**227A-227B. Algebraic Topology. (4-4)** Lecture, three hours. Requisite: course 225B. CW complexes, fiber bundles, homotopy theory, cohomology theory, spectral sequences.

**229A-229B-229C. Lie Groups and Lie Algebras. (4-4-4)** Preparation: knowledge of basic theory of topological groups and differentiable manifolds. Lie groups, Lie algebras, subgroups, subalgebras. Exponential map. Universal enveloping algebra. Campbell/Hausdorff formula. Nilpotent and solvable Lie algebras. Cohomology of Lie algebras. Theorems of Weyl, Levi-Mal'cev. Semi-simple Lie algebras. Classification of simple Lie algebras. Representations. Compact groups. Weyl character formula.

**233. Partial Differential Equations on Manifolds. (4)** Lecture, three hours. Requisites: courses 226A, 251A. Topics may include Laplacian operator on a Riemannian manifold, eigenvalues, Atiyah/Singer index theorem, isoperimetric inequalities, elliptic estimates, harmonic functions, function theory on manifolds, Green's function, heat equation, minimal hypersurfaces, prescribed curvature equations, harmonic maps, Yang/Mills equation, Monge/Ampere equations.

**234. Topics in Differential Geometry. (4)** Lecture, three hours. Requisites: courses 226A, 226B. Complex and Kahler geometry, Hodge theory, homogeneous manifolds and symmetric spaces, finiteness and convergence theorems for Riemannian manifolds, almost flat manifolds, closed geodesics, manifolds of positive scalar curvature, manifolds of constant curvature. Topics vary from year to year. May be repeated for credit by petition.

**235. Topics in Manifold Theory. (4)** Lecture, three hours. Requisites: courses 225A, 225B. Emphasis on low-dimensional manifolds. Structure and classification of manifolds, automorphisms of manifolds, submanifolds (e.g., knots and links). Topics vary from year to year. May be repeated for credit by petition.

**236. Topics in Geometric Topology. (4)** Lecture, three hours. Requisites: courses 225A, 225B. Decomposition spaces, surgery theory, group actions, dimension theory, infinite dimensional topology. Topics vary from year to year. May be repeated for credit by petition.

**237. Topics in Algebraic Topology. (4)** Lecture, three hours. Requisites: courses 227A, 227B. Fixed-point theory, fiber spaces and classifying spaces, characteristic classes, generalized homology and cohomology theories. Topics vary from year to year. May be repeated for credit by petition.

**238A-238B. Dynamical Systems. (4-4)** Lecture, three hours. Recommended preparation: first-year analysis courses. Topics include qualitative theory of differential equations, bifurcation theory, and Hamiltonian systems; differential dynamics, including hyperbolic theory and quasiperiodic dynamics; ergodic theory; low-dimensional dynamics. S/U or letter grading.

## Analysis and Differential Equations

**240. Methods of Set Theory. (4)** Lecture, three hours. Requisites: courses 110A, 110B, 121, 131A, 131B. Naive, axiomatic set theory, axiom of choice and its equivalents, well-orderings, transfinite induction, ordinal and cardinal arithmetic. Applications to algebra: Hamel bases, Stone representation theorem. Applications to analysis and topology: Cantor/Bendixson theorem, counterexamples in measure theory, Borel and analytic sets, Choquet theorem.

**245A-245B-245C. Real Analysis. (4-4-4)** Lecture, three hours. Requisites: courses 121, 131A, 131B. Basic measure theory. Measure theory on locally compact spaces. Fubini theorem. Elementary aspects of Banach and Hilbert spaces and linear operators. Function spaces. Radon/Nikodym theorem. Fourier transform and Plancherel on  $\mathbb{R}^n$  and  $\mathbb{T}^n$ .

**246A-246B-246C. Complex Analysis. (4-4-4)** Requisites: courses 131A, 131B. Students with credit for course 132 cannot receive MA degree credit for course 246A. Cauchy/Riemann equations. Cauchy theorem. Cauchy integral formula and residue calculus. Power series. Normal families. Harmonic functions. Linear fractional transformations. Conformal mappings. Analytic continuation. Examples of Riemann surfaces. Infinite products. Partial fractions. Classical transcendental functions. Elliptic functions.

**247A-247B. Classical Fourier Analysis. (4-4)** Lecture, three hours. Requisites: courses 245A, 245B, 246A. Distribution on  $\mathbb{R}^n$  and  $\mathbb{T}^n$ . Principal values; other examples. Distributions with submanifolds as supports. Kernel theorem. Convolution; examples of singular integrals. Tempered distributions and Fourier transform theory on  $\mathbb{R}^n$ . Distributions with compact or one-sided supports and their complex Fourier transforms.

**250A. Ordinary Differential Equations. (4)** Requisite: course 246A. Basic theory of ordinary differential equations. Existence and uniqueness of solutions. Continuity with respect to initial conditions and parameters. Linear systems and nth order equations. Analytic systems with isolated singularities. Self-adjoint boundary value problems on finite intervals.

**250B. Nonlinear Ordinary Differential Equations. (4)** Requisite: course 250A. Asymptotic behavior of nonlinear systems. Stability. Existence of periodic solutions. Perturbation theory of two-dimensional real autonomous systems. Poincaré/Bendixson theory.

**250C. Advanced Topics in Ordinary Differential Equations. (4)** Requisites: courses 250A, 250B. Selected topics, such as spectral theory or ordinary differential operators, nonlinear boundary value problems, celestial mechanics, approximation of solutions, and Volterra equations.

**251A. Introductory Partial Differential Equations. (4)** Classical theory of heat, wave, and potential equations; fundamental solutions, characteristics and Huygens principle, properties of harmonic functions. Classification of second-order differential operators. Maximum principles, energy methods, uniqueness theorems. Additional topics as time permits.

**251B-251C. Topics in Partial Differential Equations. (4-4)** In-depth introduction to topics of current interest in partial differential equations or their applications.

**252A-252B. Topics in Complex Analysis. (4-4)** Lecture, three hours. Requisites: courses 245A, 245B, 245C, 246A, 246B, 246C. Potential theory, subharmonic functions, harmonic measure; Hardy spaces; entire functions; univalent functions; Riemann surfaces; extremal length, variational methods, quasiconformal mappings. Topics vary from year to year. S/U or letter grading.

**253A-253B. Several Complex Variables. (4-4)** Requisites: courses 245A, 245B, 245C, 246A, 246B, 246C. Introduction to analytic functions of several complex variables. The  $\bar{\partial}$ -problem, Cousin problems, domains of holomorphy, complex manifolds.

**254A-254B. Topics in Real Analysis. (4-4)** Requisites: courses 245A, 245B, 245C, 246A, 246B, 246C. Selected topics in analysis and its applications to geometry and differential equations. Topics may vary from year to year. May be repeated for credit by petition.

## Functional Analysis

**255A. Functional Analysis. (4)** Requisites: courses 245A and 245B, or 265A and 265B, and 246A. Banach spaces, basic principles. Weak topologies. Compact operators. Fredholm operators. Special spaces including Hilbert spaces and  $C(X)$ .

**255B-255C. Topics in Functional Analysis. (4-4)** Requisite: course 255A. Topics include Banach algebras, operators on Banach spaces and Hilbert space, semigroups of operators, linear topological vector spaces, and other related areas.

**256A-256B. Topological Groups and Their Representations. (4-4)** Lecture, three hours. Requisite: course 255A. Topological groups and their basic properties. Haar measure. Compact groups and their representations. Duality and Fourier analysis on locally compact abelian groups. Induced representations, Frobenius reciprocity. Representations of special groups (Lorentz, Galilean, etc.). Projective representations. Representations of totally disconnected groups. S/U or letter grading.

**259A-259B. Operator Algebras in Hilbert Space. (4-4)** Requisites: courses 255A, 255B, 255C. Selected topics from theories of  $C^*$  and von Neumann algebras. Applications.

## Applied Mathematics

**260. Introduction to Applied Mathematics. (4)** Requisite: course 142. Construction, analysis, and interpretation of mathematical models of problems which arise outside of mathematics.

**261. Game Theory. (4)** Lecture, three hours. Designed for graduate mathematics students. Bargaining theory, core, value, other solution concepts. Applications to oligopoly, general exchange and production economies, and allocation of joint costs. S/U or letter grading.

**264. Applied Complex Analysis. (4)** Requisite: course 246A. Topics include contour integration conformal mapping, differential equations in complex plane, special functions, asymptotic series, Fourier and Laplace transforms, singular integral equations.

**265A-265B. Real Analysis for Applications. (4-4)** Requisites: courses 131A, 131B. Not open for credit to students with credit for courses 245A, 245B, 245C. Lebesgue measure and integration on real line, absolutely continuous functions, functions of bounded variation,  $L^2$ - and  $L^p$ -spaces. Fourier series. General measure and integrations, Fubini and Radon/Nikodym theorems, representation of functionals, Fourier integrals.

**266A. Applied Ordinary Differential Equations. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 131A, 131B, 132, and 134 and 135, or 146. Spectral theory of regular boundary value problems and examples of singular Sturm/Liouville problems, related integral equations, phase/plane analysis of nonlinear equations. S/U or letter grading.

**266B-266C. Applied Partial Differential Equations. (4-4)** Requisite: course 266A. Classification of equations, classical potential theory, Dirichlet and Neumann problems. Green's functions, spectral theory of Laplace equation in bounded domains, first-order equations, wave equations, Cauchy problem, energy conservation, heat equation, fundamental solution, equations of fluid mechanics and magnetohydrodynamics.

**266D-266E. Applied Differential Equations. (4-4)** Requisites: courses 266A, 266B, 266C. Advanced topics in linear and nonlinear partial differential equations, with emphasis on energy estimates, numerical methods, and applications to fluid mechanics. Additional topics include dispersive waves, systems with multiple time scales, and applications to fluid mechanics.

**M268A. Functional Analysis for Applied Mathematics and Engineering. (4)** (Same as Electrical and Computer Engineering M208B.) Lecture, four hours. Requisites: courses 115A and 115B (or Electrical and Computer Engineering 208A), 131A, 131B, 132. Topics may include  $L^p$  spaces, Hilbert, Banach, and separable spaces; Fourier transforms; linear functionals. Riesz representation theory, linear operators and their adjoints; self-adjoint and compact operators. Spectral

theory. Differential operators such as Laplacian and eigenvalue problems. Resolvent distributions and Green's functions. Semigroups. Applications. S/U or letter grading.

**M268B. Topics in Functional Analysis for Applied Mathematics and Engineering. (4)** (Same as Electrical Engineering M208C.) Lecture, four hours. Requisite: course M268A. Semigroups of linear operators over Hilbert spaces; generator and resolvent, generation theorems, Laplace inversion formula. Dissipative operators and contraction semigroups. Analytic semigroups and spectral representation. Semigroups with compact resolvents. Parabolic and hyperbolic systems. Controllability and stabilizability. Spectral theory of differential operators, PDEs, generalized functions. S/U or letter grading.

**268C. Topics in Applied Functional Analysis. (4)** Requisite: course 255A. Topics include spectral theory with applications to ordinary differential operators, eigenvalue problems for differential equations, generalized functions, and partial differential equations. S/U or letter grading.

**269A-269B-269C. Advanced Numerical Analysis. (4-4-4)** Lecture, three hours; discussion, one hour. Requisites: courses 115A, 151A, 151B. Numerical solution for systems of ordinary differential equations; initial and boundary value problems. Numerical solution for elliptic, parabolic, and hyperbolic partial differential equations. Topics in computational linear algebra. S/U or letter grading.

**270A. Mathematical Aspects of Scientific Computing: Techniques of Scientific Computing. (4)** Lecture, three hours. Requisites: courses 115A, 151A, 151B, Program in Computing 10A. Mathematical modeling for computer applications, scientific programming languages, software development, graphics, implementation of numerical algorithms on different architectures, case studies. S/U or letter grading.

**270B. Mathematical Aspects of Scientific Computing: Computational Linear Algebra. (4)** Lecture, three hours. Requisites: courses 115A, 151A, 151B, Program in Computing 10A. Direct, fast, and iterative algorithms, overdetermined systems; singular value decomposition, regularization, sparse systems, algebraic eigenvalue problem. S/U or letter grading.

**270C. Mathematical Aspects of Scientific Computing: Computational Linear Algebra. (4)** Lecture, three hours. Requisites: courses 115A, 151A, 151B, Program in Computing 10A. Direct, fast, and iterative algorithms, overdetermined systems; singular value decomposition, regularization, sparse systems, algebraic eigenvalue problem. S/U or letter grading.

**270D. Mathematical Aspects of Scientific Computing: Computational Fluid Dynamics. (4)** Lecture, three hours. Requisites: courses 115A, 151A, 151B, Program in Computing 10A. Basic equations, finite difference, finite element, pseudo-spectral, and vortex methods; stability, accuracy, shock capturing, and boundary approximations. S/U or letter grading.

**270E. Mathematical Aspects of Scientific Computing: Computational Fluid Dynamics. (4)** Lecture, three hours. Requisites: courses 115A, 151A, 151B, Program in Computing 10A. Basic equations, finite difference, finite element, pseudo-spectral, and vortex methods; stability, accuracy, shock capturing, and boundary approximations. S/U or letter grading.

**270F. Mathematical Aspects of Scientific Computing: Parallel Numerical Algorithms. (4)** Lecture, three hours. Requisites: courses 115A, 151A, 151B, 270B, 270C, Program in Computing 10A. Recommended: courses 270A, 270D, 270E. Design, analysis, and implementation of numerical algorithms on modern vector and parallel computers. Discussion of classical numerical algorithms and novel parallel algorithms. Emphasis on applications to PDEs. S/U or letter grading.

**271A. Tensor Analysis. (4)** Requisite: course 131A. Algebra and calculus of tensors on  $n$ -dimensional manifolds. Curvilinear coordinates and coordinate-free methods. Covariant differentiation. Green/Stokes theorem for differential forms. Applications to topics such as continuum and particle mechanics.



**271B. Analytical Mechanics. (4)** Preparation: prior knowledge of mechanics. Requisite: course 271A. Newtonian and Lagrangian equations. Hamilton principle. Principle of least action. Holonomic and nonholonomic systems. Hamilton canonical equations, contact transformations, applications.

**271C. Introduction to Relativity. (4)** Preparation: prior knowledge of mechanics. Requisite: course 271A. Restricted theory of relativity. Extensions to general theory. Relativistic theory of gravitation.

**271D. Wave Mechanics. (4)** General concepts of mechanical systems (states, space-time, logics, etc.). Classical and quantum examples. Correspondence principle. Spinors.

**272A. Foundations of Continuum Mechanics. (4)** Lecture, three hours. Kinematic preliminaries, conservation laws for mass, momentum and energy, entropy production, constitutive laws. Linear elasticity, inviscid fluid, viscous fluid. Basic theorems of fluid mechanics. Simple solutions. Low Reynolds number flow, Stokes drag. High Reynolds number flow, boundary layers. Two-dimensional potential flow, simple aerofoil. Compressible flow, shocks.

**272B. Mathematical Aspects of Fluid Mechanics. (4)** Lecture, three hours. Requisite: course 272A. Review of basic theory of moving continua, fluid equations, integral theorems. Simple solutions, flow created by slowly moving bodies, flows where viscosity is negligible, vortices, boundary layers and their separation, water waves, ship waves, compressional waves, shock waves, turbulence theory (overview).

**272C. Magnetohydrodynamics. (4)** Lecture, three hours. Requisite: course 272A. Basic electromagnetism. Steady flows, Hartmann layers. Alfvén theorem and waves. Compressible media. Magnetostatic equilibria and stability.

**272D. Rotating Fluids and Geophysical Fluid Dynamics. (4)** Lecture, three hours. Effects of Coriolis forces on fluid behavior. Inviscid flows, Taylor/Proudman theorem, Taylor columns, motions of bodies, inertial waves in spheres and spherical shells, Rossby waves. Ekman layers, spin-up. Shallow-water theory, wind-driven ocean circulation. Effects of stratification, Bénard convection. Baroclinic instability, Eady model. S/U or letter grading.

**273A. Optimization and Calculus of Variations: Basic Optimization Theory. (4)** Lecture, three hours. Introduction to basic optimization theory, recognition of solutions, and geometry of optimization. Some convex analysis, separation hyperplane, and duality theory. Basic optimization algorithms and their rates of convergence. S/U or letter grading.

**273B. Optimization and Calculus of Variations: Variations Calculus. (4)** Lecture, three hours. Abstract convex analysis and variational problems. Convexity, differentiability, existence, and characterization of minimizers. Polar functions, Lagrangians, saddle points, and duality techniques. Application of abstract mathematical theory to optimization problems of calculus of variations on Sobolev spaces. S/U or letter grading.

**273C. Optimization and Calculus of Variations: Numerical Optimization. (4)** Lecture, three hours. Derivation, analysis, and implementation of numerical methods for constrained and unconstrained optimization problems of variety of types and with data at different scales. S/U or letter grading.

**274A. Asymptotic Methods. (4)** Lecture, three hours. Requisite: course 132. Fundamental mathematics of asymptotic analysis, asymptotic expansions of Fourier integrals, method of stationary phase. Watson lemma, method of steepest descent, uniform asymptotic expansions, elementary perturbation problems. S/U or letter grading.

**274B-274C. Perturbation Methods. (4-4)** Lecture, three hours. Requisite: course 266A. Boundary layer theory, matched asymptotic expansions, WKBJ method. Problems with several time scales: Poincaré method, averaging techniques, multiple-scale analysis. Application to eigenvalue problems, nonlinear oscillations, wave propagation, and bifurcation problems. Examples from various fields of science and engineering.

## Probability and Statistics

**275A-275B. Probability Theory. (4-4)** Lecture, three hours; discussion, one hour. Connection between probability theory and real analysis. Weak and strong laws of large numbers, central limit theorem, conditioning, ergodic theory, martingale theory. S/U or letter grading.

**275C. Stochastic Processes. (4)** Lecture, three hours. Requisite: course 275B. Brownian motion, continuous-time martingales, Markov processes, potential theory. S/U or letter grading.

**275D. Stochastic Calculus. (4)** Lecture, three hours. Requisite: course 275C. Stochastic integration, stochastic differential equations, Ito formula and its applications. S/U or letter grading.

**275E. Stochastic Particle Systems. (4)** Lecture, three hours. Requisite: course 275C. Interacting particle systems, including contact process, stochastic Ising model, and exclusion processes; percolation theory. S/U or letter grading.

**276. Topics in Network Science. (4)** Lecture, three hours. Requisites: courses 115A, 170A. Interesting and popular areas of network science. Topics vary from year to year and may include dynamical processes on networks, mesoscale structures in networks, time-dependent networks, multilayer networks, applications of networks, data analysis in networks, spatial networks, and others. Discussion of recent review articles and research papers. Some presentations by students. Joint project on topic in network science possibly leading to publication. S/U or letter grading.

## Special Studies

**280. Programming++ for Mathematics Graduate Students. (4)** Lecture, three hours. Preparation: programming experience in at least one programming language. Limited to graduate students. Students gain knowledge of core programming language concepts, core operating system constructs, and core computational hardware constructs in order to become proficient in object oriented software construction and design in compiled language, and be able to rapidly learn new programming language for future activities. Students go beyond writing short programs or scripts that invoke preexisting high-level functionality to capability of creating any high-level functionality using object oriented software constructs and techniques. Emphasis on practice of programming rather than problem solving or fundamental algorithms. Emphasis on programming environment details, both software and hardware. S/U grading.

**285A-285N. Seminars. (4 each)** Seminar, three hours. No more than two 285 courses may be applied toward MA degree requirements except by prior consent of graduate vice chair. Topics in various branches of mathematics and their applications by means of lectures and informal conferences with staff members. S/U or letter grading: **285A.** History and Development of Mathematics. **285B.** Number Theory. **285C.** Algebra. **285D.** Logic. **285E.** Geometry. **285F.** Topology. **285G.** Analysis. **285H.** Differential Equations. **285I.** Functional Analysis. **285J.** Applied Mathematics. **285K.** Probability. **285L.** Dynamical Systems. **285N.** Combinatorics. **285P.** Representation Theory.

**290A-290O. Participating Seminars: Current Literature. (4 each)** Seminar, three hours. Designed for PhD students. Readings and presentations of papers in mathematical literature under supervision of staff member. Two-hour presentation required. S/U grading: **290A.** History and Development of Mathematics. **290B.** Number Theory. **290C.** Algebra. **290D.** Logic. **290E.** Geometry. **290F.** Topology. **290G.** Analysis. **290H.** Differential Equations. **290I.** Functional Analysis. **290J.** Applied Mathematics. **290K.** Probability. **290L.** Dynamical Systems. **290M.** Mathematics. **290N.** Combinatorics. **290O.** Cryptography.

**296A-296N. Research Seminars. (1 each)** Seminar, two hours. Seminars and discussion by staff and students. May be repeated for credit. S/U grading: **296A.** History and Development of Mathematics. **296B.** Number Theory. **296C.** Algebra. **296D.** Logic. **296E.** Geometry. **296F.** Topology. **296G.** Analysis. **296H.** Differential Equations. **296I.** Functional Analysis.

**296J.** Applied Mathematics. **296K.** Probability. **296L.** Dynamical Systems. **296M.** Mathematics. **296N.** Combinatorics.

**370A-370B. Teaching of Mathematics. (4-4)** Lecture, three hours; discussion, one hour. Requisite: course 33B. Limited to senior Mathematics Department majors. Course 370A is requisite to 370B. Topics in geometry, algebra, number theory, discrete mathematics, and functions presented from a problem-solving and student participation point of view, with emphasis on historical context and appropriate role of proof. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching College Mathematics. (2)** Seminar, one hour; two-day intensive training at beginning of Fall Quarter. Required of all new teaching assistants and new PhD students. Special course for teaching assistants designed to deal with problems and techniques of teaching college mathematics. S/U grading.

**495B. Technology and Teaching. (2 to 4)** Seminar, two hours; laboratory, one hour (when scheduled). Requisite: course 495. Focus on undergraduate mathematics instruction. Web-based electronic communication, using technology for class organization, use of presentation software packages, and creation of electronic teaching portfolio. Provides mechanics of technology and forum for evaluation and comparison of technology in undergraduate mathematics teaching. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA department chair and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Supervised individual reading and study on project approved by a faculty member, which may be preparation for MA examination. May be repeated for credit, but only two 596 courses (8 units) may be applied toward MA degree unless departmental consent is obtained. S/U or letter grading.

**599. Research in Mathematics. (2 to 12)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Study and research for PhD dissertation. May be repeated for credit. S/U grading.

## Program in Computing

### Lower-Division Courses

**10A. Introduction to Programming. (5)** Lecture, three hours; discussion, two hours; laboratory, eight hours. No prior programming experience assumed. Basic principles of programming, using C++; algorithmic, procedural problem solving; program design and development; basic data types, control structures and functions; functional arrays and pointers; introduction to classes for programmer-defined data types. P/NP or letter grading.

**10B. Intermediate Programming. (5)** Lecture, three hours; discussion, two hours; laboratory, eight hours. Requisite: course 10A or Computer Science 31. Abstract data types and their implementation using C++ class mechanism; dynamic data structures, including linked lists, stacks, queues, trees, and hash tables; applications; object-oriented programming and software reuse; recursion; algorithms for sorting and searching. P/NP or letter grading.

**10C. Advanced Programming. (5)** Lecture, three hours; discussion, two hours; laboratory, eight hours. Enforced requisite: course 10B. More advanced algorithms and data structuring techniques; additional emphasis on algorithmic efficiency; advanced features of C++, such as inheritance and virtual functions; graph algorithms. P/NP or letter grading.

**15. Introduction to Lisp and Symbolic Computation.** (5) Lecture, three hours; discussion, two hours; laboratory, eight hours. Enforced requisite: course 10A. Introduction to symbolic computation using Lisp programming language. Basics: list structures, recursion, function abstraction. Advanced topics: knowledge representation, higher-order functions, problem-solving algorithms and heuristics. P/NP or letter grading.

**16A. Python with Applications I.** (5) (Formerly numbered 16.) Lecture, three hours; discussion, two hours. Requisites: course 10A, Computer Science 31, or equivalent, with grades of C- or better. In-depth introduction to Python programming language for students who have already taken beginning programming course in strongly typed, compiled language (C++, C, or Fortran). Core Python language constructs, applications, text processing, data visualization, interaction with spreadsheets and SQL databases, and creation of graphical user interfaces. P/NP or letter grading.

**16B. Python with Applications II.** (5) Lecture, three hours; discussion, two hours. Requisite: course 16A or equivalent. In-depth application of Python programming language to problems arising in variety of areas of current interest such as machine learning, computer vision, statistical analysis, numerical analysis, and data acquisition. Advanced Python programming techniques to improve computational efficiency. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A. Principles of Java Language with Applications.** (5) Lecture, three hours; discussion, two hours; laboratory, eight hours. Requisite: course 10A or Computer Science 31. Not open for credit to students with credit for course 3. Introduction to Java computer language. Class and interface hierarchies; graphics components and graphical user interfaces; streams; multithreading; event and exception handling. Issues in class design and design of interactive web pages. P/NP or letter grading.

**40A. Introduction to Programming for Internet.** (5) Lecture, three hours; discussion, two hours. Requisites: course 10A or Computer Science 31 or equivalent, and one from course 10B, 16A, 20A, Computer Science 32, or equivalent, with grades of C- or better. Introduction to programming for World Wide Web for students with strong foundation in programming. HTML5 and CSS3 markup languages to design web sites; client-side scripting with JavaScript to enable event-driven interactivity, animations, and cookie tracking; server-side scripting with PHP to render HTML pages, store, and retrieve data on server; and introduction to databases through SQLite3. P/NP or letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Special Topics in Programming.** (1 to 4) Lecture, one to three hours; discussion, zero to one hour. Enforced requisite: course 10A. Variable topics in programming not covered in regular program in computing courses. May be repeated for credit with topic change. P/NP or letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division

students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**110. Parallel and Distributed Computing.** (5) Lecture, three hours; discussion, two hours; laboratory, eight hours. Requisite: course 10B or equivalent familiarity with programming in C or C++ language. Introduction to programming of parallel computers. Shared and distributed memory parallel architectures; currently available parallel machines; parallel algorithms and program development; estimation of algorithmic performance; distributed computing; selected advanced topics. P/NP or letter grading.

**130. Cryptography.** (4) Lecture, three hours; discussion, one hour; laboratory, three hours. Requisites: course 10B, Mathematics 115A. Design and analysis of cryptosystems for confidentiality and authentication. Classical cryptosystems and their security, modern private-key cryptosystems and applications, public-key cryptography and applications; generating prime numbers, factoring integers, discrete logarithms, digital signatures, perfect secrecy. P/NP or letter grading.

**187. Advanced Variable Topics in Programming.** (4) Lecture, three hours; discussion, one hour. Variable topics in programming and mathematics of programming not covered in regular program in computing courses. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Graduate Courses

**285C-285L. Seminars.** (4 each) Seminar, three hours. Considered equivalent to Mathematics 285A through 285L for purposes of degree requirements. Topics in various computational fields by means of lectures and informal conferences with staff members. S/U or letter grading: **285C.** Computational Algebra. **285D.** Logic and Theory of Computation. **285J.** Scientific Computation. **285K.** Randomness and Computation. **285L.** Computational Statistics.

**296. Participating Seminar: Logic and Theory of Computation.** (1 to 4) Seminar, to be arranged. Seminar and discussion by staff and students. S/U grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# MATHEMATICS/ ECONOMICS

Interdepartmental Program  
College of Letters and Science

6363 Mathematical Sciences  
Box 951555

Los Angeles, CA 90095-1555

Mathematics/Economics

310-206-1286

Program e-mail

Don M. Blasius, PhD, Co-Chair

Ichiro Obara, PhD, Co-Chair

## Faculty Committee

Don M. Blasius, PhD (*Mathematics*)

Zhipeng Liao, PhD (*Economics*)

Georg Menz, PhD (*Mathematics*)

Moritz Meyer-ter-Vehn, PhD (*Economics*)

Ichiro Obara, PhD (*Economics*)

Peter Petersen, PhD (*Mathematics*)

## Overview

In recent years economics has become increasingly dependent on mathematical methods, and the mathematical tools it employs have become more sophisticated. Mathematically competent economists, with bachelor's degrees and with advanced degrees, are needed in industry and government. Graduate programs in economics and finance programs in graduate schools of management require strong undergraduate preparation in mathematics for admission.

## Undergraduate Major

### Mathematics/Economics BS

The Mathematics/Economics BS degree program is designed to give students a solid foundation in both mathematics and economics, stressing those areas of mathematics and statistics that are most relevant to economics and the parts of economics that emphasize the use of mathematics and statistics. It is ideal for students who may wish to complete a higher degree in economics.

### Learning Outcomes

The Mathematics/Economics major has the following learning outcomes:

- Strong mathematical content knowledge of single and multivariable differential and integral calculus and differential equations
- Familiarity with linear algebra, techniques of proof, and the foundations of real analysis
- Ability to synthesize material, problem solve, and think abstractly
- Ability to perform basic computer programming, especially in C++
- Familiarity with various principles of macro- and microeconomics (analysis, institutions, policy)

## Entry to the Major

### Admission

Current UCLA students need to apply for the Mathematics/Economics major by filing a petition with the Student Services Office in 6356 Mathematical Sciences. All students are identified as Mathematics/Economics pre-majors until they satisfy the following minimum requirements for the major: (1) achieve grades of C or better in all pre-major mathematics sequenced courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, 61, Program in Computing 10A) with a minimum 2.7 grade-point average and no more than two repeats, (2) achieve grades of C or better in all pre-major economics courses (Economics 1, 2, 11) with a minimum 2.7 grade-point average and no more than one repeat, (3) complete one 12-unit term in residence in regular session at UCLA, (4) be enrolled in UCLA regular session at the time of application, and (5) file a petition to declare the major before completing 160 quarter units.

### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Mathematics/Economics pre-major at the time they apply for admission are automatically admitted to the pre-major.

### First-Year Students

To enter the major, students must petition after they have completed the six sequenced courses with a 2.7 minimum overall grade-point average, have completed one 12-unit term in residence in regular session at UCLA, are enrolled in UCLA regular session at the time of application, and before completing 160 quarter units.

### Transfer Students

Transfer applicants to the Mathematics/Economics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two years of calculus for majors, one introduction to discrete structures course, one microeconomic theory course, one macroeconomics course, and one C++ programming course.

Transfer credit for any of the above is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Student Services Office after completing one 12-unit term in residence in regular session at UCLA, and while enrolled in UCLA regular session at the time of application.

## Requirements

### Preparation for the Major

*Required:* Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, 61, Economics 1, 2, 11, Program in Computing 10A, one Writing II course.

## The Major

*Required:* Eight mathematics courses, including Mathematics 115A, 131A, 131B, 164, 170E, 170S, 174E (or Economics 141 or Statistics C183), and one elective course from Mathematics 134, 135, 136, or 171; six economics courses, including Economics 101, 102, 103, 103L, and two additional courses from 106E through 199B.

### Honors Program

To qualify for honors at graduation, students must (1) complete Mathematics 115AH, 131AH, and 131BH, (2) complete Economics 198A and 198B (the thesis process requires enrollment in a two-term sequence for economics courses), (3) present the thesis in Economics 198B, and (4) complete the major requirements with a minimum 3.5 grade-point average in both the upper-division economics and mathematics courses.

### Computing Specialization

Majors in Mathematics/Economics may select a Computing specialization by (1) satisfying all the requirements for a bachelor's degree in the major; and (2) completing Mathematics 61 or 180, Program in Computing 10A, 10B, two courses from 10C, 15, 16A, 20A, 40A, and at least two courses from Mathematics 149 through 159, with a minimum grade of C- in each course and a combined grade-point average of at least 2.0. Students must petition for admission to the program and are advised to do so after they complete Program in Computing 10B (petitions should be filed in the Mathematics Department Student Services Office). Students graduate with a bachelor's degree in mathematics/economics and a specialization in Computing.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade. The economics preparation for the major courses (Economics 1, 2, 11) are calculated separately from the mathematics preparation for the major courses (Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B, 61, Program in Computing 10A). The economics preparation courses must be completed with a minimum overall 2.7 grade-point average and a grade of C or better in each course, as must the mathematics preparation courses. Students must receive a grade of C or better in the Writing II course.

Repetition of more than one economics preparation course, more than two mathematics preparation courses, or of any economics or mathematics preparation course more than once results in automatic dismissal from the major.

### The Major

Each course must be taken for a letter grade. Transfer credit is subject to department approval; consult with an undergraduate counselor before enrolling in any courses for the major.

To graduate, the eight Mathematics Department courses must be completed with an overall grade-point average of 2.0, with grades of C- or better in Mathematics 115A and 131A, as must the five courses from the Economics Department, with grades of C- or better in Economics 101 and 102.

### Honors Program

Students who wish to graduate with departmental honors should apply for admission to the honors program in the Mathematics Department Student Services Office. They may apply any time after completing the preparation for the major courses and meeting the following requirements: (1) be officially enrolled in the Mathematics/Economics major, (2) complete all the preparation for the major courses, (3) achieve a minimum 3.5 grade-point average in the mathematics preparation for the major courses, (4) achieve a minimum 3.5 grade-point average in the economics preparation for the major courses, and (5) achieve a minimum 3.5 grade-point average in Economics 11, 101, and 102.

Highest honors are awarded at the discretion of the departmental honors committee based on grade-point average and quality of the senior thesis.

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# MECHANICAL AND AEROSPACE ENGINEERING

*Henry Samueli School of Engineering and Applied Science*

48-121 Engineering IV  
Box 951597  
Los Angeles, CA 90095-159

**Mechanical and Aerospace Engineering**  
310-825-7793  
**Message Center**

**Xiaolin Zhong, PhD, Chair**  
**Jonathan B. Hopkins, PhD, Vice Chair**  
**Yongjie Hu, PhD, Vice Chair**  
**Chang-Jin Kim, PhD, Vice Chair**

## Faculty Roster

### Professors

Andrea L. Bertozzi, PhD (*Betsy Wood Knapp Professor of Innovation and Creativity*)  
Robert N. Candler, PhD  
Gregory P. Carman, PhD (*Ben Rich-Lockheed Martin Professor of Advanced Aerospace Technologies*)  
Yong Chen, PhD  
Eric Pei-Yu Chiou, PhD  
Jeffrey D. Eldredge, PhD  
Timothy S. Fisher, PhD (*John P. and Claudia H. Schauerman Endowed Professor of Engineering*)  
Elisa Franco, PhD  
Rajit Gadh, PhD



Vijay Gupta, PhD  
 Dennis W. Hong, PhD  
 Jonathan B. Hopkins, PhD  
 Yongjie Hu, PhD  
 Tetsuya Iwasaki, PhD  
 Y. Sungtaek Ju, PhD  
 Ann R. Karagozian, PhD (*Collins Aerospace  
 Term Professor of Innovation*)  
 H. Pirouz Kavehpour, PhD  
 Chang-Jin (CJ) Kim, PhD (*Volgenau Endowed  
 Professor of Engineering*)  
 Adrienne G. Lavine, PhD  
 Xiaochun Li, PhD (*Raytheon Company  
 Professor of Mechanical Engineering*)  
 Jaime Marian, PhD  
 Robert T. M'Closkey, PhD  
 Ali Mosleh, PhD, NAE (*Evalyn Knight Professor  
 of Engineering*)  
 Sriram Narasimhan, PhD  
 Laurent G. Pilon, PhD  
 Jacob Rosen, PhD  
 Veronica J. Santos, PhD  
 Jason L. Speyer, PhD  
 Kunihiko (Sam) Taira, PhD  
 Tsu-Chin Tsao, PhD  
 Xiaolin Zhong, PhD

### Professors Emeriti

Mohamed A. Abdou, PhD  
 Oddvar O. Bendiksen, PhD  
 Vijay K. Dhir, PhD  
 Peretz P. Friedmann, ScD  
 Nasr M. Ghoniem, PhD  
 James S. Gibson, PhD  
 H. Thomas Hahn, PhD (*Raytheon Company  
 Professor Emeritus of Manufacturing  
 Engineering*)  
 Chih-Ming Ho, PhD (*Ben Rich–Lockheed  
 Martin Professor Emeritus of Aeronautics*)  
 J. John Kim, PhD (*Rockwell Collins Professor  
 Emeritus of Engineering*)  
 Ajit K. Mal, PhD  
 Anthony F. Mills, PhD  
 D. Lewis Mingori, PhD  
 Peter A. Monkewitz, PhD  
 Philip F. O'Brien, MS  
 Owen I. Smith, PhD  
 Richard E. Stern, PhD  
 Russell A. Westmann, PhD  
 Daniel C.H. Yang, PhD

### Associate Professors

Jean-Pierre Hubschman, MD, *in Residence*  
 M. Khalid Jawed, PhD  
 Lihua Jin, PhD  
 Raymond M. Spearrin, PhD  
 Xiaoyu (Rayne) Zheng, PhD

### Assistant Professors

Tyler R. Clites, PhD  
 Artur R. Davoyan, PhD  
 Neil Y.C. Lin, PhD  
 Brett T. Lopez, PhD  
 Ankur Mehta, PhD

### Lecturers

Ravnesch C. Amar, PhD  
 Amiya K. Chatterjee, PhD  
 Robert J. Kinsey, PhD  
 Damian M. Toohey, PhD

### Adjunct Professors

Portonovo S. Ayyaswamy, PhD  
 S. Amir Faghri, PhD  
 Dan M. Goebel, PhD  
 Vinay K. Goyal, PhD  
 Wilbur J. Marner, PhD

### Adjunct Associate Professors

Audrey P. O'Neal, PhD  
 Abdon E. Sepulveda, PhD

## Overview

The Department of Mechanical and Aerospace Engineering offers curricula in Aerospace Engineering and Mechanical Engineering at both the undergraduate and graduate levels. The scope of the departmental research and teaching program is broad, encompassing design, robotics, and manufacturing; fluid mechanics; micro-nano engineering; structural and solid mechanics; systems control; and thermal science and engineering. The applications of mechanical and aerospace engineering are quite diverse, including aircraft, spacecraft, automobiles, energy and propulsion systems, robotics, machinery, manufacturing and materials processing, microelectronics, biological systems, and more.

## Undergraduate Majors

### Aerospace Engineering BS

The aerospace engineering program is concerned with the design and construction of various types of fixed-wing and rotary-wing (helicopters) aircraft used for air transportation and national defense. It is also concerned with the design and construction of spacecraft, the exploration and utilization of space, and related technological fields.

Aerospace engineering is characterized by a very high level of technology. The aerospace engineer is likely to operate at the forefront of scientific discoveries, often stimulating these discoveries and providing the inspiration for the creation of new scientific concepts. Meeting these demands requires the imaginative use of many disciplines, including fluid mechanics and aerodynamics, structural mechanics, materials and aeroelasticity, dynamics, control and guidance, propulsion, and energy conversion.

The aerospace engineering program is accredited by the Engineering Accreditation Commission of [ABET](#).

### Capstone Major

The Aerospace Engineering major is a designated capstone major. Within their capstone courses, Aerospace Engineering students are exposed to the conceptual and design phases for aircraft development and produce a structural design of a component, such as a light-weight aircraft wing. Graduates should be able to apply their knowledge of mathematics, science, and engineering in technical systems; design a system, component, or process to meet desired needs; function as productive members of a team; identify, formulate, and

solve engineering problems; and communicate effectively, both orally and in writing.

## Learning Outcomes

The Aerospace Engineering major has the following learning outcomes:

- Application of knowledge of mathematics, science, and engineering
- Function as a productive member of a team that considers multiple aspects of an engineering problem
- Design of a system, component, or process to meet desired needs
- Effective oral and written communication
- Identification, formulation, and solution of engineering problems

## Requirements

### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A, 20B, 20L; Mathematics 31A, 31B, 32A, 32B, 33A; Mechanical and Aerospace Engineering M20 (or Computer Science 31), 82; Physics 1A, 1B, 1C, 4AL, 4BL.

### The Major

*Required:* Mechanical and Aerospace Engineering 1, 101, 102, 103, 105A, 105D, 107, 150A, 157, 166A, 171A; two departmental breadth courses (Electrical and Computer Engineering 100 and Materials Science and Engineering 104—if one or both of these courses are taken as part of the technical breadth requirement, students must select a replacement upper-division course or courses from the department—except for Mechanical and Aerospace Engineering 156A—or, by petition, from outside the department); one of the following two tracks (16 units): *aeronautics* (150B, C150P, 154A, 154S) or *space* (C150R, 161A, 161B, 161C); three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); one capstone design course (Mechanical and Aerospace Engineering 157A); one major field elective course (4 units) from the track not chosen (150B or C150P; C150R or 161A) and one major field elective course (4 units) from Mechanical and Aerospace Engineering 150B, C150R, 154S, 161A, 161B, 161C (unless taken as a required course), or from 94, 131A, C131G, 133A, 135, C136, C137, C138, CM140, 150C, C150G, 154B, 155, C156B, 162A, C162B, C163A, C163B, C163C, 166C, M168, 169A, 171B, 172, 174, C175A, 181A, 182B, 182C, 183A, M183B, C183C, 185, C186, C187L.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Mechanical Engineering BS

The mechanical engineering program is designed to provide basic knowledge in thermodynamics, fluid mechanics, heat transfer, solid mechanics, mechanical design, dynamics, control, mechanical systems, manufacturing, and materials. The program includes fundamental subjects important to all mechanical engineers.



The mechanical engineering program is accredited by the Engineering Accreditation Commission of **ABET**.

## Capstone Major

The Mechanical Engineering major is a designated capstone major. Within their capstone courses, Mechanical Engineering students work in teams to propose, design, analyze, and build a mechanical or electromechanical device. Graduates should be able to apply their knowledge of mathematics, science, and engineering in technical systems; design a system, component, or process to meet desired needs; function as productive members of a team; identify, formulate, and solve engineering problems; and communicate effectively, both orally and in writing.

## Learning Outcomes

The Mechanical Engineering major has the following learning outcomes:

- Application of knowledge of mathematics, science, and engineering
- Function as a productive member of a team that considers multiple aspects of an engineering problem
- Design of a system, component, or process to meet desired needs
- Effective oral and written communication
- Identification, formulation, and solution of engineering problems

## Requirements

### Preparation for the Major

*Required:* Chemistry and Biochemistry 20A, 20B, 20L; Mathematics 31A, 31B, 32A, 32B, 33A; Mechanical and Aerospace Engineering M20 (or Computer Science 31), 82, 94; Physics 1A, 1B, 1C, 4AL, 4BL.

### The Major

*Required:* Electrical and Computer Engineering 110L, Mechanical and Aerospace Engineering 101, 102, 103, 105A, 105D, 107, 131A or 133A, 156A, 157, 162A, 171A, 183A (or M183B); two departmental breadth courses (Electrical and Computer Engineering 100 and Materials Science and Engineering 104—if one or both of these courses are taken as part of the technical breadth requirement, students must select a replacement upper-division course or courses from the department—except for Mechanical and Aerospace Engineering 166A—or, by petition, from outside the department); three technical breadth courses (12 units) selected from an approved list available in the [Office of Academic and Student Affairs](#); two capstone design courses (Mechanical and Aerospace Engineering 162D, 162E); and two major field elective courses (8 units) from Mechanical and Aerospace Engineering 131A (unless taken as a required course), C131G, 133A (unless taken as a required course), 135, C136, C137, C138, CM140, 150A, 150B, 150C, C150G, C150P, C150R, 154B, 154S, 155, C156B, 157A, 161A, 161B, 161C, C162B, C163A, C163B, C163C, 166C, M168, 169A, 171B, 172, 174, C175A, 181A, 182B, 182C, 183A (unless taken as a required

course), M183B (unless taken as a required course), C183C, 185, C186, C187L.

For information on UC, school, and general education requirements, see the [Samueli school](#) section in College and Schools.

## Graduate Majors

### Aerospace Engineering MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Manufacturing Engineering MS

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Mechanical Engineering MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Mechanical and Aerospace Engineering

### Lower-Division Courses

**1. Undergraduate Seminar. (1)** Seminar, one hour; outside study, two hours. Introduction by faculty members and industry lecturers to mechanical and aerospace engineering disciplines through current and emerging applications in aerospace, medical instrumentation, automotive, entertainment, energy, and manufacturing industries. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Introduction to Computer Programming with MATLAB. (4)** (Same as Civil Engineering M20.) Lecture, two hours; discussion, two hours; laboratory, two hours; outside study, six hours. Requisite: Mathematics 33A. Fundamentals of computer programming taught in context of MATLAB computing environment.

Basic data types and control structures. Input/output. Functions. Data visualization. MATLAB-based data structures. Development of efficient codes. Introduction to object-oriented programming. Examples and exercises from engineering, mathematics, and physical sciences. Letter grading.

**82. Mathematics of Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: Mathematics 33A. Recommended requisite: course M20. Methods of solving ordinary differential equations in engineering. Review of matrix algebra, eigenvalues, and eigenvectors. Solution of systems of first-order ordinary differential equations using matrix methods. Introduction to Laplace transforms and their application to ordinary differential equations. Introduction to boundary value problems, partial differential equations, and separation of variables. Letter grading.

**94. Introduction to Computer-Aided Design and Drafting. (4)** Lecture, two hours; laboratory, four hours. Fundamentals of computer graphics and two- and three-dimensional modeling on computer-aided design and drafting systems. Students use one or more online computer systems to design and display various objects. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101. Statics and Strength of Materials. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Mathematics 31A, 31B, Physics 1A. Review of vector representation of forces, resultant force and moment, equilibrium of concurrent and non-concurrent forces. Area moments and products of inertia. Support reactions, free-body diagrams. Forces in simple models of mechanical and aerospace structures. Internal forces in beams, shear and moment diagrams. Stress and strain components in solids, equilibrium equations, Hooke's law for isotropic solids. Bending and shear stresses in beams. Deflection of symmetric beams and indeterminate problems. Stresses in thin-walled pressure vessels and in circular cylinders under torsion. Letter grading.

**102. Dynamics of Particles and Rigid Bodies. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 101, Mathematics 33A, Physics 1A. Fundamental concepts of Newtonian mechanics. Kinematics and kinetics of particles and rigid bodies in two and three dimensions. Impulse-momentum and work-energy relationships. Applications. Letter grading.

**103. Elementary Fluid Mechanics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Mathematics 32B, 33A, Physics 1B. Introductory course dealing with application of principles of mechanics to flow of compressible and incompressible fluids. Letter grading.

**105A. Introduction to Engineering Thermodynamics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Chemistry 20B, Mathematics 32B. Phenomenological thermodynamics. Concepts of equilibrium, temperature, and reversibility. First law and concept of energy; second law and concept of entropy. Equations of state and thermodynamic properties. Engineering applications of these principles in analysis and design of closed and open systems. Letter grading.

**105D. Transport Phenomena. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 82, 103, 105A. Transport phenomena; heat conduction, mass species diffusion, convective heat and mass transfer, and radiation. Engineering applications in thermal and environmental control. Letter grading.

**107. Introduction to Modeling and Analysis of Dynamic Systems. (4)** Lecture, four hours; discussion, one hour; laboratory, two hours; outside study, five hours. Enforced requisites: courses M20 (or Computer

Science 31), 82, Electrical Engineering 100. Introduction to modeling of physical systems, with examples of mechanical, fluid, thermal, and electrical systems. Description of these systems with coverage of impulse response, convolution, frequency response, first- and second-order system transient response analysis, and numerical solution. Nonlinear differential equation descriptions with discussion of equilibrium solutions, small signal linearization, large signal response. Block diagram representation and response of interconnections of systems. Hands-on experiments reinforce lecture material. Letter grading.

**131A. Intermediate Heat Transfer. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: courses M20 (or Civil Engineering M20 or Computer Science 31), 82, 105D. Steady conduction: two-sided, two-ended, tapered, and circular fins; buried cylinders, thick fins. Transient conduction: slabs, cylinders, products. Convection: transpiration, laminar pipe flow, film condensation, boundary layers, dimensional analysis, working correlation, surface radiation. Two-stream heat exchangers. Elements of thermal design. Letter grading.

**C131G. Microscopic Energy Transport. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 105D. Exploration of basic principles of transportation of energy in natural and fabricated structures by three carriers: electrons, phonons, and molecules. Study of statistical properties of heat carriers, common Landauer framework for heat flow, scattering and propagation of heat carriers, derivation of classical laws from microscopic transport equations, and deviation from classical laws at small scale. Concurrently scheduled with course C231G. Letter grading.

**133A. Engineering Thermodynamics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 103, 105A. Applications of thermodynamic principles to engineering processes. Energy conversion systems. Rankine cycle and other cycles, refrigeration, psychrometry, reactive and non-reactive fluid flow systems. Elements of thermodynamic design. Letter grading.

**135. Fundamentals of Nuclear Science and Engineering. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: course 82, Chemistry 20A. Review of nuclear physics, radioactivity and decay, and radiation interaction with matter. Nuclear fission and fusion processes and mass defect, chain reactions, criticality, neutron diffusion and multiplication, heat transfer issues, and applications. Introduction to nuclear power plants for commercial electricity production, space power, spacecraft propulsion, nuclear fusion, and nuclear science for medical uses. Letter grading.

**C136. Energy and Environment. (4)** (Formerly numbered 136.) Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 105A or equivalent. Global energy use and supply, electrical power generation, fossil fuel and nuclear power plants, renewable energy such as hydropower, biomass, geothermal, solar, wind, and ocean, fuel cells, transportation, energy conservation, air and water pollution, global warming. Concurrently scheduled with course C236. Letter grading.

**C137. Design and Analysis of Smart Grids. (4)** Lecture, four hours; outside study, eight hours. Demand response; transactive/price-based load control; home-area network, smart energy profile; advanced metering infrastructure; renewable energy integration; solar and wind generation intermittency and correction; microgrids; grid stability; energy storage and electric vehicles-simulation; monitoring; distribution and transmission grids; consumer-centric technologies; sensors, communications, and computing; wireless, wireline, and powerline communications for smart grids; grid modeling, stability, and control; frequency and voltage regulation; ancillary services; wide-area situational awareness, phasor measurements; analytical methods and tools for monitoring and control. Concurrently scheduled with course C237. Letter grading.

**C138. Introduction to Statistical Thermodynamics. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 105A, 105D. Introduction to basic concepts and tools of statistical thermodynamics. Ab-

stract concepts of entropy, temperature, and chemical potential are explained by developing these concepts from ground up using only mechanical and statistical principles. Discussion of equilibrium properties of thermodynamic systems and associated distributions. Provides sound foundation for further studies in transport phenomena, plasma, chemical kinetics, micro/nanoscale science and technology, and other related subjects. Concurrently scheduled with course C238. Letter grading.

**CM140. Introduction to Biomechanics. (4)** (Same as Bioengineering CM140.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 101, 102, and 156A or 166A. Introduction to mechanical functions of human body; skeletal adaptations to optimize load transfer, mobility, and function. Dynamics and kinematics. Fluid mechanics applications. Heat and mass transfer. Power generation. Laboratory simulations and tests. Concurrently scheduled with course CM240. Letter grading.

**150A. Intermediate Fluid Mechanics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: courses 82, 103. Basic equations governing fluid motion. Fundamental solutions of Navier-Stokes equations. Lubrication theory. Elementary potential flow theory. Boundary layers. Turbulent flow in pipes and boundary layers. Compressible flow: normal shocks, channel flow with friction or heat addition. Letter grading.

**150B. Aerodynamics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 103, 150A. Advanced aspects of potential flow theory. Incompressible flow around thin airfoils (lift and moment coefficients) and wings (lift, induced drag). Gas dynamics: oblique shocks, Prandtl/Meyer expansion. Linearized subsonic and supersonic flow around thin airfoils and wings. Wave drag. Transonic flow. Letter grading.

**150C. Combustion Systems. (4)** Lecture, four hours; outside study, eight hours. Enforced requisites: courses 103, 105A. Chemical thermodynamics of ideal gas mixtures, premixed and diffusion flames, explosions and detonations, combustion chemistry, high explosives. Combustion processes in rocket, turbine, and internal combustion engines; heating applications. Letter grading.

**C150G. Fluid Dynamics of Biological Systems. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 103. Mechanics of aquatic locomotion; insect and bird flight aerodynamics; pulsatile flow in circulatory system; rheology of blood; transport in microcirculation; role of fluid dynamics in arterial diseases. Concurrently scheduled with course C250G. Letter grading.

**C150P. Aircraft Propulsion Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 105A, 150A. Thermodynamic properties of gases, aircraft jet engine cycle analysis and component performance, component matching, advanced aircraft engine topics. Concurrently scheduled with course C250P. Letter grading.

**C150R. Rocket Propulsion Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: courses 103, 105A. Rocket propulsion concepts, including chemical rockets (liquid, gas, and solid propellants), hybrid rocket engines, electric (ion, plasma) rockets, nuclear rockets, and solar-powered vehicles. Current issues in launch vehicle technologies. Concurrently scheduled with course C250R. Letter grading.

**154A. Preliminary Design of Aircraft. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 154S. Classical preliminary design of aircraft, including weight estimation, performance and stability, and control consideration. Term assignment consists of preliminary design of low-speed aircraft. Letter grading.

**154B. Design of Aerospace Structures. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 154A, 166A. Design of aircraft, helicopter, spacecraft, and related structures. External loads, internal stresses. Applied theory of thin-walled structures. Material selection, design using composite ma-

terials. Design for fatigue prevention and structural optimization. Field trips to aerospace companies. Letter grading.

**154S. Flight Mechanics, Stability, and Control of Aircraft. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Requisites: courses 150A, 150B. Aircraft performance, flight mechanics, stability, and control; some basic ingredients needed for design of aircraft. Effects of airplane flexibility on stability derivatives. Letter grading.

**155. Intermediate Dynamics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: course 102. Axioms of Newtonian mechanics, generalized coordinates, Lagrange equation, variational principles; central force motion; kinematics and dynamics of rigid bodies. Euler equations, motion of rotating bodies, oscillatory motion, normal coordinates, orthogonality relations. Letter grading.

**156A. Advanced Strength of Materials. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 82, 101. Not open to students with credit for course 166A. Concepts of stress, strain, and material behavior. Stresses in loaded beams with symmetric and asymmetric cross sections. Torsion of cylinders and thin-walled structures, shear flow. Stresses in pressure vessels, press-fit and shrink-fit problems, rotating shafts. Curved beams. Contact stresses. Strength and failure, plastic deformation, fatigue, elastic instability. Letter grading.

**C156B. Mechanical Design for Power Transmission. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 156A or 166A. Material selection in mechanical design. Load and stress analysis. Deflection and stiffness. Failure due to static loading. Fatigue failure. Design for safety factors and reliability. Applications of failure prevention in design of power transmission shafting. Design project involving computer-aided design (CAD) and finite element analysis (FEA) modeling. Concurrently scheduled with course C296A. Letter grading.

**157. Basic Mechanical and Aerospace Engineering Laboratory. (4)** Laboratory, eight hours; outside study, four hours. Requisites: courses 101, 102, 103, 105A, 105D, Electrical and Computer Engineering 100. Methods of measurement of basic quantities and performance of basic experiments in fluid mechanics, structures, and thermodynamics. Primary sensors, transducers, recording equipment, signal processing, and data analysis. Letter grading.

**157A. Aerospace Design Laboratory. (4)** Lecture, two hours; laboratory, six hours; outside study, four hours. Requisites: courses 150A, 157. Recommended: 150B, C150R. Experimental illustration of important physical phenomena in area of fluid mechanics/aerodynamics, as well as hands-on experience with design of experimental programs and use of modern experimental tools and techniques in field. Letter grading.

**161A. Introduction to Astronautics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 102. Recommended: course 82. Spaceflight, including two-body and three-body problem, Kepler laws, and Keplerian orbits. Ground track and taxonomy of common orbits. Orbital and transfer maneuvers, patched conics, perturbation theory, low-thrust trajectories, spacecraft pointing, and spacecraft attitude control. Space mission design, space environment, rendezvous, reentry, and launch. Letter grading.

**161B. Introduction to Space Technology. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended preparation: courses 102, 161A. Spacecraft systems and dynamics, including spacecraft power, instruments, communications, structures, materials, thermal control, and attitude/orbit determination and control. Space mission design, launch vehicles/considerations, space propulsion. Letter grading.

**161C. Spacecraft Design. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 161B. Preliminary design and analysis by students of Earth-orbiting or interplanetary space missions and spacecraft. Students work in groups of three or four, with each student responsible primarily for one subsystem and for integration with whole. Letter grading.

**162A. Introduction to Mechanisms and Mechanical Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisites: courses M20 (or Computer Science 31), 102. Analysis and synthesis of mechanisms and mechanical systems. Kinematics, dynamics, and mechanical advantages of machinery. Displacement velocity and acceleration analyses of linkages. Fundamental law of gearing and various gear trains. Computer-aided mechanism design and analysis. Letter grading.

**C162B. Compliant Mechanism Design. (4)** Lecture, four hours; outside study, eight hours. Requisite: linear algebra. Advanced compliant mechanism synthesis approaches, modeling techniques, and optimization tools. Fundamentals of flexible constraint theory, principles of constraint-based design, projective geometry, screw theory kinematics, and freedom and constraint topologies. Applications: precision motion stages, general purpose flexure bearings, microstructural architectures, MEMs, optical mounts, and nanoscale positioning systems. Hands-on exercises include build-your-own flexure kits, CAD and FEA simulations, and term project. Concurrently scheduled with course C194A. Letter grading.

**162D. Mechanical Engineering Design I. (4)** Lecture, two hours; laboratory, four hours; outside study, six hours. Enforced requisites: courses 94, 156A (or 183A or M183B), 162A (or 171A). Limited to seniors. First of two mechanical engineering capstone design courses. Lectures on engineering project management, design of thermal systems, mechatronics, mechanical systems, and mechanical components. Students work in teams to begin their two-term design project. Laboratory modules include CAD design, CAD analysis, mechatronics, and conceptual design for team project. Letter grading.

**162E. Mechanical Engineering Design II. (4)** Lecture, two hours; laboratory, four hours; outside study, six hours. Enforced requisite: course 162D. Limited to seniors. Second of two mechanical engineering capstone design courses. Student groups continue design projects started in course 162D, making use of CAD design laboratory, CAD analysis laboratory, and mechatronics laboratory. Design theory, design tools, economics, marketing, manufacturability, quality, intellectual property, design for manufacture and assembly, design for safety and reliability, and engineering ethics. Students conduct hands-on design, fabrication, and testing. Culminating project demonstrations or competition. Preparation of design project presentations in both oral and written formats. Letter grading.

**C163A. Kinematics of Robotic Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisites: courses 155, 171A. Kinematical models of serial robotic manipulators, including spatial descriptions and transformations (Euler angles, Denavit-Hartenberg/DH parameters, equivalent angle vector), frame assignment procedure, direct kinematics, inverse kinematics (geometric and algebraic approaches), mechanical design topics. Concurrently scheduled with course C263A. Letter grading.

**C163B. Dynamics of Robotic Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course C163A. Dynamics models of serial and parallel robotic manipulators, including review of spatial descriptions and transformations along with direct and inverse kinematics, linear and angular velocities, Jacobian matrix (velocity and force), velocity propagation method, force propagation method, explicit formulation of Jacobian matrix, manipulator dynamics (Newton/Euler formulation, Lagrangian formulation), trajectory generation, introduction to parallel manipulators. Concurrently scheduled with course C263B. Letter grading.

**C163C. Control of Robotic Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course C163B. Sensors, actuators, and control schemes for robotic systems, including computed torque control, linear feedback control, impedance and force feedback control, and advanced control topics from nonlinear and adaptive control, hybrid control, nonholonomic systems, vision-based control, and perception. Concurrently scheduled with course C263C. Letter grading.

**166A. Analysis of Aerospace Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 82, 101. Not open to students with credit for course 156A. Introduction to two-dimensional elasticity, stress-strain laws, yield and fatigue; bending of beams; torsion of beams; warping; torsion of thin-walled cross sections: shear flow, shear-lag; combined bending torsion of thin-walled, stiffened structures used in aerospace vehicles; elements of plate theory; buckling of columns. Letter grading.

**166C. Design of Composite Structures. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 156A or 166A. History of composites, stress-strain relations for composite materials, bending and extension of symmetric laminates, failure analysis, design examples and design studies, buckling of composite components, non-symmetric laminates, micromechanics of composites. Letter grading.

**M168. Introduction to Finite Element Methods. (4)** (Same as Civil Engineering M135C.) Lecture, four hours; discussion, one hour; outside study, seven hours. Requisite: course 156A or 166A or Civil Engineering 130. Introduction to basic concepts of finite element methods (FEM) and applications to structural and solid mechanics and heat transfer. Direct matrix structural analysis; weighted residual, least squares, and Ritz approximation methods; shape functions; convergence properties; isoparametric formulation of multidimensional heat flow and elasticity; numerical integration. Practical use of FEM software; geometric and analytical modeling; preprocessing and postprocessing techniques; term projects with computers. Letter grading.

**169A. Introduction to Mechanical Vibrations. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: courses 101, 102, 107. Fundamentals of vibration theory and applications. Free, forced, and transient vibration of one and two degrees of freedom systems, including damping. Normal modes, coupling, and normal coordinates. Vibration isolation devices, vibrations of continuous systems. Letter grading.

**171A. Introduction to Feedback and Control Systems: Dynamic Systems Control I. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 107. Introduction to feedback principles, control systems design, and system stability. Modeling of physical systems in engineering and other fields; transform methods; controller design using Nyquist, Bode, and root locus methods; compensation; computer-aided analysis and design. Letter grading.

**171B. Digital Control of Physical Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 171A or Electrical Engineering 141. Analysis and design of digital control systems. Sampling theory. Z-transformation. Discrete-time system representation. Design using classical methods: performance specifications, root locus, frequency response, loop-shaping compensation. Design using state-space methods: state feedback, state estimator, state estimator feedback control. Simulation of sampled data systems and practical aspects: roundoff errors, sampling rate selection, computation delay. Letter grading.

**172. Control System Design Laboratory. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Enforced requisite: course 171A. Introduction to loop shaping controller design with application to laboratory electromechanical systems. Power spectrum models of noise and disturbances, and performance trade-offs imposed by conflicting requirements. Constraints on sensitivity function and complementary sensitivity function imposed by nonminimum phase plants. Lecture topics supported by weekly hands-on laboratory work. Letter grading.

**174. Probability and Its Applications to Risk, Reliability, and Quality Control. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: Mathematics 33A. Introduction to probability theory; random variables, distributions, functions of random variables, models of failure of components, reliability, redundancy, complex systems, stress-

strength models, fault tree analysis, statistical quality control by variables and by attributes, acceptance sampling. Letter grading.

**C175A. Probability and Stochastic Processes in Dynamical Systems. (4)** Lecture, four hours; outside study, eight hours. Enforced requisites: courses 82, 107. Probability spaces, random variables, stochastic sequences and processes, expectation, conditional expectation, Gauss/Markov sequences, and minimum variance estimator (Kalman filter) with applications. Concurrently scheduled with course C271A. Letter grading.

**181A. Complex Analysis and Integral Transforms. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 82. Complex variables, analytic functions, conformal mapping, contour integrals, singularities, residues, Cauchy integrals; Laplace transform: properties, convolution, inversion; Fourier transform: properties, convolution, FFT, applications in dynamics, vibrations, structures, and heat conduction. Letter grading.

**182B. Mathematics of Engineering. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisite: course 82. Analytical methods for solving partial differential equations arising in engineering. Separation of variables, eigenvalue problems, Sturm/Liouville theory. Development and use of special functions. Representation by means of orthonormal functions; Galerkin method. Use of Green's function and transform methods. Letter grading.

**182C. Numerical Methods for Engineering Applications. (4)** Lecture, four hours; discussion, one hour; outside study, seven hours. Enforced requisites: courses M20 (or Civil Engineering M20 or Computer Science 31), 82. Basic topics from numerical analysis having wide application in solution of practical engineering problems, computer arithmetic, and errors. Solution of linear and nonlinear systems. Algebraic eigenvalue problem. Least-square methods, numerical quadrature, and finite difference approximations. Numerical solution of initial and boundary value problems for ordinary and partial differential equations. Letter grading.

**183A. Introduction to Manufacturing Processes. (4)** Lecture, three hours; laboratory, four hours; outside study, five hours. Enforced requisite: Materials Science 104. Manufacturing fundamentals. Materials in manufacturing. Solidification processes. Metal forming processes. Material removal processes. Welding/joining. Rapid prototyping. Electronics manufacturing. Microelectromechanical systems (MEMS) and nanotechnology. Letter grading.

**M183B. Introduction to Microscale and Nanoscale Manufacturing. (4)** (Same as Bioengineering M153, Chemical Engineering M153, and Electrical and Computer Engineering M153.) Lecture, three hours; laboratory, four hours; outside study, five hours. Enforced requisites: Chemistry 20A, Physics 1A, 1B, 1C, 4AL. Introduction to general manufacturing methods, mechanisms, constraints, and microfabrication and nanofabrication. Focus on concepts, physics, and instruments of various microfabrication and nanofabrication techniques that have been broadly applied in industry and academia, including various photolithography technologies, physical and chemical deposition methods, and physical and chemical etching methods. Hands-on experience for fabricating microstructures and nanostructures in modern clean-room environment. Letter grading.

**C183C. Rapid Prototyping and Manufacturing. (4)** Lecture, four hours; laboratory, two hours; outside study, six hours. Enforced requisite: course 183A. Rapid prototyping (RP), solid freeform fabrication, or additive manufacturing has emerged as popular manufacturing technology to accelerate product creation in last two decades. Machine for layered manufacturing builds parts directly from CAD models. This novel manufacturing technology enables building of parts that have traditionally been impossible to fabricate because of their complex shapes or of variety in materials. In analogy to speed and flexibility of desktop publishing, rapid prototyping is also called desktop manufacturing, with actual three-dimensional solid objects instead of mere two-dimensional images.

Methodology of rapid prototyping has also been extended into meso-/micro-/nano-scale to produce three-dimensional functional miniature components. Concurrently scheduled with course C297A. Letter grading.

**185. Introduction to Radio Frequency Identification and Its Application in Manufacturing and Supply Chain. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course M20 or Civil Engineering M20 or Computer Science 31. Manufacturing today requires assembling of individual components into assembled products, shipping of such products, and eventually use, maintenance, and recycling of such products. Radio frequency identification (RFID) chips installed on components, sub-assemblies, and assemblies of products allow them to be tracked automatically as they move and transform through manufacturing supply chain. RFID tags have memory and small CPU that allows information about product status to be written, stored, and transmitted wirelessly. Tag data can then be forwarded by reader to enterprise software by way of RFID middleware layer. Study of how RFID is being utilized in manufacturing, with focus on automotive and aerospace. Letter grading.

**C186. Applied Optics. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: Physics 1C. Fundamental principles of optical systems. Geometric optics and aberration theory. Diffraction and interference. Fourier optics, beam optics. Propagation of light, Snell's law, and Huygen principle. Refraction and reflection. Plane waves, spherical waves, and image formation. Total internal reflection. Polarization, polarizers, and wave-plates. Lenses and aberrations, lens laws and formation of images, resolution and primary aberrations. Simple optical instruments, still cameras, shutters, apertures. Design of telescopes, microscope design, projection system design. Interference, Young's slit experiment and fringe visibility, Michelson interferometer, multiple-beam interference and thin film coatings. Diffraction theory, Fraunhofer and Fresnel diffraction, Fresnel zone plate. Fiber optics, waveguides and modes, fiber coupling, types of fiber: single and multimode. Concurrently scheduled with course C286. Letter grading.

**C187L. Nanoscale Fabrication, Characterization, and Biodetection Laboratory. (4)** Lecture, two hours; laboratory, three hours; outside study, seven hours. Multidisciplinary course that introduces laboratory techniques of nanoscale fabrication, characterization, and biodetection. Basic physical, chemical, and biological principles related to these techniques, top-down and bottom-up (self-assembly) nanofabrication, nanocharacterization (AEM, SEM, etc.), and optical and electrochemical biosensors. Students encouraged to create their own ideas in self-designed experiments. Concurrently scheduled with course C287L. Letter grading.

**188. Special Courses in Mechanical and Aerospace Engineering. (2 to 4)** Lecture, two to four hours; outside study, four to eight hours. Special topics in mechanical and aerospace engineering for undergraduate students taught on experimental or temporary basis, such as those taught by resident and visiting faculty members. May be repeated once for credit with topic or instructor change. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**194. Research Group Seminars: Mechanical and Aerospace Engineering. (2 to 4)** Seminar, two hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field. Student presentation of projects in research specialty. May be repeated for credit. P/NP or letter grading.

**199. Directed Research in Mechanical and Aerospace Engineering. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit with school approval. Individual contract required; enrollment petitions available in Office of Academic and Student Affairs. Letter grading.

## Graduate Courses

**231A. Convective Heat Transfer Theory. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 131A, 182B. Recommended: course 250A. Conservation equations for flow of real fluids. Analysis of heat transfer in laminar and turbulent, incompressible and compressible flows. Internal and external flows; free convection. Variable wall temperature; effects of variable fluid properties. Analogies among convective transfer processes. Letter grading.

**231B. Radiation Heat Transfer. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 105D. Radiative properties of materials and radiative energy transfer. Emphasis on fundamental concepts, including energy levels and electromagnetic waves as well as analytical methods for calculating radiative properties and radiation transfer in absorbing, emitting, and scattering media. Applications cover laser-material interactions in addition to traditional areas such as combustion and thermal insulation. Letter grading.

**231C. Phase Change Heat Transfer and Two-Phase Flow. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 131A, 150A. Two-phase flow, boiling, and condensation. Generalized constitutive equations for two-phase flow. Phenomenological theories of boiling and condensation, including forced flow effects. Letter grading.

**C231G. Microscopic Energy Transport. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 105D. Exploration of basic principles of transportation of energy in natural and fabricated structures by three carriers: electrons, phonons, and molecules. Study of statistical properties of heat carriers, common Landauer framework for heat flow, scattering and propagation of heat carriers, derivation of classical laws from microscopic transport equations, and deviation from classical laws at small scale. Term project. Concurrently scheduled with course C131G. Letter grading.

**233. Nanoscience for Energy Technologies. (4)** Lecture, four hours; outside study, eight hours. Introduction to fundamental principles of energy transport, conversion, and storage at nanoscale, and recent development for these energy technologies involving nanotechnology. Focus on basics of thermal science, solid state, quantum mechanics, electromagnetics, and statistical physics. Topic discussions given for examples that connect technological application, fundamental challenge, and scientific-solution-based nanotechnology to improve device performance and energy efficiency. Letter grading.

**235A. Nuclear Reactor Theory. (4)** Lecture, four hours; outside study, eight hours. Underlying physics and mathematics of nuclear reactor (fission) core design. Diffusion theory, reactor kinetics, slowing down and thermalization, multigroup methods, introduction to transport theory. Letter grading.

**C236. Energy and Environment. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course 105A or equivalent. Global

energy use and supply, electrical power generation, fossil fuel and nuclear power plants, renewable energy such as hydropower, biomass, geothermal, solar, wind, and ocean, fuel cells, transportation, energy conservation, air and water pollution, global warming. Concurrently scheduled with course C136. Letter grading.

**C237. Design and Analysis of Smart Grids. (4)** Lecture, four hours; outside study, eight hours. Demand response; transactive/price-based load control; home-area network, smart energy profile; advanced metering infrastructure; renewable energy integration; solar and wind generation intermittency and correction; microgrids; grid stability; energy storage and electric vehicles-simulation; monitoring; distribution and transmission grids; consumer-centric technologies; sensors, communications, and computing; wireless, wireline, and powerline communications for smart grids; grid modeling, stability, and control; frequency and voltage regulation; ancillary services; wide-area situational awareness, phasor measurements; analytical methods and tools for monitoring and control. Concurrently scheduled with course C137. Letter grading.

**M237B. Fusion Plasma Physics and Analysis. (4)** (Same as Electrical and Computer Engineering M287.) Lecture, four hours; outside study, eight hours. Fundamentals of plasmas at thermonuclear burning conditions. Fokker/Planck equation and applications to heating by neutral beams, RF, and fusion reaction products. Bremsstrahlung, synchrotron, and atomic radiation processes. Plasma surface interactions. Fluid description of burning plasma. Dynamics, stability, and control. Applications in tokamaks, tandem mirrors, and alternate concepts. Letter grading.

**237D. Fusion Engineering and Design. (4)** Lecture, four hours; outside study, eight hours. Fusion reactions and fuel cycles. Principles of inertial and magnetic fusion. Plasma requirements for controlled fusion. Plasma-surface interactions. Fusion reactor concepts and technological components. Analysis and design of high heat flux components, energy conversion and tritium breeding components, radiation shielding, magnets, and heating. Letter grading.

**C238. Introduction to Statistical Thermodynamics. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses 105A, 105D. Introduction to basic concepts and tools of statistical thermodynamics. Abstract concepts of entropy, temperature, and chemical potential are explained by developing these concepts from ground up using only mechanical and statistical principles. Discussion of equilibrium properties of thermodynamic systems and associated distributions. Provides sound foundation for further studies in transport phenomena, plasma, chemical kinetics, micro/nanoscale science and technology, and other related subjects. Concurrently scheduled with course C138. Letter grading.

**239B. Seminar: Current Topics in Transport Phenomena. (2 to 4)** Seminar, two to four hours; outside study, four to eight hours. Designed for graduate mechanical and aerospace engineering students. Lectures, discussions, student presentations, and projects in areas of current interest in transport phenomena. May be repeated for credit. S/U grading.

**239F. Special Topics in Transport Phenomena. (2 to 4)** Lecture, two to four hours; outside study, four to eight hours. Designed for graduate mechanical and aerospace engineering students. Advanced and current study of one or more aspects of heat and mass transfer, such as turbulence, stability and transition, buoyancy effects, variational methods, and measurement techniques. May be repeated for credit with topic change. S/U grading.

**239G. Special Topics in Nuclear Engineering. (2 to 4)** Lecture, two to four hours; outside study, four to eight hours. Designed for graduate mechanical and aerospace engineering students. Advanced study in areas of current interest in nuclear engineering, such as reactor safety, risk-benefit trade-offs, nuclear materials, and reactor design. May be repeated for credit with topic change. S/U grading.



**239H. Special Topics in Fusion Physics, Engineering, and Technology. (2 to 4)** Seminar, two to four hours; outside study, four to eight hours. Designed for graduate mechanical and aerospace engineering students. Advanced treatment of subjects selected from research areas in fusion science and engineering, such as instabilities in burning plasmas, alternate fusion confinement concepts, inertial confinement fusion, fission-fusion hybrid systems, and fusion reactor safety. May be repeated for credit with topic change. S/U grading.

**CM240. Introduction to Biomechanics. (4)** (Same as Bioengineering CM240.) Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisites: courses 101, 102, and 156A or 166A. Introduction to mechanical functions of human body; skeletal adaptations to optimize load transfer, mobility, and function. Dynamics and kinematics. Fluid mechanics applications. Heat and mass transfer. Power generation. Laboratory simulations and tests. Concurrently scheduled with course CM140. Letter grading.

**242. Introduction to Multiferroic Materials. (4)** Lecture, four hours; outside study, eight hours. Overview of different types of multiferroic materials, including strain mediated. Basic crystal structure of single-phase multiferroics, as well as fundamental physics underlying ferroelectricity and ferromagnetism. Material science description of these materials, with focus on linear and nonlinear behavior with associated mechanisms such as spin reorientation. Presentation of analytical tools necessary to predict material response ranging from constitutive relations to governing equations, including elastodynamics and Maxwell's. Analytical and physical descriptions used to explain several devices manufactured with multiferroics, including magnetometers, memory devices, motors, and antennas. Letter grading.

**250A. Foundations of Fluid Dynamics. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 150A. Corequisite: course 182B. Development and application of fundamental principles of fluid mechanics at graduate level, with emphasis on incompressible flow. Flow kinematics, basic equations, constitutive relations, exact solutions on the Navier-Stokes equations, vorticity dynamics, decomposition of flow fields, potential flow. Letter grading.

**250B. Viscous and Turbulent Flows. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 150A. Fundamental principles of fluid dynamics applied to study of fluid resistance. States of fluid motion discussed in order of advancing Reynolds number; wakes, boundary layers, instability, transition, and turbulent shear flows. Letter grading.

**250C. Compressible Flows. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 150A, 150B. Effects of compressibility in viscous and inviscid flows. Steady and unsteady inviscid subsonic and supersonic flows; method of characteristics; small disturbance theories (linearized and hypersonic); shock dynamics. Letter grading.

**250D. Computational Fluid Dynamics for Compressible Flows. (4)** Lecture, eight hours; outside study, four hours. Prerequisites: courses 150A, 150B, 182C. Introduction to useful methods for computation of aerodynamic flow fields. Coverage of potential, Euler, and Navier-Stokes equations for subsonic to hypersonic speeds. Letter grading.

**250E. Spectral Methods in Fluid Dynamics. (4)** Lecture, four hours; outside study, eight hours. Enforced prerequisites: courses 82, 182B, 182C, 250A, 250B. Introduction to basic concepts and techniques of various spectral methods applied to solving partial differential equations. Particular emphasis on techniques of solving unsteady three-dimensional Navier-Stokes equations. Topics include spectral representation of functions, discrete Fourier transform, etc. Letter grading.

**250F. Hypersonic and High-Temperature Gas Dynamics. (4)** Lecture, four hours; outside study, eight hours. Recommended prerequisite: course 250C. Molecular and chemical description of equilibrium and non-equilibrium hypersonic and high-temperature gas flows, chemical thermodynamics and statistical thermodynamics for calculation gas properties, equilibrium flows of real gases, vibrational and chemical rate

processes, nonequilibrium flows of real gases, and computational fluid dynamics methods for nonequilibrium hypersonic flows. Letter grading.

**C250G. Fluid Dynamics of Biological Systems. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 103. Mechanics of aquatic locomotion; insect and bird flight aerodynamics; pulsatile flow in circulatory system; rheology of blood; transport in microcirculation; role of fluid dynamics in arterial diseases. Concurrently scheduled with course C150G. Letter grading.

**250H. Computational Fluid Dynamics for Incompressible Flows. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 150A, 182C. Review of equations of incompressible flow, finite difference methods and other methods of spatial approximation, time-marching schemes, numerical solution of model partial differential equations, application to Navier-Stokes equations, boundary conditions. Letter grading.

**250M. Introduction to Microfluids/Nanofluids. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 150A. Introduction to fundamentals of microfluids. No-slip and slip boundary conditions. Sedimentation and diffusion in liquids. Osmotic pressure and Donnan equilibrium in fluid mixtures. Fundamentals of surface phenomena, spreading, and contact angles. Introduction to van der Waals interactions, electrical double layer, and zeta potential. Basics of non-Newtonian fluid mechanics. Letter grading.

**C250P. Aircraft Propulsion Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Prerequisites: courses 105A, 150A. Thermodynamic properties of gases, aircraft jet engine cycle analysis and component performance, component matching, advanced aircraft engine topics. Concurrently scheduled with course C150P. Letter grading.

**C250R. Rocket Propulsion Systems. (4)** Lecture, four hours; discussion, two hours; outside study, six hours. Enforced prerequisites: courses 103, 105A. Rocket propulsion concepts, including chemical rockets (liquid, gas, and solid propellants), hybrid rocket engines, electric (ion, plasma) rockets, nuclear rockets, and solar-powered vehicles. Current issues in launch vehicle technologies. Concurrently scheduled with course C150R. Letter grading.

**250S. Spectroscopy and Molecular Gas Dynamics. (4)** Lecture, four hours; outside study, eight hours. Introduction to science that governs interaction of light and matter (in gas phase). Review of key concepts of physical gas dynamics to establish microscopic or molecular perspective (non-continuum perspective) on gas properties and physical behavior. Material is structured within three subtopics of gas-phase spectroscopy: spectral line positions, spectral line intensities, and spectral line shapes. These capture spectroscopic interactions of atoms, diatomic molecules, and polyatomic molecules, and their respective rotational (THz), vibrational (IR), and electronic (UV/Vis) spectra. Presentation of absorption, emission, and scattering processes, associated optical measurement techniques. Integration of subject matter from physical sciences (quantum mechanics, statistical thermodynamics, and physical chemistry), covered at level appropriate for engineer. Letter grading.

**252A. Stability of Fluid Motion. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 150A. Mechanisms by which laminar flows can become unstable and lead to turbulence of secondary motions. Linear stability theory; thermal, centrifugal, and shear instabilities; boundary layer instability. Nonlinear aspects: sufficient criteria for stability, subcritical instabilities, supercritical states, transition to turbulence. Letter grading.

**252B. Turbulence. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 250A, 250B. Characteristics of turbulent flows, conservation and transport equations, statistical description of turbulent flows, scales of turbulent motion, simple turbulent flows, free-shear flows, wall-bounded flows, turbulence modeling, numerical simulations of turbulent flows, and turbulence control. Letter grading.

**252C. Fluid Mechanics of Combustion Systems. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 150A, 150B. Recommended: course 250C. Review of fluid mechanics and chemical thermodynamics applied to reactive systems, laminar diffusion flames, premixed laminar flames, stability, ignition, turbulent combustion, supersonic combustion. Letter grading.

**252E. Data Science for Fluid Dynamics. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 150A. Data-driven analysis, modeling, and control of fluid flows using modern linear algebra, modal analysis, reduced-order modeling, clustering, network science, and machine learning. Emphasis on extracting physical characteristics and insights from fluid flow data. Letter grading.

**252P. Plasma and Ionized Gases. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 82, 102, 150A, 182B. Neutral and charged particle motion, magnetohydrodynamics, two-fluid plasma treatments, ion and electron diffusion, gas diffusion, Child/Langmuir law, basic plasma devices, electron emission and work function, thermal distributions, vacuum and vacuum systems, space-charge, particle collisions and ionization, plasma discharges, sheaths, and electric arcs. Letter grading.

**255A. Advanced Dynamics. (4)** Lecture, four hours; outside study, eight hours. Prerequisites: courses 155, 169A. Variational principles and Lagrange equations. Kinematics and dynamics of rigid bodies; precession and nutation of spinning bodies. Letter grading.

**255B. Mathematical Methods in Dynamics. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course 255A. Concepts of stability; state-space interpretation; stability determination by simulation, linearization, and Lyapunov direct method; the Hamiltonian as a Lyapunov function; nonautonomous systems; averaging and perturbation methods of nonlinear analysis; parametric excitation and nonlinear resonance. Application to mechanical systems. Letter grading.

**M256A. Linear Elasticity. (4)** (Same as Civil Engineering M230A.) Lecture, four hours; outside study, eight hours. Prerequisite: course 156A or 166A. Linear elastostatics. Cartesian tensors; infinitesimal strain tensor; Cauchy stress tensor; strain energy; equilibrium equations; linear constitutive relations; plane elastostatic problems, holes, corners, inclusions, cracks; three-dimensional problems of Kelvin, Boussinesq, and Cerruti. Introduction to boundary integral equation method. Letter grading.

**M256B. Nonlinear Elasticity. (4)** (Same as Civil Engineering M230B.) Lecture, four hours; outside study, eight hours. Prerequisite: course M256A. Kinematics of deformation, material and spatial coordinates, deformation gradient tensor, nonlinear and linear strain tensors, strain displacement relations; balance laws, Cauchy and Piola stresses, Cauchy equations of motion, balance of energy, stored energy; constitutive relations, elasticity, hyperelasticity, thermoelasticity; linearization of field equations; solution of selected problems. Letter grading.

**M256C. Plasticity. (4)** (Same as Civil Engineering M230C.) Lecture, four hours; outside study, eight hours. Prerequisites: courses M256A, M256B. Classical rate-independent plasticity theory, yield functions, flow rules and thermodynamics. Classical rate-dependent viscoplasticity, Perzyna and Duvant/Lions types of viscoplasticity. Thermoelasticity and creep. Return mapping algorithms for plasticity and viscoplasticity. Finite element implementations. Letter grading.

**256F. Analytical Fracture Mechanics. (4)** Lecture, four hours; outside study, eight hours. Prerequisite: course M256A. Review of modern fracture mechanics, elementary stress analyses; analytical and numerical methods for calculation of crack tip stress intensity factors; engineering applications in stiffened structures, pressure vessels, plates, and shells. Letter grading.

**M257A. Elastodynamics. (4)** (Same as Earth, Planetary, and Space Sciences M224A.) Lecture, four hours; outside study, eight hours. Prerequisites: courses M256A, M256B. Equations of linear elasticity, Cauchy equation of motion, constitutive relations, boundary and initial conditions, principle of energy. Sources and

waves in unbounded isotropic, anisotropic, and dissipative solids. Half-space problems. Guided waves in layered media. Applications to dynamic fracture, non-destructive evaluation (NDE), and mechanics of earthquakes. Letter grading.

**258A. Nanomechanics and Micromechanics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course M256A. Analytical and computational modeling methods to describe mechanics of materials at scales ranging from atomistic through microstructure or transitional and up to continuum. Discussion of atomistic simulation methods (e.g., molecular dynamics, Langevin dynamics, and kinetic Monte Carlo) and their applications at nanoscale. Developments and applications of dislocation dynamics and statistical mechanics methods in areas of nanostructure and microstructure self-organization, heterogeneous plastic deformation, material instabilities, and failure phenomena. Presentation of technical applications of these emerging modeling techniques to surfaces and interfaces, grain boundaries, dislocations and defects, surface growth, quantum dots, nanotubes, nanoclusters, thin films (e.g., optical thermal barrier coatings and ultrastrong nanolayer materials), nano-identification, smart (active) materials, nanobending and micro-bending, and torsion. Letter grading.

**259A. Seminar: Advanced Topics in Fluid Mechanics. (4)** Seminar, four hours; outside study, eight hours. Advanced study of topics in fluid mechanics, with intensive student participation involving assignments in research problems leading to term paper or oral presentation (possible help from guest lecturers). Letter grading.

**259B. Seminar: Advanced Topics in Solid Mechanics. (4)** Seminar, four hours; outside study, eight hours. Advanced study in various fields of solid mechanics on topics which may vary from term to term. Topics include dynamics, elasticity, plasticity, and stability of solids. Letter grading.

**260. Current Topics in Mechanical Engineering. (2 to 4)** Seminar, two to four hours; outside study, four to eight hours. Designed for graduate mechanical and aerospace engineering students. Lectures, discussions, and student presentations and projects in areas of current interest in mechanical engineering. May be repeated for credit. S/U grading.

**261A. Energy and Computational Methods in Structural Mechanics. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 156A or 166A. Review of theory of linear elasticity and reduced structural theories (rods, plates, and shells). Calculus of variations. Virtual work. Minimum and stationary variational principles. Variational approximation methods. Weighted residual methods, weak forms. Static finite element method. Isoparametric elements, beam and plate elements. Numerical quadrature. Letter grading.

**261B. Finite Element Analysis for Solids and Structures. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 156A or M256A, or consent of instructor. Strongly recommended requisites: courses M168, M256B, 261A. Application of finite element method to classical and state-of-art modeling and design problems for solids and structures. Introduction of commercial mainstream finite element program—ABAQUS—and demonstration of how to use it in advanced way. Topics include review of finite element method, static and dynamic linear elasticity, finite deformation of hyperelastic materials, instability analysis, fracture, and implementation of user-defined subroutines in ABAQUS. Term projects using computers. Letter grading.

**262. Mechanics of Intelligent Material Systems. (4)** Lecture, four hours; outside study, eight hours. Recommended requisite: course 166C. Constitutive relations for electro-magneto-mechanical materials. Fiber-optic sensor technology. Micro/macro analysis, including classical lamination theory, shear lag theory, concentric cylinder analysis, hexagonal models, and homogenization techniques as they apply to active materials. Active systems design, inchworm, and bimorph. Letter grading.

**C263A. Kinematics of Robotic Systems. (4)** (Formerly numbered 263A.) Lecture, four hours; discussion, two hours; outside study, six hours. Recommended requisites: courses 155, 171A. Kinematical

models of serial robotic manipulators, including spatial descriptions and transformations (Euler angles, Denavit-Hartenberg/DH parameters, equivalent angle vector), frame assignment procedure, direct kinematics, inverse kinematics (geometric and algebraic approaches), mechanical design topics. Concurrently scheduled with course C163A. Letter grading.

**C263B. Dynamics of Robotic Systems. (4)** (Formerly numbered 263B.) Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course C263A. Recommended: course 255B. Dynamics models of serial and parallel robotic manipulators, including review of spatial descriptions and transformations along with direct and inverse kinematics, linear and angular velocities, Jacobian matrix (velocity and force), velocity propagation method, force propagation method, explicit formulation of Jacobian matrix, manipulator dynamics (Newton/Euler formulation, Lagrangian formulation), trajectory generation, introduction to parallel manipulators. Concurrently scheduled with course C163B. Letter grading.

**C263C. Control of Robotic Systems. (4)** (Formerly numbered 263C.) Lecture, four hours; discussion, two hours; outside study, six hours. Enforced requisite: course C263B. Sensors, actuators, and control schemes for robotic systems, including computed torque control, linear feedback control, impedance and force feedback control, and advanced control topics from nonlinear and adaptive control, hybrid control, nonholonomic systems, vision-based control, and perception. Concurrently scheduled with course C163C. Letter grading.

**263D. Advanced Topics in Robotics and Control. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course 263C. Current and advanced topics in robotics and control, including kinematics, dynamics, control, mechanical design, advanced sensors and actuators, flexible links, manipulability, redundant manipulators, human-robot interaction, teleoperation, haptics. Letter grading.

**263E. Bionic Systems Engineering. (4)** Lecture, four hours; outside study, eight hours. Requisites: courses M20, 82, or equivalent. Introduction to design principles for bionic systems, including wearable robotics and implantable devices. Neural control of movement, neuromusculoskeletal modeling, actuator design, sensor integration, robotic control, neural interfacing, surgical techniques for amputation, and fundamentals of orthopaedic implants. Letter grading.

**263F. Mechanics of Flexible Structures and Soft Robots. (4)** Lecture, four hours; outside study, eight hours. Preparation: programming experience. Applied introduction to mechanics and modeling of rods, plates, shells, and robots. Rod and shell-like structures appear across wide range of length-scale from carbon nanotubes at microscale to undersea cables at kilometer-scale. Covers algorithms for numerical simulation of such structures, inspired by recent advances in field of computer graphics and machine learning. Specifically, discrete differential geometry and neural ordinary differential equations are used for modeling of highly deformable structures. Such simulations are widely used in movies and video games for animation of hair and clothes. Final project involves design and simulation of soft robot (or any other complex structure agreed upon by instructor and student). Topics include elastic stress-strain relations for rod, plate, and shell elements; equations of equilibrium; discrete differential geometry-based numerical simulation; neural ordinary differential equations. Letter grading.

**M269A. Dynamics of Structures. (4)** (Same as Civil Engineering M237A.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisites: Civil Engineering 135A, C137, or equivalent. Principles of dynamics. Determination of normal modes and frequencies by differential and integral equation solutions. Transient and steady-state response. Emphasis on derivation and solution of governing equations using matrix formulation. Letter grading.

**269B. Advanced Dynamics of Structures. (4)** Lecture, four hours; outside study, eight hours. Requisite: course M269A. Analysis of linear and nonlinear re-

sponse of structures to dynamic loadings. Stresses and deflections in structures. Structural damping and self-induced vibrations. Letter grading.

**269D. Aeroelastic Effects in Structures. (4)** Lecture, four hours; outside study, eight hours. Requisite: course M269A. Presentation of field of aeroelasticity from unified viewpoint applicable to flight structures, suspension bridges, buildings, and other structures. Derivation of aeroelastic operators and unsteady airloads from governing variational principles. Flow induced instability and response of structural systems. Letter grading.

**M270A. Linear Dynamic Systems. (4)** (Same as Chemical Engineering M280A and Electrical and Computer Engineering M240A.) Lecture, four hours; outside study, eight hours. Requisite: course 171A or Electrical and Computer Engineering 141. State-space description of linear time-invariant (LTI) and time-varying (LTV) systems in continuous and discrete time. Linear algebra concepts such as eigenvalues and eigenvectors, singular values, Cayley/Hamilton theorem, Jordan form; solution of state equations; stability, controllability, observability, realizability, and minimality. Stabilization design via state feedback and observers; separation principle. Connections with transfer function techniques. Letter grading.

**270B. Linear Optimal Control. (4)** Lecture, four hours; outside study, eight hours. Requisite: course M270A or Electrical Engineering M240A. Existence and uniqueness of solutions to linear quadratic (LQ) optimal control problems for continuous-time and discrete-time systems, finite-time and infinite-time problems; Hamiltonian systems and optimal control; algebraic and differential Riccati equations; implications of controllability, stabilizability, observability, and detectability solutions. Letter grading.

**M270C. Optimal Control. (4)** (Same as Chemical Engineering M280C and Electrical and Computer Engineering M240C.) Lecture, four hours; outside study, eight hours. Requisite: course 270B. Applications of variational methods, Pontryagin maximum principle, Hamilton/Jacobi/Bellman equation (dynamic programming) to optimal control of dynamic systems modeled by nonlinear ordinary differential equations. Letter grading.

**C271A. Probability and Stochastic Processes in Dynamical Systems. (4)** Lecture, four hours; outside study, eight hours. Enforced requisites: courses 82, 107. Probability spaces, random variables, stochastic sequences and processes, expectation, conditional expectation, Gauss/Markov sequences, and minimum variance estimator (Kalman filter) with applications. Concurrently scheduled with course C175A. Letter grading.

**271B. Stochastic Estimation. (4)** Lecture, four hours; outside study, eight hours. Enforced requisite: course C271A. Linear and nonlinear estimation theory, orthogonal projection lemma, Bayesian filtering theory, conditional mean and risk estimators. Letter grading.

**271C. Stochastic Optimal Control. (4)** Lecture, four hours; outside study, eight hours. Requisite: course 271B. Stochastic dynamic programming, certainty equivalence principle, separation theorem, information statistics; linear-quadratic-Gaussian problem, linear-exponential-Gaussian problem. Relationship between stochastic control and robust control. Letter grading.

**271D. Seminar: Special Topics in Dynamic Systems Control. (4)** Seminar, four hours; outside study, eight hours. Seminar on current research topics in dynamic systems modeling, control, and applications. Topics selected from process control, differential games, nonlinear estimation, adaptive filtering, industrial and aerospace applications, etc. Letter grading.

**M272A. Nonlinear Dynamic Systems. (4)** (Same as Chemical Engineering M282A and Electrical and Computer Engineering M242A.) Lecture, four hours; outside study, eight hours. Requisite: course M270A or Chemical Engineering M280A or Electrical and Computer Engineering M240A. State-space techniques for studying solutions of time-invariant and time-varying nonlinear dynamic systems with emphasis on stability. Lyapunov theory (including converse theorems), invariance, center manifold theorem, input-to-state stability and small-gain theorem. Letter grading.

**273A. Robust Control System Analysis and Design.**

(4) Lecture, four hours; outside study, eight hours. Requisites: courses 171A, M270A. Graduate-level introduction to analysis and design of multivariable control systems. Multivariable loop-shaping, performance requirements, model uncertainty representations, and robustness covered in detail from frequency domain perspective. Structured singular value and its application to controller synthesis. Letter grading.

**275A. System Identification.** (4) Lecture, four hours; outside study, eight hours. Methods for identification of dynamical systems from input/output data, with emphasis on identification of discrete-time (digital) models of sampled-data systems. Coverage of conversion to continuous-time models. Models identified include transfer functions and state-space models. Discussion of applications in mechanical and aerospace engineering, including identification of flexible structures, microelectromechanical systems (MEMS) devices, and acoustic ducts. Letter grading.

**M276. Dynamic Programming.** (4) (Same as Electrical and Computer Engineering M237.) Lecture, four hours; outside study, eight hours. Recommended requisite: Electrical and Computer Engineering 232A or 236A or 236B. Introduction to mathematical analysis of sequential decision processes. Finite horizon model in both deterministic and stochastic cases. Finite-state infinite horizon model. Methods of solution. Examples from inventory theory, finance, optimal control and estimation, Markov decision processes, combinatorial optimization, communications. Letter grading.

**277. Advanced Digital Control for Mechatronic Systems.** (4) Lecture, four hours; laboratory, two hours; outside study, six hours. Requisites: courses 171B, M270A. Digital signal processing and control analysis of mechatronic systems. System inversion-based digital control algorithms and robustness properties, Youla parameterization of stabilizing controllers, pre-viewed optimal feedforward compensator, repetitive and learning control, and adaptive control. Real-time control investigation of topics to selected mechatronic systems. Letter grading.

**279. Dynamics and Control of Biological Oscillations.** (4) Lecture, four hours; outside study, eight hours. Requisites: courses 107, M270A. Analysis and design of dynamical mechanisms underlying biological control systems that generate coordinated oscillations. Topics include neuronal information processing through action potentials (spike train), central pattern generator, coupled nonlinear oscillators, optimal gaits (periodic motion) for animal locomotion, and entrainment to natural oscillations via feedback control. Letter grading.

**279B. Dynamics and Feedback in Biological and Ecological Systems.** (4) Lecture, four hours; outside study, eight hours. Requisite: course 171A or equivalent. Preparation: familiarity with differential equations (course 107 or Electrical and Computer Engineering 102). Covers mathematical modeling of biological and ecological systems using deterministic approaches. Derivation of kinetic models for control of gene expression, gene networks, cellular signaling, and viral infections. Nonlinear and linearized analysis of feedback mechanisms leading to oscillations and bistability. Modularity and robustness in interconnected networks in presence of parameter uncertainty and disturbances. Feedback engineering for setpoint regulation of cellular processes and bioproduction. Letter grading.

**M280B. Microelectromechanical Systems (MEMS) Fabrication.** (4) (Same as Bioengineering M250B and Electrical and Computer Engineering M250B.) Lecture, three hours; discussion, one hour; outside study, eight hours. Enforced requisite: course M183B. Advanced discussion of micromachining processes used to construct MEMS. Coverage of many lithographic, deposition, and etching processes, as well as their combination in process integration. Materials issues such as chemical resistance, corrosion, mechanical properties, and residual/intrinsic stress. Letter grading.

**281. Microsciences.** (4) Lecture, four hours; outside study, eight hours. Requisites: courses 102, 103, 105D. Fundamental issues of being in microscopic world and mechanical engineering of microscale de-

VICES. Topics include scale issues, surface tension, superhydrophobic surfaces and applications, and electrowetting and applications. Letter grading.

**M282. Microelectromechanical Systems (MEMS) Device Physics and Design.** (4) (Same as Bioengineering M252 and Electrical and Computer Engineering M252.) Lecture, four hours; discussion, one hour; outside study, seven hours. Introduction to MEMS design. Design methods, design rules, sensing and actuation mechanisms, microsensors, and microactuators. Designing MEMS to be produced with both foundry and nonfoundry processes. Computer-aided design for MEMS. Design project required. Letter grading.

**284. Sensors, Actuators, and Signal Processing.** (4) Lecture, four hours; outside study, eight hours. Principles and performance of micro transducers. Applications of using unique properties of micro transducers for distributed and real-time control of engineering problems. Associated signal processing requirements for these applications. Letter grading.

**285. Interfacial Phenomena.** (4) Lecture, four hours; outside study, eight hours. Requisites: courses 82, 103, 105A, 105D. Introduction to fundamental physical phenomena occurring at interfaces and application of their knowledge to engineering problems. Fundamental concepts of interfacial phenomena, including surface tension, surfactants, interfacial thermodynamics, interfacial forces, interfacial hydrodynamics, and dynamics of triple line. Presentation of various applications, including wetting, change of phase (boiling and condensation), forms and emulsions, microelectromechanical systems, and biological systems. Letter grading.

**C286. Applied Optics.** (4) Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: Physics 1C. Fundamental principles of optical systems. Geometric optics and aberration theory. Diffraction and interference. Fourier optics, beam optics. Propagation of light, Snell's law, and Huygen principle. Refraction and reflection. Plane waves, spherical waves, and image formation. Total internal reflection. Polarization, polarizers, and wave-plates. Lenses and aberrations, lens laws and formation of images, resolution and primary aberrations. Simple optical instruments, still cameras, shutters, apertures. Design of telescopes, microscope design, projection system design. Interference, Young's slit experiment and fringe visibility, Michelson interferometer, multiple-beam interference and thin film coatings. Diffraction theory, Fraunhofer and Fresnel diffraction, Fresnel zone plate. Fiber optics, waveguides and modes, fiber coupling, types of fiber: single and multimode. Concurrently scheduled with course C186. Letter grading.

**M287. Nanoscience and Technology.** (4) (Same as Electrical and Computer Engineering M257.) Lecture, four hours; outside study, eight hours. Introduction to fundamentals of nanoscale science and technology. Basic physical principles, quantum mechanics, chemical bonding and nanostructures, top-down and bottom-up (self-assembly) nanofabrication; nanocharacterization; nanomaterials, nanoelectronics, and nanobiodetection technology. Introduction to new knowledge and techniques in nano areas to understand scientific principles behind nanotechnology and inspire students to create new ideas in multidisciplinary nano areas. Letter grading.

**C287L. Nanoscale Fabrication, Characterization, and Biodetection Laboratory.** (4) Lecture, two hours; laboratory, three hours; outside study, seven hours. Multidisciplinary course that introduces laboratory techniques of nanoscale fabrication, characterization, and biodetection. Basic physical, chemical, and biological principles related to these techniques, top-down and bottom-up (self-assembly) nanofabrication, nanocharacterization (AEM, SEM, etc.), and optical and electrochemical biosensors. Students encouraged to create their own ideas in self-designed experiments. Concurrently scheduled with course C187L. Letter grading.

**C294A. Compliant Mechanism Design.** (4) (Formerly numbered 294A.) Lecture, four hours; outside study, eight hours. Requisite: linear algebra. Advanced compliant mechanism synthesis approaches, modeling techniques, and optimization tools. Fundamentals of

flexible constraint theory, principles of constraint-based design, projective geometry, screw theory kinematics, and freedom and constraint topologies. Applications: precision motion stages, general purpose flexure bearings, microstructural architectures, MEMS, optical mounts, and nanoscale positioning systems. Hands-on exercises include build-your-own flexure kits, CAD and FEA simulations, and term project. Concurrently scheduled with course C162B. Letter grading.

**295A. Radio Frequency Identification Systems: Analysis, Design, and Applications.** (4) Lecture, four hours; outside study, eight hours. Designed for graduate engineering students. Examination of emerging discipline of radio frequency identification (RFID), including basics of RFID, how RFID systems function, design and analysis of RFID systems, and applications to fields such as supply chain, manufacturing, retail, and homeland security. Letter grading.

**C296A. Mechanical Design for Power Transmission.** (4) Lecture, four hours; outside study, eight hours. Requisite: course 156A or 166A. Material selection in mechanical design. Load and stress analysis. Deflection and stiffness. Failure due to static loading. Fatigue failure. Design for safety factors and reliability. Applications of failure prevention in design of power transmission shafting. Design project involving computer-aided design (CAD) and finite element analysis (FEA) modeling. Concurrently scheduled with course C156B. Letter grading.

**296B. High-Temperature Mechanical Design.** (4) Lecture, four hours; outside study, eight hours. Requisite: course 156A or equivalent. Review of elasticity and continuum thermodynamics, multiaxial plasticity, flow rules, cyclic plasticity, viscoplasticity, creep, creep damage in cyclic loading. Damage mechanics: thermodynamics, ductile, creep, fatigue, and fatigue-creep interaction damage. Fracture mechanics: elastic and elastoplastic analysis, J-integral, brittle fracture, ductile fracture, fatigue and creep crack propagation. Applications in design of high-temperature components such as turbine blades, pressure vessels, heat exchangers, connecting rods. Design project involving CAD and FEM modeling. Letter grading.

**C297A. Rapid Prototyping and Manufacturing.** (4) Lecture, four hours; laboratory, two hours; outside study, six hours. Recommended requisite: level of knowledge in manufacturing equivalent to course 183A and CAD capability. Rapid prototyping (RP), solid freeform fabrication, or additive manufacturing has emerged as popular manufacturing technology to accelerate product creation in last two decades. Machine for layered manufacturing builds parts directly from CAD models. This novel manufacturing technology enables building of parts that have traditionally been impossible to fabricate because of their complex shapes or of variety in materials. In analogy to speed and flexibility of desktop publishing, rapid prototyping is also called desktop manufacturing, with actual three-dimensional solid objects instead of mere two-dimensional images. Methodology of rapid prototyping has also been extended into meso-/micro-/nano-scale to produce three-dimensional functional miniature components. Concurrently scheduled with course C183C. Letter grading.

**M297B. Material Processing in Manufacturing.** (4) (Same as Materials Science M297B.) Lecture, four hours; outside study, eight hours. Enforced requisite: course 183A. Thermodynamics, principles of material processing: phase equilibria and transitions, transport mechanisms of heat and mass, nucleation and growth of microstructure. Applications in casting/solidification, welding, consolidation, chemical vapor deposition, infiltration, composites. Letter grading.

**M297C. Composites Manufacturing.** (4) (Same as Materials Science M297C.) Lecture, four hours; outside study, eight hours. Requisites: course 166C, Materials Science 151. Matrix materials, fibers, fiber preforms, elements of processing, autoclave/compression molding, filament winding, pultrusion, resin transfer molding, automation, material removal and assembly, metal and ceramic matrix composites, quality assurance. Letter grading.

**298. Seminar: Engineering. (2 to 4)** Seminar, to be arranged. Limited to graduate mechanical and aerospace engineering students. Seminars may be organized in advanced technical fields. If appropriate, field trips may be arranged. May be repeated with topic change. Letter grading.

**M299A. Seminar: Systems, Dynamics, and Control Topics. (2)** (Same as Chemical Engineering M297 and Electrical and Computer Engineering M248S.) Seminar, two hours; outside study, six hours. Limited to graduate engineering students. Presentations of research topics by leading academic researchers from fields of systems, dynamics, and control. Students who work in these fields present their papers and results. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Assistant Training Seminar. (2)** Seminar, two hours; outside study, four hours. Preparation: appointment as teaching assistant in department. Seminar on communication of mechanical and aerospace engineering principles, concepts, and methods; teaching assistant preparation, organization, and presentation of material, including use of visual aids; grading, advising, and rapport with students. S/U grading.

**596. Directed Individual or Tutorial Studies. (2 to 8)** Tutorial, to be arranged. Limited to graduate mechanical and aerospace engineering students. Petition forms to request enrollment may be obtained from assistant dean, Graduate Studies. Supervised investigation of advanced technical problems. S/U grading.

**597A. Preparation for MS Comprehensive Examination. (2 to 12)** Tutorial, to be arranged. Limited to graduate mechanical and aerospace engineering students. Reading and preparation for MS comprehensive examination. S/U grading.

**597B. Preparation for PhD Preliminary Examinations. (2 to 16)** Tutorial, to be arranged. Limited to graduate mechanical and aerospace engineering students. S/U grading.

**597C. Preparation for PhD Oral Qualifying Examination. (2 to 16)** Tutorial, to be arranged. Limited to graduate mechanical and aerospace engineering students. Preparation for oral qualifying examination, including preliminary research on dissertation. S/U grading.

**598. Research for and Preparation of MS Thesis. (2 to 12)** Tutorial, to be arranged. Limited to graduate mechanical and aerospace engineering students. Supervised independent research for MS candidates, including thesis prospectus. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 16)** Tutorial, to be arranged. Limited to graduate mechanical and aerospace engineering students. Usually taken after students have been advanced to candidacy. S/U grading.

## MEDICINE

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### Medicine

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E. Dale Abel, MD, PhD, *Chair and Executive Medical Director*

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Gregory A. Brent, MD, *Senior Vice Chair, Academic Affairs*

Tisha S. Wang, MD, *Senior Vice Chair, Clinical Services*

Jodi L. Friedman, MD, *Vice Chair, Education*

-----, *Vice Chair, Research*

## Overview

The principal goal of the Department of Medicine is to educate students in the expert diagnosis and compassionate management of human illness. Building on the biochemical, physiological, and behavioral foundations of the preclinical experience, students are taught *information acquisition* through history taking, physical examination, and laboratory evaluation; *information synthesis* through achieving a differential diagnosis and evaluative plan; and *medical decision making* for continued evaluation and therapy. Students are encouraged and guided in developing a caring physician/patient relationship.

Instruction in the department is provided in all four years of medical school, with the third and fourth years constituting a continuum of clinical experience. Students become integrated into a ward team and have significant ambulatory care experiences. They apply and extend their clinical skills, medical knowledge, and judgment in the care of patients assigned to them under the immediate supervision of house officers and attending staff.

The department offers a broad range of advanced clinical clerkships in general and subspecialty ambulatory and hospital-based internal medicine at all the major affiliated centers.

For more details on the Department of **Medicine** and courses offered, see the department website.

**Medicine faculty** information is available from the department.

## Medicine

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**160C. Health Outreach and Education to At-Risk Populations. (4)** Seminar, two hours; fieldwork, six to eight hours. Requisites: courses M160A, M160B. Processes involved with designing, delivering, and assessing community health education programs, under supervision of professional staff. P/NP or letter grading.

**180. Special Topics in Medicine. (4)** Lecture, four hours; discussion, one hour. Medical topics of special interest to undergraduate students. Specific subjects may vary each term depending on particular interest of instructors and students. Topics may include East/West medicine and global medicine. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**185. Integrative East-West Medicine for Health and Wellness. (5)** Lecture, five hours. Introduction to integrative health care and wellness, particularly therapeutic approaches originating from traditional Chinese medicine. Study of theoretical underpinnings of integrative medicine and traditional Chinese medicine, management of personal well-being through experiential learning of various therapeutic modalities, and evidence-based research and clinical applications of integrative medicine. Topics include integrative East-West medicine and its role in prevention and health cultivation; herbs, diet, and nutritional supplements; pain management using acupuncture, acupressure, massage, and other self-help techniques; integrative medicine research and evidence-based modalities; chronic stress and implications on sleep, inflammation, and maintaining healthy immune system. Incorporates hands-on practice and interactive sessions. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**199. Directed Research in Medicine. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M215. Interdepartmental Course: Tropical Medicine. (2)** (Same as Pathology M215 and Pediatrics M215.) Lecture, two and one half hours. Preparation: basic courses in microbiology and parasitology of infectious diseases in School of Medicine or Public Health. Study of current knowledge about diseases prevalent in tropical areas of the world. Major emphasis on infectious diseases, with coverage of problems in nutrition and exotic noninfectious diseases. Syllabus supplements topics covered in classroom. S/U grading.

**M256. Interdisciplinary Response to Infectious Disease Emergencies: Medicine Perspective. (4)** (Same as Community Health Sciences M256, Nursing M298, and Oral Biology M256.) Lecture, three hours; discussion, one hour. Designed to instill in professional students ideas of common emergency health problems and coordinated response, with specific attention to bioterrorism. Examination of tools to help students prevent, detect, and intervene in infectious disease emergencies. Interdisciplinary sessions also attended by students in Schools of Dentistry, Nursing, and Public Health during weeks two through five. Letter grading.



**M260A-M260B. Methodology in Clinical Research I, II. (4-4)** (Same as Biomathematics M260A-M260B.) Lecture, four hours. Recommended preparation: MD, PhD, or dental degree. Requisites: Biomathematics 170A, 265A. Course M260A is requisite to M260B. Presentation of principles and practices of major disciplines underlying clinical research methodology, such as biostatistics, epidemiology, pharmacokinetics. S/U or letter grading.

**M260C. Methodology in Clinical Research III. (4)** (Same as Biomathematics M260C.) Discussion, four hours. Recommended preparation: MD, PhD, or dental degree. Presentation of principles and practices of major disciplines underlying clinical research methodology, such as biostatistics, epidemiology, pharmacokinetics. S/U or letter grading.

**M261. Responsible Conduct of Research Involving Humans. (2)** (Same as Biomathematics M261.) Lecture, two hours; discussion, two hours. Preparation: completion of one basic course in protection of human research subjects through Collaborative Institutional Training Initiative. Discussion of current issues in responsible conduct of clinical research, including reporting of research, basis for authorship, issues in genetic research, principles and practice of research on humans, conflicts of interest, Institutional Review Board (IRB), and related topics. S/U or letter grading.

**M263. Clinical Pharmacology. (2)** (Same as Biomathematics M263 and Psychiatry M263.) Lecture, two hours. Preparation: completion of professional health sciences degree (MD, DDS, DNSc, or PhD). Overview of principles of clinical pharmacology, especially as they relate to clinical and translational medicine and to advances in contemporary medicine such as targeting, gene therapy, and genomics. Letter grading.

**M270C. Advanced Modeling Methodology for Dynamic Biomedical Systems. (4)** (Same as Bioengineering M296A and Computer Science M296A.) Lecture, four hours; outside study, eight hours. Requisite: Electrical Engineering 141 or 142 or Mathematics 115A or Mechanical and Aerospace Engineering 171A. Development of dynamic systems modeling methodology for physiological, biomedical, pharmacological, chemical, and related systems. Control system, multicompartmental, noncompartmental, and input/output models, linear and nonlinear. Emphasis on model applications, limitations, and relevance in biomedical sciences and other limited data environments. Problem solving in PC laboratory. Letter grading.

**M270D. Optimal Parameter Estimation and Experiment Design for Biomedical Systems. (4)** (Same as Bioengineering M296B, Biomathematics M270, and Computer Science M296B.) Lecture, four hours; outside study, eight hours. Requisite: course M270C or Bioengineering CM286 or Biomathematics 220. Estimation methodology and model parameter estimation algorithms for fitting dynamic system models to biomedical data. Model discrimination methods. Theory and algorithms for designing optimal experiments for developing and quantifying models, with special focus on optimal sampling schedule design for kinetic models. Exploration of PC software for model building and optimal experiment design via applications in physiology and pharmacology. Letter grading.

**M270E. Advanced Topics and Research in Biomedical Systems Modeling and Computing. (4)** (Same as Bioengineering M296C and Computer Science M296C.) Lecture, four hours; outside study, eight hours. Requisite: course M270D. Research techniques and experience on special topics involving models, modeling methods, and model/computing in biological and medical sciences. Review and critique of literature. Research problem searching and formulation. Approaches to solutions. Individual MS- and PhD-level project training. Letter grading.

# MICROBIOLOGY, IMMUNOLOGY, AND MOLECULAR GENETICS

*College of Letters and Science and  
David Geffen School of Medicine*

1602 Molecular Sciences  
Box 951489

Los Angeles, CA 90095-1489

**Microbiology, Immunology, and  
Molecular Genetics**

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**Jerome A. Zack, PhD, Chair**

**Douglas L. Black, PhD, Vice Chair,  
Academic Personnel**

**Elissa A. Hallem, PhD, Vice Chair,  
Graduate Affairs**

**April D. Pyle, PhD, Vice Chair, Under-  
graduate Education**

## Faculty Roster

### Professors

Frank U. Alber, PhD

Steven J. Bensinger, VMD, PhD (*Sherie and  
Donald Morrison Professor of Immunology*)

Douglas L. Black, PhD

Peter J. Bradley, PhD

Manish J. Butte, MD, PhD (*E. Richard Stiehm  
Endowed Professor of Pediatric Allergy,  
Immunology, and Rheumatology*)

Irvin S.Y. Chen, PhD

Genhong Cheng, PhD

James S. Economou, MD, PhD (*Louis D.  
Beaumont Professor of Surgery*)

Elissa A. Hallem, PhD

Kent L. Hill, PhD

Alexander Hoffmann, PhD (*Thomas M. Asher  
Endowed Professor of Microbiology*)

Marcus A. Horwitz, MD

Patricia J. Johnson, PhD

Donald B. Kohn, MD

Aldons J. Lulis, PhD

Otoniel M. Martinez-Maza, PhD

Megan M. McEvoy, PhD

M. Carrie Miceli, PhD

Jeffery F. Miller, PhD (*Fred Kavli Professor of  
Nanosystems Sciences*)

Robert L. Modlin, MD (*Arnold W. Klein, MD  
Professor of Dermatology*)

Manuel L. Penichet, MD, PhD

April D. Pyle, PhD (*George and Nouhad Ayoub  
Professor of Life Science Innovation*)

Stephen T. Smale, PhD (*Sherie L. and Donald  
G. Morrison Professor of Molecular  
Immunology*)

Maureen A. Su, MD

Owen N. Witte, MD, (*University Professor,  
President's Professor of Developmental  
Immunology*)

Gerard C.L. Wong, PhD

Otto O. Yang, MD

Jerome A. Zack, PhD (*M. Philip Davis*

*Professor of Microbiology and Immunology*)

Z. Hong Zhou, PhD

### Professors Emeriti

Arnold J. Berk, MD (*Presidential Professor  
Emeritus of Molecular Cell Biology*)

Benjamin E. Bonavida, PhD

David A. Campbell, PhD

Asim Dasgupta, PhD

Frederick A. Eiserling, PhD

Lawrence T. Feldman, PhD

C. Fred Fox, PhD

Robert P. Gunsalus, PhD

Rafael J. Martinez, PhD

James N. Miller, PhD

Jeffrey H. Miller, PhD

Sherie L. Morrison, PhD

Debi P. Nayak, BVSc, PhD

Dan S. Ray, PhD

Larry Simpson, PhD

Ronald H. Stevens, PhD

Fuyuhiko Tamanoi, PhD

Christel H. Uittenbogaart, MD

T. Randolph Wall, PhD

Felix O. Wettstein, PhD

Bernadine J. Wisnieski, PhD

### Associate Professors

Yvonne Y. Chen, PhD

Elaine Y. Hsiao, PhD (*De Logi Professor of  
Biological Sciences*)

Beth A. Lazazzera, PhD

Lili Yang, PhD

### Assistant Professors

Anthony J. Covarrubias, PhD

Oliver I. Fregoso, PhD

Melody Man Hing Li, PhD

Theodore S. Nowicki, MD, PhD, *in Residence*

Timothy E. O'Sullivan, PhD

### Adjunct Associate Professor

Imke Schroeder, PhD

### Adjunct Assistant Professors

Andrey N. Damianov, PhD

Zulema Romero Garcia, PhD

Jing Wen, PhD

## Overview

Microbiology at UCLA is a diverse science that includes bacteriology, virology, immunology, genetics, molecular biology, and the study of single cells. The science has its roots in the fundamental human needs of health, nutrition, and environmental control, and it provides students with opportunities for study in the basic biological fields of genetics and cellular and molecular biology.

## Undergraduate Major

### Microbiology, Immunology, and Molecular Genetics BS

Undergraduate students majoring in Microbiology, Immunology, and Molecular Genetics prepare for careers in biomedical research, medicine, dentistry, or other health professions, bio-

technology and genetic engineering, industrial microbiology, agricultural or environmental sciences, public health, and law or bioethics, among others. The courses presented by the department lead to a Bachelor of Science degree and depend heavily on preparation in the biological sciences, chemistry, physics, and mathematics.

## Learning Outcomes

The Microbiology, Immunology, and Molecular Genetics major has the following learning outcomes:

- Demonstrated knowledge of key disciplinary concepts
- Address scientific questions or solve problems using quantitative, computational, and inquiry-related skills, including developing hypotheses, designing and performing experiences, analyzing data, and interpreting results
- Execution of database searches for scientific literature and bioinformatics data related to investigatory tasks
- Reading, analysis, and use of scientific papers in the development of research projects, in discussions with peers and mentors, and as evidence to substantiate conclusions in written assignments
- Effective written and oral communication skills
- Work effectively in individual and collaborative contexts
- Value research and its relevance to one's own life and society

## Entry to the Major

### Transfer Students

Transfer applicants to the Microbiology, Immunology, and Molecular Genetics major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences or 7A, 7B, and 7C; one year of calculus; one year of general chemistry with laboratory for majors; and one semester of organic chemistry with laboratory. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

Students intending to major in Microbiology, Immunology, and Molecular Genetics may seek counseling and petition to enter the major in the Student Affairs Office, 1602B Molecular Sciences.

## Requirements

### Preparation for the Major

#### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, and 14D, or 20A, 20B, 20L, 30A, 30AL, and 30B; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Statistics 13, or 31A, 31B, 32A, and Statistics 13;

Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

### The Major

Two plans are offered by the department.

#### Plan I—Research Immersion Laboratory

*Required:* Ten courses as follows: (1) Five foundation courses: Chemistry and Biochemistry 153A, 153B or Microbiology, Immunology, and Molecular Genetics 132, Life Sciences 107, Microbiology, Immunology, and Molecular Genetics 101, C185A, (2) two courses from one of the following groups: (a) Microbiology, Immunology, and Molecular Genetics 103AL and 103BL or (b) 109AL and 109BL, (3) two focus elective courses selected from Chemistry and Biochemistry 153L, Microbiology, Immunology, and Molecular Genetics 102, 105, 106, 107, 132, CM156, 158, 168, CM256, Molecular, Cell, and Developmental Biology 138, 165A, and (4) one general elective course selected from any course under item 3 above, Bioengineering 100, CM145, CM178, Biostatistics 100A, Chemistry and Biochemistry 103, 110A, M117, 136, C140, 153B, 153C, 153L, 154, 156, CM160A, 171, C172, C181, Computer Science CM121, C122, CM124, Ecology and Evolutionary Biology 121, C135, 137, 162, Epidemiology 100, Human Genetics C144, Microbiology, Immunology, and Molecular Genetics C122, 174, C185B, 191H, 198C, 199 (may be taken once), Molecular, Cell, and Developmental Biology 100, 104AL, 138, M140, C141, 143, 144, C150, 165A, 168, 172, M175A, M175B, M175C, 187AL, Neuroscience M101A, M101B, M101C, Physiological Science 121, 124, 125, 128, Statistics 100A, 100B.

#### Plan II—Advanced Independent Research

*Required:* Twelve courses as follows: (1) five foundation courses: Chemistry and Biochemistry 153A, 153B or Microbiology, Immunology, and Molecular Genetics 132, Life Sciences 107, Microbiology, Immunology, and Molecular Genetics 101, C185A, (2) Microbiology, Immunology, and Molecular Genetics 196A, 196B or Molecular, Cell, and Developmental Biology 196A, 196B, (3) Microbiology, Immunology, and Molecular Genetics 180A, 180B or Molecular, Cell, and Developmental Biology 180A, 180B, (4) two focus elective courses selected from Chemistry and Biochemistry 153L, Microbiology, Immunology, and Molecular Genetics 102, 105, 106, 107, 132, CM156, 158, 168, CM256, Molecular, Cell, and Developmental Biology 138, 165A, and (5) one general elective course selected from any course under item 3 above, Bioengineering 100, CM145, CM178, Biostatistics 100A, Chemistry and Biochemistry 103, 110A, M117, 136, C140, 153B, 153C, 156, CM160A, 171, C172, C181, Computer Science CM121, C122, CM124, Ecology and Evolutionary Biology 121, C135, 137, 162, Epidemiology 100, Human Genetics C144, Microbiology, Immunology, and Molecular Genetics 103AL, 103BL, 109AL, 109BL, C122, 174, C185B, 191H, 198C, 199, Molecular, Cell, and Developmental Biology 100, 104AL, 138, M140, C141, 143, 144, C150, 165A, 168, 172, M175A, M175B, M175C, 187AL, Neuroscience M101A,

M101B, M101C, Physiological Science 121, 124, 125, 128, Statistics 100A, 100B.

### Honors Program

The core of the program consists of Microbiology, Immunology, and Molecular Genetics 198A, 198B, and 198C research, culminating in a thesis.

## Policies

### Preparation for the Major

Each core curriculum course must be passed with a grade of C– or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving a grade of D or lower in two core curriculum courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

### The Major

Each major course must be taken for a letter grade of C– or better, and students must have a minimum overall grade-point average of 2.0 or better in the major. Students receiving a grade of D or below in two major courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

#### Plan I

No more than 4 units of course 199 or a combination of 198C and 199 may be applied toward the general electives under Plan I.

#### Plan II

No more than 4 units of course 198C or 199 may be applied toward the general electives under Plan II.

Plan II requires submission and approval of an admissions application. Detailed information may be obtained at the Student Affairs Office, 1602B Molecular Sciences.

### Honors Program

Overall grade-point averages of 3.2 and 3.5 in the preparation for the major and major respectively are required to apply for departmental honors. In addition students must have junior standing and the sponsorship of a faculty adviser from the department. If the thesis is accepted by the honors committee and students complete all major requirements with a GPA of at least 3.5, they are awarded the bachelor's degree with departmental honors. The department also offers an honors seminar course each winter quarter that is required for the honors program. For more information, contact the Student Affairs Office, 1602B Molecular Sciences.

## Graduate Major

### Microbiology, Immunology, and Molecular Genetics MS, PhD

The graduate program emphasizes the areas of molecular genetics, cell biology, immunology, cell and virus structure and morphogenesis, animal virology, general bacteriology and physiology, host/parasite relationships, medical mi-

crobiology, microbial genetics, microbial pathogenesis, and recombinant DNA research. Students are prepared for creative research careers in all of these fields. The objective of the department is to provide breadth in microbiology, immunology, and molecular genetics at the undergraduate level and depth and training in independent study and research for graduate students.

Applicants interested in studying with faculty in the department are encouraged to apply to an appropriate home area in [Graduate Programs in Bioscience](#).

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

# Microbiology, Immunology, and Molecular Genetics

## Lower-Division Courses

**5. Science of Memory and Learning. (4)** Lecture, seven hours. Nature of intelligence, overview of brain structure, study of memory systems, including memory retrieval, context of memories with emotion, sleep, and memory. Survey of metacognition and performance of learning. Offered in summer only. P/NP or letter grading.

**6. Microbiology for Nonmajors. (4)** Lecture, four hours. Not open for credit to students with credit for course 101. Designed for nonscience students; introduction to biology of microorganisms (bacteria, viruses, protozoa, algae, fungi), their significance as model systems for understanding fundamental cellular processes, and their role in human affairs. P/NP or letter grading.

**10. Medical Microbiology for Nursing Students. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 30A or 30B or Mathematics 3A or 31A. Limited to Nursing majors. Introduction to biology of microbial pathogens, their role in development of human immune response, and presentation of symptoms and disease caused by microbial infections. Letter grading.

**15. Nanoscale Microscopy Laboratory** Lecture, 26 hours; laboratory, nine hours. Recommended requisites: high school biology, chemistry, and physics. Designed as one-week summer course for high school students. Exploratory introduction to three key microscopy techniques for nanoscience research: fluorescence microscopy, scanning probe microscopy, and electron microscopy. Nanoscience is umbrella term that encompasses one diverse interdisciplinary branch of modern science research, including molecular sciences, biotechnology, material science, chemistry, biochemistry, and various fields of engineering. Offered in summer only. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor.

May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100L. Microbiology Laboratory for Professional Schools. (3)** Lecture, two hours; laboratory, four hours. Requisites: Life Sciences 3 and 4, or 7A, 7B, and 23L with grades of C- or better. Recommended corequisite: course 101. Limited to nonmajors. Experimental techniques of microbiology, with emphasis on cultivation and characterization of bacteria. Laboratory exercises include light microscopy, quantitative techniques, and identification methods. Students learn to work effectively in groups to perform experiments, record observations, and analyze results. Letter grading.

**101. Introductory Microbiology. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3 and 4, or 7A, 7B, and 23L. Historical foundations of microbiology; introduction to bacterial structure, physiology, biochemistry, genetics, and ecology. Letter grading.

**102. Introductory Virology. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, or 7A, 7B, and 23L with grades of C- or better. Biological properties of bacterial and animal viruses, replication, methods of detection, interactions with host cells and multicellular hosts. Letter grading.

**103AL. Research Immersion Laboratory in Virology. (5)** Lecture, two and one half hours; laboratory, eight hours. Requisites: course 101, Life Sciences 3, 4, and 23L, or 7A, 7B, and 23L. Course 103AL is requisite to 103BL. Limited to Microbiology, Immunology, and Molecular Genetics and Molecular, Cell, and Developmental Biology majors. Research-oriented laboratory experience designed to promote discovery of novel bacterial viruses (phages). Working in teams, students conduct research projects that incorporate techniques in microbiology, virology, and molecular biology and involve use of bioinformatics tools and computational analysis software. Emphasis on reading and understanding scientific literature as well as improving critical thinking skills such as ability to evaluate hypotheses or experimentally address scientific questions. Critical aspects of research process, including record keeping, ethics, laboratory safety and citizenry, mechanics of scientific writing, and project responsibilities and ownership. Letter grading.

**103BL. Advanced Research Analysis in Virology. (4)** Laboratory, six hours. Requisites: course 103AL, and Life Sciences 40 or Statistics 13. Limited to Microbiology, Immunology, and Molecular Genetics premajors and majors. Designed to provide students authentic, discovery-based research experience in life sciences. Investigation to be primarily computational in nature whereby students use bioinformatics or mathematical modeling software to interpret, expand, or refine datasets. Use of graphics software to prepare figures and illustrations for presentations, posters, reports, and websites (database entries). Research accomplishments discussed in weekly seminar-style meetings in which student groups create PowerPoint slides and formally present results to class. Production of team poster and final report describing entire research project required. Letter grading.

**105. Biological Microscopy. (4)** Lecture, four hours; laboratory, three hours (five weeks only). Requisite or corequisite: Physics 1C or 5B or 6C. Introduction to modern microscopy technologies used in biochemistry, medicine, microbiology, and nano research. Basic image formation principles of microscopy, methods for sample preparation, imaging, data acquisitions, and three-dimensional reconstruction and visualization. Fluoresce, confocal, and super-resolution light microscopy; transmission electron microscopy, electron tomography, and three-dimensional cryo-electron microscopy; and atomic force and other scanning probe microscopy modalities. Practical experience in research provided through five carefully designed electron microscopy laboratory modules. P/NP or letter grading.

**106. Molecular and Genetic Basis of Bacterial Infections. (4)** Lecture, three hours; discussion, one hour. Requisite: course 101. Biochemical and genetic properties of bacteria that afford potential for pathogenicity. Epidemiology and transmission of disease; chemotherapy and drug resistance. Regulation of virulence factors. Letter grading.

**107. Viral Pathogenesis. (4)** Lecture, three hours; discussion, one hour. Requisites: course 185A, Chemistry 153A. Viral pathogens that infect mammals. Viral entry into and replication in host cells. Host response and host/virus interaction. Pathogenic manifestations exhibited during viral infections. Letter grading.

**109AL. Research Immersion Laboratory in Microbiology. (5)** Lecture, three hours; laboratory, eight hours. Requisites: course 101, Life Sciences 3, 4, and 23L, or 7A, 7B, and 23L. Course 109AL is enforced requisite to 109BL. Limited to Microbiology, Immunology, and Molecular Genetics premajors and majors and Molecular, Cell, and Developmental Biology majors. Research-oriented laboratory experience designed to promote discovery of novel microorganisms. Working in teams, students conduct research projects that incorporate techniques in microbiology and molecular biology and involve use of bioinformatics tools and phylogenetics software for data analysis. Emphasis on reading and understanding scientific literature as well as improving critical thinking skills such as ability to create and evaluate hypotheses or experimentally address scientific questions. Critical aspects of research process, including record keeping, ethics, laboratory safety and citizenry, mechanics of scientific writing, and project responsibilities and ownership. Letter grading.

**109BL. Advanced Research Analysis in Microbiology. (4)** Laboratory, six hours. Requisites: course 109AL, Life Sciences 40 or Statistics 13. Limited to Microbiology, Immunology, and Molecular Genetics premajors and majors. Designed to provide students authentic, discovery-based research experience in life sciences. Investigation to be primarily computational in nature whereby students use bioinformatics or mathematical modeling software to interpret, expand, or refine datasets. Use of graphics software to prepare figures and illustrations for presentations, posters, reports, and websites (database entries). Research accomplishments discussed in weekly seminar-style meetings in which student groups create PowerPoint slides and formally present results to class. Production of team poster and final report describing entire research project required. Letter grading.

**C122. Mouse Molecular Genetics. (2)** Seminar, two hours. Requisite: Life Sciences 4, or 7A, 7B, and 7C. Designed for students doing research with mice. During past 25 years, molecular revolution has greatly increased power and scope of mouse genetics, and today mouse is primary experimental model in virtually all fields of biology and biomedicine. Seminar forum for in-depth discussion of tools and technologies of mouse genetics and their application to functional genomics, complex traits, stem cell biology, developmental biology, epigenetics, and genetic dissection of diseases. Concurrently scheduled with course C222. P/NP or letter grading.

**123. Advanced Annotation and Comparative Genomics. (4)** Lecture, two and one half hours; computer laboratory, six hours. Requisite: course 103AL or Molecular, Cell, and Developmental Biology 187AL with grade of B- or better. Participation in discovery-



based research experience, working as research team to analyze microbial genomes using bioinformatics techniques involving variety of online databases. Investigation of cellular pathways and structures as means to discover novel genes and unusual variations in classical systems. Results of high-quality annotation efforts may lead to publication in peer-reviewed science journal. Part of DOE Joint Genome Institute Undergraduate Research in Microbial Genome Annotation education program. Offered in summer only. Letter grading.

**132. Cell Biology of Nucleus. (4)** Lecture, three hours; discussion, one hour. Requisite: Life Sciences 4 or 107. Cell biology of eukaryotic nucleus, including principles of chromosome structure, transcription, RNA processing, nuclear-cytoplasmic transport, and cell cycle control. Letter grading.

**C134. Ethics and Accountability in Biomedical Research. (2)** Seminar, two hours. Designed for graduate students and undergraduates who have credit for life sciences or biomedical individual studies 199 course. Responsibilities and ethical conduct of investigators in research, data management, mentorship, grant applications, and publications. Responsibilities to peers, sponsoring institutions, and society. Conflicts of interest, disclosure, animal subject welfare, human subject protection, and areas in which investigational goals and certain societal values may conflict. Concurrently scheduled with course C234. P/NP grading.

**CM156. Human Genetics and Genomics. (5)** (Same as Molecular, Cell, and Developmental Biology CM156.) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, and 7C. Application of genetic principles in human populations, with emphasis on genomics, family studies, positional cloning, Mendelian and common diseases, cancer genetics, animal models, cytogenetics, pharmacogenetics, population genetics, and genetic counseling. Lectures and readings in literature, with focus on current questions in fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM256. Letter grading.

**158. Microbial Genomics. (4)** Lecture, three hours; discussion, one hour. Requisites: course 101, Chemistry 153A. Evolution, biodiversity, and sequencing of genomes; bacterial and viral genomes; bioenergetics; gene knockouts; genomics of antibiotic resistance; proteomics. Guest lecturers from department and related departments who discuss key papers with focus on their areas of expertise. Letter grading.

**168. Molecular Parasitology. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3 and 4, or 7A, 7B, and 23L. Survey of parasitic protozoa not only as parasites that interact with host, but also as model systems for analysis of basic biological phenomena such as gene regulation, molecular development, cell-cell interactions, molecular evolution, and novel biochemical pathways. Letter grading.

**170. Cell and Gene Therapy. (4)** Lecture, three and one half hours; discussion, one hour. Requisites: Chemistry 153A, Life Sciences 107. State-of-art study of stem cells and gene therapy, and approaches to treat congenital/genetic defects, diseases, or injuries in humans. Review of current knowledge of human stem cells and viral and non-viral gene delivery strategies, and how they can be safely evaluated in animal models of disease. Introduction to ethical and legal issues related to cell and gene therapy as well as how to translate therapies into practice including aspects of cell and gene therapy intellectual property, regulatory, and Food and Drug Administration considerations. Includes innovative mock company team pitches to venture capitalists to learn how to raise capital for their new inventions based on what they have learned. Letter grading.

**174. Advanced Topics in Molecular Parasitology. (2)** Lecture, two hours. Requisites: course 168, Life Sciences 3 and 4 or 7A, 7B, and 23L. Examination of recent advances in molecular biology of parasites and host/parasite relationship. Specific topics include parasite development, antigenic variation in trypanosomes, RNA editing, prospects for parasitic vaccines. Letter grading.

**M178. Quantitative Regulatory Biology and Signal Transduction. (4)** (Same as Computational and Systems Biology M178 and Physiological Science M178.) Lecture, three hours; laboratory, one hour. Requisites: Life Sciences 7A, 7B, 7C, 30A, 30B. Introduction to key biological regulatory circuit motifs and systems biology concepts that are critical to understanding how cellular responses are controlled. Letter grading.

**180A. Scientific Analysis and Communication I. (2)** Seminar, two hours. Enforced corequisite: course 196A or 198A. Students read and discuss scientific articles and give presentations, introducing research topics using relevant primary literature. Critical aspects of research process, including record keeping, ethics, laboratory safety and citizenry, mechanics of scientific writing, diverse approaches to research, and project responsibilities and ownership. Acquisition of in-depth and broad knowledge about student research projects, improvement of oral and written communication skills, and full appreciation of process of doing good science and becoming skilled researchers. Letter grading.

**180B. Scientific Analysis and Communication II. (2)** Seminar, two hours. Enforced requisites: course 180A, and Life Sciences 40 or Statistics 13. Enforced corequisite: course 196B or 198B. Students give presentations similar to laboratory meeting or research symposium talk in which speakers discuss project goals, methodological approaches, results, and conclusions. How to write research papers as well as prepare and present scientific posters. Production of deliverables that demonstrate research achievements and creation of sense of pride for work accomplished as skilled researchers. Letter grading.

**C185A. Immunology. (5)** Lecture, three hours; discussion, 90 minutes. Requisites: Chemistry 153A, Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, and 23L. Not open for credit to students with credit for course 261. Comprehensive study of experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cellular immune reactions. Concurrently scheduled with course C285. Letter grading.

**C185B. Advanced Immunology and Applications. (2)** Lecture, 90 minutes. Requisite: course C185A. Covers similarities and differences between host immune reactions to bacterial and viral infections, and balance required between immune and inflammatory responses. Discussion of various strategies to enhance our immune system against invasion by pathogens or cancer cells without triggering inflammatory and autoimmune diseases, including new cancer immunotherapies. Concurrently scheduled with C285B. Letter grading.

**188A. Special Courses in Microbiology, Immunology, and Molecular Genetics. (4)** Seminar, four hours. Requisites: Life Sciences 3 and 4, or 7A, 7B, and 23L. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**188B. Special Courses in Microbiology, Immunology, and Molecular Genetics. (2)** Seminar, two hours. Requisite: Life Sciences 3, or 7A, 7B, and 23L. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191H. Honors Research Seminars: Microbiology, Immunology, and Molecular Genetics. (2)** Seminar, two hours. Requisite or corequisite: course 198A or 198B or 198C. Limited to senior microbiology, immunology, and molecular genetics honors program students. Discussion of current research literature, with focus on thesis topics/areas that students are working on as part of departmental honors requirements. One-hour presentation of student thesis research and current literature associated with it required. May be repeated for credit. Letter grading.

**192. Undergraduate Practicum in Microbiology, Immunology, and Molecular Genetics. (2)** Seminar, six hours. Limited to junior/senior departmental majors. Training and supervised practicum for advanced undergraduate students. Students assist in preparation of materials and development of innovative programs under guidance of faculty members in small course settings. Consult Student Affairs Office for further information. May not be applied toward course requirements for departmental majors. May be repeated for credit. P/NP or letter grading.

**193A. Journal Club Seminars: Microbiology, Immunology, and Molecular Genetics. (1)** Seminar, one hour. Limited to undergraduate students. Discussion of readings selected from current literature in microbiology, immunology, and molecular genetics field. P/NP grading.

**193B. Journal Club Seminars: Microbiology, Immunology, and Molecular Genetics. (1)** Seminar, one hour. Limited to undergraduate students. Discussion of readings selected from current literature in microbiology, immunology, and molecular genetics. Letter grading.

**194A. Research Group Seminars: Microbiology, Immunology, and Molecular Genetics. (1)** Seminar, one hour. Designed for undergraduate students who are part of research group in department faculty laboratory. Discussion of research methods and current literature in field or of research of faculty members or students. May be repeated for credit. P/NP grading.

**194B. Research Group Seminars: UC LEADS and NIH/MARC. (2)** Seminar, two hours. Limited to students in UC LEADS and NIH/MARC programs. Analysis, review, and critique of current papers in biomedical sciences disciplines, using skills necessary for effective oral communication and effective use of software such as PowerPoint for oral presentations. May be repeated for credit. Letter grading.

**196A. Research Apprenticeship I in Microbiology, Immunology, and Molecular Genetics. (4)** Tutorial, 12 hours. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, and 23L. 3.0 premajor and/or major grade-point average, and at least one term of prior experience in same laboratory in which 196A research is to be conducted. Enforced corequisite: course 180A. Course 196A is enforced requisite to 196B. Designed for undergraduate students who are interested in pursuing inquiry-based and hypothesis-driven research experience in laboratory of departmental faculty



mentor. Guided research course to be taken in conjunction with course 180A, followed by continuation research course 196B. Technical aspects vary depending on specific laboratory; however, all students learn how to apply scientific method: propose hypothesis, identify experiments to address hypothesis, perform experiments, and analyze results. How to record information from experimental activities into laboratory notebooks and to write research proposals. Letter grading.

**196B. Research Apprenticeship II in Microbiology, Immunology, and Molecular Genetics.** (4) Tutorial, 12 hours. Enforced prerequisite: course 196A. Enforced corequisite: course 180B. Expansion of scope, increasing depth, and implementation of independence in research to be performed in same laboratory as course 196A to facilitate learning and implementation of goals stated previously. Technical aspects vary depending on specific laboratory; however, all students use scientific method learned in course 196A and continue same experimental scope proposed, but with additional degree of independence in technical and intellectual aspects of research. Letter grading.

**197. Individual Studies in Microbiology, Immunology, and Molecular Genetics.** (2 to 4) Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A-198B-198C. Honors Research in Microbiology, Immunology, and Molecular Genetics.** (4-4-4) Tutorial, 12 hours. Course 198A is requisite to 198B, which is requisite to 198C. Limited to junior/senior microbiology, immunology, and molecular genetics honors program students. Directed individual research for departmental honors; students must have faculty sponsor. Progress report must be submitted to faculty sponsor at end of each of first two terms, with honors thesis submitted at end of final term. Maximum of 8 units may be applied toward major, with balance applied toward BS degree requirements. Individual contract required. Letter grading.

**199. Directed Research in Microbiology, Immunology, and Molecular Genetics.** (4) Tutorial, 12 hours. Preparation: minimum 2.5 grade-point average in premajor and major. Supervised individual research project under guidance of departmental faculty mentor. Copy of report describing research must be filed with Student Affairs Office by end of term. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**C222. Mouse Molecular Genetics.** (2) Seminar, two hours. Requisite: Life Sciences 4, or 7A, 7B, and 7C. Designed for students doing research with mice. During past 25 years, molecular revolution has greatly increased power and scope of mouse genetics, and today mouse is primary experimental model in virtually all fields of biology and biomedicine. Seminar forum for in-depth discussion of tools and technologies of mouse genetics and their application to functional genomics, complex traits, stem cell biology, developmental biology, epigenetics, and genetic dissection of diseases. Concurrently scheduled with course C122. S/U or letter grading.

**M229. Molecular Mechanisms of Host/Pathogen Interaction.** (4) (Same as Pathology M229.) Lecture, two hours; discussion, two hours. Enforced requisites: Molecular Biology 254A through 254D. Molecular mechanisms of microbial interactions with eukaryotic host cells that result in disease or pathogen survival. Topics include pathogenesis of common viruses, bacteria, fungi, and parasites, basis of toxin-mediated cellular damage, and immune suppression of microbial tissue damage. Letter grading.

**C234. Ethics and Accountability in Biomedical Research.** (2) Seminar, two hours. Designed for graduate students and undergraduates who have credit for life sciences or biomedical individual studies 199 course. Responsibilities and ethical conduct of investigators in research, data management, mentorship, grant appli-

cations, and publications. Responsibilities to peers, sponsoring institutions, and society. Conflicts of interest, disclosure, animal subject welfare, human subject protection, and areas in which investigational goals and certain societal values may conflict. Concurrently scheduled with course C134. S/U grading.

**CM256. Human Genetics and Genomics.** (5) (Same as Molecular, Cell, and Developmental Biology CM256.) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, and 7C. Application of genetic principles in human populations, with emphasis on genomics, family studies, positional cloning, Mendelian and common diseases, cancer genetics, animal models, cytogenetics, pharmacogenetics, population genetics, and genetic counseling. Lectures and readings in literature, with focus on current questions in fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM156. Independent research project required of graduate students. Letter grading.

**261. Molecular and Cellular Immunology.** (4) Lecture, four hours. Strongly recommended requisites: Molecular Biology 254A through 254D. Limited to graduate students. Comprehensive course for graduate students and selected undergraduate students covering fundamentals and recent advances in molecular and cellular immunology. Oral presentation required. S/U or letter grading.

**262A-262B-262C. Seminars: Current Topics in Immunobiology of Cancer.** (2-2-2) Seminar, two hours. Designed for graduate students (or undergraduate students with consent of instructor). Review of recent literature in immunology, biology, and biochemistry of cancer, with emphasis on fundamental studies involving cell-mediated immunity, humoral response, tumor specific antigens, and new techniques. Discussion of reports on scientific meetings. Each course may be repeated for credit. S/U or letter grading.

**C285. Immunology.** (5) Lecture, three hours; discussion, 90 minutes. Requisites: Chemistry 153A, Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, and 23L. Not open for credit to students with credit for course 261. Comprehensive study of experimental immunobiology and immunochemistry; cellular and molecular aspects of humoral and cellular immune reactions. Concurrently scheduled with course C185A. Letter grading.

**C185B. Advanced Immunology and Applications.** (2) Lecture, 90 minutes. Preparation: one course in immunology. Covers similarities and differences between host immune reactions to bacterial and viral infections, and balance required between immune and inflammatory responses. Discussion of various strategies to enhance our immune system against invasion by pathogens or cancer cells without triggering inflammatory and autoimmune diseases, including new cancer immunotherapies. Concurrently scheduled with C185B. Letter grading.

**296. Seminar: Research Topics in Microbiology, Immunology, and Molecular Genetics.** (1 to 4) Seminar, two hours; research group meeting, one hour. Limited to departmental graduate students. Advanced study and analysis of current topics in microbiology, immunology, and molecular genetics. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**298. Current Topics in Microbiology, Immunology, and Molecular Genetics.** (2) Seminar, two hours. Presentation of student oral critiques and participation in discussions on assigned topics. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495A. Preparation for Teaching Microbiology in Higher Education I.** (2) Seminar, two hours. Designed for graduate students. Study of problems and methodologies in teaching microbiology, including workshops, seminars, apprentice teaching, and peer observation. S/U grading.

**495B. Preparation for Teaching Microbiology in Higher Education II.** (1) Seminar, one hour. Requisite or corequisite: course 495A. Designed for first-time teaching assistants and to be taken in term in which they teach. In odd weeks, discussion of developments in student classes, with instruction on digital pedagogy and evaluation of student teaching. In even weeks, participation in online discussion forum case studies. S/U grading.

**596. Directed Individual Research.** (2 to 12) Tutorial, to be arranged. S/U grading.

**598. Research for MS Thesis.** (2 to 12) Tutorial, to be arranged. S/U grading.

**599. Research for PhD Dissertation.** (2 to 12) Tutorial, to be arranged. S/U grading.

## MILITARY SCIENCE – ARMY ROTC

*College of Letters and Science*

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**Military Science – Army ROTC**  
310-825-7381, 825-7384  
[Army ROTC e-mail](#)

**Don D. Sheppard, MA, Lieutenant Colonel, Chair**

## Faculty Roster

### Professor

Don D. Sheppard, MA, *Lieutenant Colonel*

### Adjunct Assistant Professors

Christopher Z. Barra, MBA, MA, *Brigadier General*

Katie Carrigan, BS, *First Lieutenant*

Casey L. Coyle, BA, *Captain*

Michael G. Crosen, BA, *Captain*

William N. Ritch, MA, *Major*

Anthony K. Tavantzis, BA, *Captain*

## Overview

In accordance with the National Defense Act of 1920 and with the concurrence of the Regents of the University of California, a unit of the Army Senior Division Reserve Officers' Training Corps (ROTC) was established on the Los Angeles campus of in July 1920. Navy and Air Force units were established in 1938 and 1949 respectively.

This voluntary training in the Army ROTC program allows students to qualify for an officer's commission in the Army while completing their college education. The ROTC curricula are not considered academic majors, but ROTC courses may be taken as free electives and applied toward the total course requirements of a major. For students contracted in the Military Science Department, 26 units of military science credit may be applied toward the requirements for the bachelor's degree. The ROTC program is also available through UCLA Extension.

All three ROTC departments offer voluntary four- and three-year programs for first years

and sophomores. The Army and Navy/Marine Corps also offer a two-year program for current and transfer students. All have leadership laboratories that teach leadership and management skills.

All commissions are reserve commissions. Active duty obligation following commissioning varies depending on branch of service and designated career field or occupational specialty. The Army offers both active- and reserve-duty opportunities directly after commissioning.

## Scholarships

ROTC scholarships are awarded on a competitive basis to U.S. citizens regardless of parents' income. Scholarships cover full tuition or housing (on or off campus) up to \$10,000, a \$1,200 allowance for books and fees, and a tax-free monetary allowance of \$420 per month during the academic year. Applications for **four-year scholarships** may be obtained online. Completed four-year applications should be submitted by January 10 of the year preceding college matriculation. Two- and three-year scholarship applications may be obtained from the **Military Science Department** by e-mail or by calling 310-825-7381, and are considered when received.

## Army ROTC Program

Army ROTC is a program that enables students to become officers in the U.S. Army, Army Reserves, or Army National Guard while earning a college degree. The curriculum supplements students' academic majors by offering elective courses ranging from leadership and management to military law. Courses are augmented with leadership laboratories that stress practical skills such as first aid, land navigation, survival techniques, rappelling, military tactics, and scenario-driven leadership reaction courses. Non-ROTC students may enroll in many of the military science courses without enrolling in the ROTC program.

Additionally, students who decide to become Army officers can receive summer training in military parachuting (Airborne School at Fort Benning, GA), helicopter operations that include rappelling from a hovering helicopter (Air Assault School in Hawaii), and mountaineering operations (Northern Warfare School in Alaska).

Scholarships are available for two, three, and four years of academic study and are awarded on a competitive basis. Army scholarships pay for full tuition and mandatory fees or housing, up to \$10,000, and provide a stipend of \$4,200 per year and a \$1,200 book allowance. Non-scholarship, contracted ROTC cadets also receive the stipend of \$4,200 per year. Students in the program also compete for over \$50,000 in merit-based scholarships provided annually by various private organizations that support the Army ROTC program. Additionally, students may work part-time as officer trainees in local Army Reserves or National Guard units through the simultaneous membership program (SMP). Contracted students can fly free on military aircraft within the continental U.S. on a space-available basis.

Students may select a branch of the Army in which to be commissioned from 16 specialty fields, including military intelligence, aviation, signal communications, finance, logistics, nursing, and engineering. Prior to completion of the ROTC program, students may request to go on active duty or serve part-time in the Army Reserves or National Guard.

## Undergraduate Study

Students aspiring to become Army officers follow prescribed course sequences with the Military Science Department and a physical fitness program. Generally, the courses consist of one 2- to 4-unit course per term and physical fitness sessions one to three times per week, depending on the participation-level requirements.

The military science curriculum is divided into two parts: (1) the Basic Course, two years of lower-division study during which students must complete six military science courses and (2) the Advanced Course, two years of upper-division study consisting of six military science courses, one military history course, and a five-week summer camp.

Army ROTC students must satisfy the military history requirement by completing Military Science 110 or another history course approved by the chair.

Transfer students and others who were unable to enroll in the Basic Course can receive equivalent credit in several different ways (see Two-Year Program below).

Admission to the Advanced Course is limited to selected students who meet all academic and physical requirements. Students in this course receive a subsistence allowance of \$420 per month for 10 months during each of the two academic years, plus military science uniforms. After completion of the Advanced Course and graduation, students have the opportunity to be commissioned as second lieutenants in one of the Army's 16 specialty areas in either the Army National Guard, Reserves, or Active Army. Students' preferences are a major factor in determining which specialty is awarded.

Students selected for Advanced ROTC must attend a five-week leadership development and assessment course between their Military Science III and IV years. Cadets receive an allowance for travel expenses and are paid for attendance.

The active duty obligation for those students selected to enter the Reserves or National Guard is for initial training, and only for a period of several months. The active duty obligation for those students commissioned into the Active Army is three years. Students who accept ROTC scholarships and enter the Active Army serve one additional year. ROTC students wishing to obtain certain advanced degrees may be granted a delay in reporting to their initial assignment.

## Four-Year Program

Students are enrolled in the Basic Course (freshman and sophomore years) on a voluntary basis. After completion of the Basic Course and before entrance into the Advanced Course

(junior and senior years), students are required to execute a contract with the Department of the Army agreeing to complete the Advanced Course and accept a commission if offered.

## Two-Year Program

The two-year program is designed for students who receive placement credit for two years of ROTC and directly enter the Advanced Course. Placement credit may be given for completing three years of high school Junior ROTC, attending a paid ROTC Leader's Training Course, membership in the Army Reserves or National Guard, completing two years of college-level Air Force or Navy ROTC, or previous active duty military service. The Army also allows enrollment in the two-year program while students attend graduate school.

## Commissioning

Successful completion of the Advanced Course program and a bachelor's degree may lead to a commission as a second lieutenant in the Army Reserves, National Guard, or Active Army.

## Military Science

### Lower-Division Courses

**Z. Leadership Laboratory. (No credit)** Laboratory, three hours (lower-division cadets) or four hours (upper-division cadets). All cadets must be concurrently enrolled in a military science course; upper-division cadets must also be under a contracted obligation with department. Designed to allow cadets to apply leadership techniques and military skills taught in classroom and to develop their confidence as future military officers. No grading.

**11. Foundations of Officership. (2)** Lecture, one hour. Introduction to issues and competencies that are central to commissioned officer's responsibilities. Framework established to understand officership, leadership, military customs, briefings, and life skills such as physical fitness, nutrition, and time management. P/NP or letter grading.

**12. Basic Military Leadership. (2)** Lecture, one hour. Requisite: course 11. Introduction to fundamentals of leadership, Army leadership values, ethics, and counseling techniques. Foundation of basic leadership fundamentals central to commissioned officer's responsibilities established. P/NP or letter grading.

**13. Leadership Development. (2)** Lecture, one hour. Requisite: course 12. Introduction to military problem solving, methodology students can use in their daily lives. Experiential exercises in goal setting and military writing style. Broad overview of life in Army. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**21. Individual Leadership Development. (3)** Lecture, two hours. Introduction to various individual leadership personality types, in combined lecture, discussion, and experiential learning, to assist students in development of their own individual leadership style. Additional emphasis on military factors and principles of leadership, goal setting, basic communication, and consideration of others. P/NP or letter grading.

**22. Leadership Development and Military Planning. (3)** Lecture, two hours. Requisite: course 21. Discussion of various methods of communication, planning, and decision making, through combined lecture, discussion, and experiential learning, with focus on written communication and group communication es-

sential for leadership development. Introduction to and application of military planning process in developing operations orders. P/NP or letter grading.

**23. Subordinate Development and Army Organization. (3)** Lecture, two hours. Requisite: course 22. Discussion/application of team-building techniques and subordinate development, through combined lecture, discussion, and experiential learning, with additional focus on commissioned officer, branches, and Army organization. Application of counseling techniques, motivation, and consideration of ethics and values for modern leaders. P/NP or letter grading.

## Upper-Division Courses

**110. U.S. Military History. (3)** Lecture, three hours; discussion, one hour. Survey of American military history from 1860 to the present. Causes of war, strategy, tactics, and technological developments set against economic, political, and diplomatic concerns. Impact of warfare on society.

**131. Tactical Planning and Analysis. (4)** Lecture, three hours; laboratory, four hours. Introduction to leadership development process used to evaluate military leadership performance. Examination of how to conduct individual and small unit training as well as introduction to basic principles of tactics. Emphasis on study of reasoning skills, troop leading procedures, and military orders process. P/NP or letter grading.

**132. Army Officership and Communication. (4)** Lecture, three hours; laboratory, four hours. Examination of officership that culminates in detailed case study. Interpersonal communication, with focus on general communication theory as well as written and spoken communication skills. Presentation of information briefing to receive feedback from both instructor and fellow students. P/NP or letter grading.

**133. Leadership and Problem Solving. (4)** Lecture, three hours; laboratory, four hours. Examination of role communications, values, and ethics play in effective leadership, including ethical decision making, consideration of others, transactional and transformational leadership, and survey of Army leadership doctrine. Emphasis on improving oral and written communication abilities and leadership development and assessment. P/NP or letter grading.

**141. Leadership and Management. (4)** Lecture, three hours; laboratory, four hours. Interactive course to develop student proficiency in planning and executing complex training operations. Counseling techniques and development of skills needed to lead various organizations. Exploration of training management, leadership skills, and developmental counseling techniques. P/NP or letter grading.

**142. Leadership, Ethics, and Military Law. (4)** Lecture, three hours; laboratory, four hours. Interactive course to enhance student understanding of organizational culture, leadership, and ethics. Understanding and enhancement of leader-member relations, assessment of organizational culture and ethical climate, and how to effect change in organizations. Exploration of foundations of military law and law of war. P/NP or letter grading.

**143. Officership: Professional Military Leadership. (4)** Lecture, three hours; laboratory, four hours. Capstone interactive leadership course to prepare students for challenges of being commissioned officers in U.S. Army by discussing various leadership challenges and case studies. Study of military units, with specific emphasis on joint operations involving Army, Navy, Air Force, and Marine Corps assets, military operations other than war, and global war on terror. Other topics include personnel administration, maintenance management, and financial planning. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**197. Individual Studies in Military Science. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## MOLECULAR AND MEDICAL PHARMACOLOGY

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**Molecular and Medical Pharmacology**

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Johannes Czernin, MD, *Vice Chair, Ahmanson Translational Imaging Division*

R. Michael van Dam, PhD, *Vice Chair, Crump Institute*

Lily Wu, MD, PhD *Vice Chair, Equity, Diversity, and Inclusion*

Ting-Ting Wu, PhD, *Vice Chair, Education*

## Faculty Roster

### Professors

Steven J. Bensinger, VMD, PhD (*Sherie and Donald Morrison Professor of Immunology*)

Dale E. Bredesen, MD, *in Residence*

Samson A. Chow, PhD

Timothy F. Cloughesy, MD

Johannes Czernin, MD

Magnus Dahlbom, PhD, *in Residence*

Timothy R. Donahue, MD (*Garry Shandling Professor of Pancreatic Surgery*)

Steven M. Dubinett, MD

James S. Economou, MD, PhD (*Louis D. Beaumont Professor of Surgery*)

Frederick (Fritz) C. Eilber, MD

Thomas G. Graeber, PhD

Ming Guo, MD, PhD (*Laurie and Steven C. Gordon Professor of Neurosciences*)

Arion F. Hadjioannou, PhD

Jing Huang, PhD

Michael E. Jung, PhD (*Walter and Shirley Wang Endowed Professor of Medicinal Drug Discovery*)

Daniel L. Kaufman, PhD

Donald B. Kohn, MD

Harley I. Kornblum, MD, PhD, *in Residence*

Paul A. Krogstad, MD, PhD

Raphael D. Levine, PhD

Linda M. Liau, MD, MBA, PhD (*W. Eugene Stern Professor of Neurosurgery*)

Gerald S. Lipshutz, MD, *in Residence* (*Joan S. and Ralph N. Goldwyn Endowed Professor of Immunobiology and Transplantation Research*)

Roger S. Lo, MD, PhD

Edythe D. London, PhD, *in Residence*

(*Thomas P. and Katherine K. Pike Professor of Addictive Studies*)

John C. Mazziotta, MD, PhD

Robert M. Prins, PhD

Caius G. Radu, MD

Srinivasa T. Reddy, PhD, *in Residence*

Antoni Ribas, MD

Orian Shirihai, MD, PhD

Desmond J. Smith, MD, PhD

Hsian-Rong Tseng, PhD

R. Michael van Dam, PhD

Owen N. Witte, MD (*University Professor, President's Professor of Developmental Immunology*)

Lily Wu, MD, PhD

Xia Yang, PhD

### Professors Emeriti

Jorge R. Barrio, PhD

Arthur K. Cho, PhD

Cameron B. Gundersen, PhD

Sherrel G. Howard, PhD

Sung-Cheng (Henry) Huang, DSc

Louis J. Ignarro, PhD (*Nobel laureate, Jerome J. Belzer Professor Emeritus of Medical Research*)

William P. Melega, PhD

Richard W. Olsen, PhD

Nagichettiar Satyamurthy, PhD

Heinrich R. Schelbert, MD, PhD

Ren Sun, PhD

Anna M. Wu, PhD

### Associate Professors

Vatche G. Agopian, MD, *in Residence*

Heather R. Christofk, PhD

Peter M. Clark, PhD

Huiying Li, PhD

Jennifer M. Murphy, PhD

David A. Nathanson, PhD

S. Saman Sadeghi, PhD, *in Residence*

Tanya I. Stoyanova, PhD

Ting-Ting Wu, PhD, *in Residence*

### Assistant Professors

Ajit S. Divakaruni, PhD

Tikvah K. Hayes, PhD

Oluwatayo Ikotun, PhD

Tara TeSlaa, PhD

Hans David S. Ulmert, MD, PhD, *in Residence*

### Adjunct Professors

Vaithilingara Arumugaswami, PhD

Robert D. Damoiseaux, PhD

### Adjunct Associate Professors

Linsey Stiles, PhD



Joy A. Umbach, PhD  
Shaojun S. Zhu, MS

### Adjunct Assistant Professors

Evan R. Abt, PhD  
Giuseppe Carlucci, PhD  
Thuc M. Le, PhD  
Christine E. Mona, PhD  
Shili Xu, PhD  
Yazhen Zhu, MD, PhD

## Overview

The Department of Molecular and Medical Pharmacology offers an opportunity for gifted students to work with accomplished faculty members toward making novel discoveries in basic and clinical research.

Departmental research interests span a broad range of studies by integrating biological, physical, engineering, and medical sciences to explore mechanisms of disease in biological systems from *in silico* through a single cell to the whole organism level, while encompassing patient studies. Faculty members strive to understand basic biological systems and disease states and, where appropriate, to use these observations to develop both new molecular diagnostic technologies and new molecular therapeutics.

## Graduate Study

The department also offers two MD/PhD programs concurrently with the Geffen School of Medicine. One is the **Medical Scientist Training Program** (MSTP) in which candidates are medical students that have been accepted into MSTP by the School of Medicine in order to qualify. The second is the **Specialty Training and Advanced Research** (STAR) program in which candidates are post-MD house-staff (interns, residents, or fellows) who have been accepted into the STAR Program by its selection committee in order to qualify.

The department, together with the Division of Laboratory Animal Medicine, offers PhD or postdoctoral training combined with residency training for veterinarians (with DVM or DVM/PhD degrees) in the Veterinary Investigator in Scientific Training and Advancement (VISTA) program.

Note: There is no degree program in pharmacy at UCLA.

## Institutes and Centers

With the department as home to the Crump Institute for Molecular Imaging; and the Ahmanson Translational Imaging Division—with its nuclear medicine and positron emission tomography (PET) imaging research and clinical service—students have access to state-of-the-art science and technology, and the opportunity to make a direct impact on patient care. In addition, the department is home to the Business of Science Center. This program supplies education, experience, and industry mentorship to graduate students in the department and in other academic programs to prepare them for professional careers.

## Graduate Major

### Molecular and Medical Pharmacology MS, PhD

The Department of Molecular and Medical Pharmacology offers Master of Science (MS) and Doctor of Philosophy (PhD) degrees in Molecular and Medical Pharmacology, but does not admit applicants who seek only an MS degree.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Molecular and Medical Pharmacology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**194. Group Seminars and Discussions: Cross-Disciplinary Scholars in Science and Technology Project. (4)** Seminar, two hours; discussion, two hours. Limited to Cross-Disciplinary Scholars in Science and Technology (CSST) students. Communication and collaboration skills, specifically in interdisciplinary settings and introduction to research project design and proposal process. Students submit written CSST project proposal and give oral presentations of scientific proposals. May be repeated for credit. Letter grading.

**199. Directed Research in Molecular and Medical Pharmacology. (2 to 8)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Special studies in pharmacology, including either reading assignments or laboratory work or both, designed for proper training of students. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

### Graduate Courses

**200. Introduction to Laboratory Research. (8)** Laboratory, eight to 20 hours. Individual projects in laboratory research for beginning graduate students. At end of each term students submit to their supervisor reports covering research performed. Pharmacology graduate students must take this course three times during their first two years in residence. Letter grading.

**M205A. Introduction to Chemistry of Biology. (4)** (Same as Chemistry CM205A.) Lecture, three hours; discussion, one hour. Introduction to chemical biology. Topics include computational chemical biology, utility of synthesis in biochemical research, peptidomi-

metics, designed reagents for cellular imaging, natural product biosynthesis, protein engineering and directed evolution, cell biology of metal ions, imaging metal ions in cells, metal-containing drugs. Letter grading.

**M205B. Issues on Chemistry/Biology Interface. (2)** (Same as Chemistry M205B.) Seminar, one hour. Requirement: course M205A. Selected talks and papers presented by training faculty on solving problems and utilizing tools in chemistry and molecular biology on chemistry/biology interface (CBI). S/U grading.

**237. Research Frontiers in Cellular and Molecular Pharmacology. (6)** Lecture, six hours; laboratory, five hours total. Detailed examination of principles of pharmacology and mechanisms of drug action at organismal, tissue, cellular, and molecular levels, with emphasis on receptors, receptor/effector coupling, neurotransmitters, cardiovascular pharmacology, autonomic and central nervous system pharmacology. Letter grading.

**M248. Introduction to Molecular Imaging. (4)** (Same as Bioengineering M248 and Physics and Biology in Medicine M248.) Lecture, three hours; laboratory, one hour; outside study, seven hours. Exploration of role of molecular imaging in modern biology and medicine, including imaging physics, instrumentation, image processing, and applications of imaging for range of modalities. Practical experience provided through series of imaging laboratories. Letter grading.

**251. Seminar: Pharmacology. (2)** Seminar, two hours. Required of all first- and second-year students. Presentation and discussion of graduate student research progress. Letter grading.

**M257. Introduction to Toxicology. (4)** (Same as Pathology M257.) Requisite: course M241. Biochemical and systemic toxicology, basic mechanisms of toxicology, and interaction of toxic agents with specific organ systems. S/U or letter grading.

**M258. Pathologic Changes in Toxicology. (4)** (Same as Pathology M258.) Designed to give students experience in learning normal histology of tissues which are major targets of toxin and the range of pathologic changes that occur in these tissues (liver, bladder, lung, kidney, nervous system, and vascular system). S/U or letter grading.

**286. Business of Science: Exploring Entrepreneurship Seminar. (1)** Seminar, one hour. Limited to graduate students. Further exploration of topics discussed in course 287, allowing students to interact with speakers and bring their individual concerns to table. Past and present students encouraged to enroll. S/U grading.

**287. Business of Science. (2)** Lecture, two hours. Designed for graduate students. (undergraduate students may enroll with consent of instructor). Introduction to principles of business and entrepreneurship in technology sectors. Basic business skills taught to effectively perform in commercial environment and within academic environment. Application of course material by performing feasibility studies that have potential to receive funding and become actual companies. Exploration of entrepreneurship, particularly formation and operation of new business ventures. Presentations by and questioning of successful technology entrepreneurs, identifying and evaluating new venture opportunities, development of financing, and entry and exit strategies. S/U or letter grading.

**288. Gene Therapy. (4)** Lecture, three hours; discussion, one hour. Introduction to basic concepts of gene therapy, wherein treatment of human disease is based on transfer of genetic material into an individual. Discussion of molecular basis of disease, gene delivery vectors, and animal models. Letter grading.

**291. Special Topics in Pharmacology. (4)** Lecture, four hours. Examination in depth of topics of current importance in pharmacology. Emphasis on recent contributions of special interest to advanced PhD candidates and faculty. Letter grading.

**292. Research Projects, Proposals, and Presentations. (6)** Lecture, four hours; discussion, four hours. Limited to departmental majors. Introduction to format and requirements of research proposals, so students can critically read primary papers and give formal scientific presentations, ask new questions, formulate



new hypotheses, and construct research projects, understand balance of importance, novelty, and feasibility, and develop ability to think independently, creatively, and comprehensively. Letter grading.

**596. Directed Individual Research in Pharmacology. (4 to 12)** Tutorial, to be arranged. S/U or letter grading.

**599. Research for and Preparation of PhD Dissertation. (4 to 12)** Tutorial, to be arranged. S/U grading.

## MOLECULAR BIOLOGY

*Interdepartmental Program  
College of Letters and Science*

535 Boyer Hall  
Box 951570  
Los Angeles, CA 90095-1570

**Molecular Biology**

310-267-5209

**Program e-mail**

Hilary A. Collier, PhD, *Chair*

### Faculty Committee

Hilary A. Collier, PhD (*Molecular, Cell, and Developmental Biology*)

Feng Guo, PhD (*Biological Chemistry*)

Elissa A. Hallem, PhD (*Microbiology, Immunology, and Molecular Genetics*)

Alvaro Sagasti, PhD (*Molecular, Cell, and Developmental Biology*)

Thomas A. Vallim, PhD (*Biological Chemistry, Medicine-Cardiology*)

### Overview

The Doctor of Philosophy (PhD) in Molecular Biology is offered under the supervision of an interdepartmental committee. The **Molecular Biology Institute** serves this committee and the various departments concerned in support of faculty research and teaching associated with the PhD program. Staff members are from participating departments and from the Molecular Biology Institute. Areas for study include cell biology, developmental biology and neurobiology, nucleic acid biochemistry, gene regulation, immunobiology, microbiology/virology and pathogenesis, molecular evolution and paleobiology, oncogenes and signal transduction, plant molecular biology, protein and enzyme structure and function, genomics, bioinformatics, and structural biology.

## Graduate Major

### Molecular Biology MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Molecular Biology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Graduate Courses

**M202. Advanced Topics in Cryogenic Electron Microscopy. (3)** (Same as Biological Chemistry M202.) Lecture, two hours; discussion, one hour. Students master advanced topics in membrane protein biology, and learn both theory and practice of cryogenic electron microscopy (cryo-EM) as emerging technology in structural biology. Cryo-EM methodologies covered include cryotomography, single particle reconstruction, electron crystallography, and microcrystal electron diffraction. Letter grading.

**235. Rigor and Reproducibility. (2)** Lecture, one hour; discussion, one hour. Two cornerstones of science advancement are rigor in designing and performing scientific research and ability to reproduce biomedical research findings. Applications of rigor ensures robust and unbiased experimental design, methodology, analysis, interpretation, and reporting of results. When results can be reproduced by multiple scientists, it validates original results and readiness to progress to next phase of research. Scientific rigor is strict application of scientific method to ensure unbiased and well-controlled experimental design, methodology, analysis, interpretation, and reporting of results. Covers literature and videos on rigor and reproducibility in biomedical research. Discussion of issues raised by lecture, or case-studies, with training program faculty. Students learn that reproducibility is common problem in biomedical research and how to improve it. S/U grading.

**252. Writing for Science (1)** Seminar, one hour. Corequisite: Biological Chemistry 251A or 251B or 251C. Limited to first-year Molecular Biology PhD students. Development of specific skills in scientific writing within context of one advanced course on mechanics of gene transcription. Letter grading.

**254A. Concepts in Molecular Biosciences. (3)** Lecture, three hours; discussion, two hours. Limited to human genetics and molecular biology graduate students. Five-week course covering four basic experimental approaches of biochemistry and molecular biology in context of various specific topics, including (1) structural biology, with protein and nucleic acid structure and molecular recognition, (2) use of cell-free and purified in vitro systems to dissect reaction mechanisms, (3) biochemical approaches to dissecting complex reactions/pathways in cells, and (4) enzymology and protein chemistry. Letter grading.

**254B. Concepts in Molecular Biosciences. (3)** Five-week course. Lecture, three hours; discussion, two hours. Enforced prerequisite: course 254A. Important biological problems that have been genetically analyzed in different organisms or small number of related problems. Major genetic approaches used in relevant organisms, including both forward and reverse genetic approaches, genetic interactions between genes (genetic enhancers and suppressors), transgenic technology, and systematic genomic strategies. Letter grading.

**254C. Concepts in Molecular Biosciences. (3)** Five-week course. Lecture, three hours; discussion, two hours. Enforced prerequisites: courses 254A, 254B. Molecular mechanisms underlying complex problems in cell biology. Experimental approaches used to define mechanisms involved in protein targeting, cell struc-

ture and subcellular organization, cell communication, and intracellular signaling. Analysis of pathways that connect these cellular processes. Letter grading.

**254D. Concepts in Molecular Biosciences. (3)** Five-week course. Lecture, three hours; discussion, two hours. Enforced prerequisites: courses 254A, 254B, 254C. Application of biochemical, molecular biological, genetic, and cell biological approaches to understand specialized topics in life and biomedical sciences, including developmental disease, stem cell biology, synaptic transmission in nervous system, cancer, and heart disease. Letter grading.

**255. Scientific Writing. (3)** Lecture, two hours; discussion, one hour. Limited to first-year Molecular Biology PhD students. Improvement of academic literacy through development of specific skills in scientific writing. Review of principles of effective writing using practical examples and exercises. Topics include principles of good writing, tricks for writing faster and with less anxiety, format of scientific manuscripts, art of editing, and issues in publication and peer review. Letter grading.

**298. Current Topics in Molecular Biology. (2)** Student presentation/seminar, two hours. Students present oral critiques and participate in discussions on assigned topics. S/U grading.

**300. Entering Mentoring Training Program. (1)** Seminar/discussion, 90 minutes. Limited to 25 graduate students. Offers formal training on effective mentoring of undergraduate students in science laboratories. Priority given to those who either have prior experience as mentor or are currently mentoring undergraduates; however, all are encouraged. Exploration of mentoring strategies through lecture, collaborative learning, and case studies. Topics include maintaining effective communication, aligning expectations, addressing equity and inclusion, fostering independence, cultivating ethical behavior, and articulating mentoring philosophy. S/U grading.

**497. Career Readiness Inside and Outside Academy. (2)** Seminar, 90 minutes. Limited to 25 graduate students. Preparation for and exploration of career options inside and beyond academia. Performance of targeted career research, practicing professional conduct and communication, and exploration of nuances of diverse workplaces. S/U grading.

**596. Directed Individual Studies. (2 to 12)** Tutorial, to be arranged. Directed individual research or study. May be repeated for maximum of 12 units. S/U grading.

**599. PhD Dissertation Research and Writing. (2 to 12)** Tutorial, to be arranged. Directed individual studies for students who have advanced to candidacy. May be repeated for maximum of 12 units. S/U grading.

# MOLECULAR, CELL, AND DEVELOPMENTAL BIOLOGY

College of Letters and Science

128 Hershey Hall  
Box 957246  
Los Angeles, CA 90095-7246

**Molecular, Cell, and Developmental  
Biology**

310-825-7109

**Department e-mail**

Jeffrey A. Long, PhD, *Chair*

## Faculty Roster

### Professors

John S. Adams, MD  
Utpal Banerjee, PhD (*Irving and Jean Stone  
Professor*)  
Jau-Nian Chen, PhD  
Amander T. Clark, PhD  
Daniel H. Cohn, PhD  
Hilary A. Collier, PhD  
Arjun Deb, MD  
Robert B. Goldberg, PhD  
Volker Hartenstein, PhD  
Ann M. Hirsch, PhD  
Steven E. Jacobsen, PhD  
Tracy L. Johnson, PhD  
Jeffrey A. Long, PhD  
William E. Lowry, PhD  
Karen M. Lyons, PhD  
Hanna K.A. Mikkola, MD, PhD  
Atsushi Nakano, MD, PhD  
Matteo Pellegrini, PhD  
Thomas A. Rando, MD, PhD  
Alvaro Sagasti, PhD  
Karen E. Sears, PhD

### Professors Emeriti

William R. Clark, PhD  
John H. Fessler, PhD  
Harumi Kasamatsu, PhD  
James A. Lake, PhD  
Frank A. Laski, PhD  
Chentao Lin, PhD  
Shuo Lin, PhD  
John R. Merriam, PhD  
Paul H. O'Lague, PhD  
Winston A. Salsler, PhD  
Elaine M. Tobin, PhD

### Associate Professors

Siobhan A. Braybrook, PhD  
Andrew S. Goldstein, PhD

### Assistant Professors

Amjad Askary, PhD  
Jesse R. Zamudio, PhD

### Lecturers

Katie J. Gallagher, PhD  
Pei-Yun Lee, PhD

### Adjunct Professors

M. Luisa Iruela-Arispe, PhD  
D. Leanne Jones, PhD

### Adjunct Assistant Professor

Ira E. Clark, PhD

## Overview

The revolution in modern biology that began with the elucidation of the structure of DNA by Watson and Crick in the 1950s has had a profound effect not only on biological research, but on the way biology is taught as a subject. The field of biology spawned by this discovery, generally called molecular biology, has provided an entirely new framework within which to approach questions in cell and developmental biology. The specializations, both technical and conceptual, demanded by this field have led to the growth of molecular biology and its related disciplines into an essentially separate branch of scientific inquiry.

Students who complete the requirements for the Bachelor of Science (BS) degree in the Department of Molecular, Cell, and Developmental Biology are exceptionally well prepared to pursue careers in cellular and subcellular biological research, biomedical research, or medicine or allied health fields. The degree combines essential background studies in mathematics, chemistry, and physics with a general introduction to all of the biological subjects, as well as in-depth exposure to key topics in molecular, cell, and developmental biology. The PhD degree offers opportunity for advanced concentrated study and requires independent and innovative research that ultimately results in publishable dissertation materials.

## Undergraduate Major

### Molecular, Cell, and Developmental Biology BS

The Bachelor of Science degree in Molecular, Cell, and Developmental Biology (MCDB) is designed especially for students who intend to go on to postgraduate work in biology or medicine and for students aiming for entry-level positions in biotechnology-related fields. Students are exposed to basic biological and molecular concepts underlying recent technical advances in molecular, cell, and developmental biology of animals and plants. Areas of emphasis include cell biology, immunology, molecular biology, plant biology, developmental biology, and neurobiology, among others.

### Learning Outcomes

The Molecular, Cell, and Developmental Biology major has the following learning outcomes:

- Broad knowledge of the fundamental tenets of molecular, cell, and developmental processes
- Through use of the scientific method, demonstrated ability to test questions and solve problems using quantitative and inquiry-related skills

- Demonstrated ability to ask questions about primary scientific literature within the discipline
- Demonstrated analytical skills to evaluate primary scientific literature within the discipline
- Effective written and oral communication of laboratory findings
- Demonstrated appropriate awareness of issues associated with responsible conduct of research

## Entry to the Major

### Transfer Students

Transfer applicants to the Molecular, Cell, and Developmental Biology major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, and one semester of organic chemistry with laboratory. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

#### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, and 14D, or 20A, 20B, 20L, 30A, 30AL, and 30B; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

### The Major

*Required Courses:* Chemistry and Biochemistry 153A, Life Sciences 107, Molecular, Cell, and Developmental Biology 138, 144, 165A, and one laboratory course from Molecular, Cell, and Developmental Biology 104AL, 150AL, 187AL, or 196B. Students completing the Biomedical Research minor may satisfy the laboratory requirement with Molecular, Cell, and Developmental Biology 198C.

*Electives:* A total of 20 upper-division elective units must be completed. At least 10 units must be taken from molecular, cell, and developmental biology (except 100, 104AL, 138, 144, 150AL, 165A, 187AL, 192A, 192B, 193, 194A, 194B, or 199), Chemistry and Biochemistry C100, 153C, 153L, C159, CM160A, Computer Science CM124, CM186, Microbiology, Immunology, and Molecular Genetics 100L, 101, 102, 105, 158, 168, 174, C185A, Physiological Science 121, 125, or 174, of which at least 5 units must be molecular, cell, and developmental biology courses. The remaining 10 units may be taken from the above courses or from Biostatistics 100A or Statistics 100A, Ecology and Evolutionary Biology 110, 121, 162, Human Genetics C144, or Physiological Science 166.

## Honors Program

The core of the program consists of at least one approved undergraduate seminar course from Molecular, Cell, and Developmental Biology 145, 180A, 180B, 191, Biomedical Research 193H, or 194H, and three research courses (12 units minimum) from Molecular, Cell, and Developmental Biology 198A, 198B, and 198C, culminating in a thesis. Biomedical Research 193H and 194H are not accepted as electives for the major.

## Computing Specialization

Majors in Molecular, Cell, and Developmental Biology may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the major, (2) completing Program in Computing 10A, 10B, 10C, 16A, and Life Sciences 40 or Statistics 13, and (3) completing one course from Computer Science CM124, CM186, Chemistry and Biochemistry C100, CM160A, Molecular, Cell, and Developmental Biology 187AL, or Physiological Science 125. A grade of C or better is required in each course, with a combined grade-point average in the specialization of at least 2.0. Students must petition for admission to the program and are advised to do so after completing Program in Computing 10B (petitions should be filed in the Student Affairs Office). Students graduate with a bachelor's degree in their major and a specialization in Computing.

## Policies

### Preparation for the Major

Each core curriculum course must be passed with a grade of C– or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving grades below C– in two core curriculum courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

### The Major

Credit for a maximum of two upper-division developmental biology courses from Molecular, Cell, and Developmental Biology 138, C141, and 143 may be applied toward the major.

A maximum of 4 units of approved seminar course credit may be applied toward the electives requirement. A maximum of 12 units of upper-division independent research courses from Molecular, Cell, and Developmental Biology 196A and 196B, 198A through 198D or 199A through 199D may be applied toward the major. Credit for 199 courses from other departments may not be applied to the major requirements.

Any single course may be applied toward only one category of the major, and must be taken for a letter grade.

Students must receive a C or better grade in each required core course (Chemistry and Biochemistry 153A, Life Sciences 107, Molecular, Cell, and Developmental Biology 138, 144, 165A), and must achieve a minimum overall grade-point average of 2.0 in the major. Students receiving grades below C in two required core courses, either in separate courses or rep-

etitions of the same course, are subject to dismissal from the major.

## Honors Program

### Admission

The honors program provides exceptional Molecular, Cell, and Developmental Biology majors with the opportunity to do research culminating in an honors thesis. Junior and senior majors who have completed all university-level coursework, including all preparation courses and requirements for the major with an overall grade-point average of 3.0 or better and a 3.5 GPA or better in the required major courses, may apply for admission to the honors program. Students must have the sponsorship of an approved faculty adviser.

For more information, students should contact the Student Affairs Office, 128 Hershey Hall, early in their educational planning.

### Requirements

To qualify for graduation with honors, students must satisfactorily complete all requirements for the honors program and the major and obtain at least an overall 3.0 grade-point average and a 3.5 GPA or better in coursework required for the major. On recommendation by the faculty sponsor and with approval of the thesis by the departmental honors committee, students are awarded no honors or departmental honors.

## Graduate Majors

### Molecular, Cell, and Developmental Biology MS

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Molecular, Cell, and Developmental Biology CPhil, PhD

Applicants interested in studying with faculty in the department are encouraged to apply to an appropriate home area in [Graduate Programs in Bioscience](#).

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Molecular, Cell, and Developmental Biology Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**30H. Collaborative Undergraduate Research Laboratory in Yeast, Genetics, and Molecular Biology.** (5) Lecture, two hours; laboratory, six hours. Limited to 24 students in Collaborative Undergraduate Research Laboratory (CURL), sponsored by Howard Hughes Medical Institute Professors Program. Basic training in biological research, covering topics in molecular genetics, molecular biology, model organism biology, and data analysis. Letter grading.

**50. Stem Cell Biology, Politics, and Ethics: Teasing Apart Issues.** (5) Lecture, three and one half hours; discussion, 90 minutes. Developmental biology of various types of human stem cells. Important functional differences between embryonic, hematopoietic, and adult stem cells, as well as differences in their biomedical potentials. Discussion of history of debate surrounding embryos, as well as various social, ethical, political, and economic aspects of stem cell research. P/NP or letter grading.

**60. Biomedical Ethics.** (5) Lecture, three hours; discussion, one hour. Examination of importance of ethics in research and exploration of how and why bioethics is relevant to reproductive screening, policy formation, public regulation, and law. Provides foundation in traditional ethics, consideration of subcategories of bioethics, neuroethics, and eugenics, and how to apply ethics to contemporary issues in research and technology. P/NP or letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Human Stem Cells and Medicine.** (5) Lecture, three and one half hours; discussion 90 minutes. Stem cells have potential to revolutionize way medicine is practiced today. Some stem cell therapies are already used successfully to treat thousands of people worldwide. Other stem cell therapies are considered experimental; therefore treatments must be monitored by Food and Drug Administration to ensure safety and efficacy. Some stem cell therapies are offered with minimal scientific justification, relying on hope and hype rather than scientific fact. Exploration of use of stem cells in modern medicine to take close look at science behind some of today's most famous and infamous stem cell medical applications. P/NP or letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.



## Upper-Division Courses

**100. Introduction to Cell Biology. (5)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, and 23L. Not open for credit to Molecular, Cell, and Developmental Biology majors or to students with credit for course 165A. Analysis of cell organization, structure, and function at molecular level. Cell membranes and organelles, membrane transport, cellular signaling, cytoskeleton and cell movement, intracellular trafficking, cell energetics. Letter grading.

**104AL. Research Immersion Laboratory in Developmental Biology. (5)** Lecture, two hours; laboratory, eight hours. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. Course 104AL is requisite to 104BL. Limited to Molecular, Cell, and Developmental Biology and Microbiology, Immunology, and Molecular Genetics majors. Discovery-based research using sea urchins as model system. Students determine expression of unstudied sea urchin genes using combination of molecular biology and computation techniques. May not be repeated for credit. Letter grading.

**104BL. Advanced Research Analysis in Developmental Biology. (5)** Laboratory, six hours. Enforced requisite: course 104AL. Limited to Molecular, Cell, and Developmental Biology majors. Investigation to be primarily computational in nature whereby students use bioinformatics or mathematical modeling software to interpret, expand, or refine datasets. Use of graphics software to prepare figures and illustrations for presentations, posters, reports, and websites (database entries). Research accomplishments discussed in weekly seminar-style meetings in which student groups create PowerPoint slides and formally present results to class. Production of team poster and final report describing entire research project required. Letter grading.

**M130. Fundamentals of Digital Imaging and Image Processing. (5)** (Same as Computational and Systems Biology M130.) Lecture, three hours; laboratory, two hours. Requisites: Life Sciences 7A, 7B, 7C, and Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, and 3C, or Mathematics 31A, 31B, and 32A or 33A. Digital imaging has become integral tool to our everyday lives and to nearly every field of life sciences. Quantitative approach to learning about basic properties of digital signals and surveying fundamental methods for processing and analyzing images. Letter grading.

**138. Developmental Biology. (5)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. Development of understanding of fundamental molecular mechanisms and cellular activities guiding formation of complex organism from single fertilized egg. Development of model organisms to understand conserved nature of developmental decisions across animal kingdom, distinct features that lead to diversification of animal shape and form during evolution. Origin and roles of stem and progenitor cells in development and maintenance of specific organ systems. Roles of cell shape change, cell death, proliferation, and migration in generating shape of embryo, organs, and tissues. Mechanisms by which cells become different from and communicate with one another to coordinate their activities in time and space in embryo. Special emphasis on experimental approaches used to address these fundamental questions that determine how organized tissues and organs are formed and maintained throughout life of organism. Letter grading.

**M140. Cancer Cell Biology. (5)** (Same as Biological Chemistry M140.) Lecture, three hours; discussion, one hour. Requisite: course 165A. Cancer causes and genetics. Effects of cell transformation on cell growth and metabolism. Altered cell cycle, metabolism, and differentiation pathways in cancer cells. Tumor micro-environment contributions to cancer malignancy, including angiogenesis, metastasis, and immune system evasion. Letter grading.

**C141. Molecular Basis of Plant Differentiation and Development. (5)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 1, 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. In-depth study of basic processes of growth differentiation and development in

plants and molecular mechanisms underlying these processes. Discussion of variety of plant systems, with focus on developing critical understanding of current experimental basis of research in this field. Concurrently scheduled with course C239. Letter grading.

**143. Developmental Biology: Genetic Control of Organogenesis. (5)** Lecture, three hours; discussion, one hour. Requisites: course 138, Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. Cellular and molecular basis of animal embryology, with primary emphasis on vertebrate organ development, but including pertinent material from *Drosophila* and other invertebrate model organisms. Letter grading.

**144. Molecular Biology of Cellular Processes. (5)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. Not open for credit to students with credit for Chemistry 153B. Development of thorough understanding of fundamentals of modern molecular biology both from perspective of known molecular mechanisms for regulating fundamental processes in cells and from theoretical applied perspective for using molecular biology as laboratory tool. Special emphasis on molecular mechanisms that relate to chromatin and histone modifications, DNA replication and repair, transposition, microRNAs, meiosis, and splicing. Application of molecular biology as tool to understand embryonic development, reprogramming, cancer, and stem cells. Development of sophisticated understanding of DNA, RNA, and protein as well as capability of designing experiments to address fundamental questions in biology and interpreting experimental data. Letter grading.

**145. Appreciation and Critical Review of Biomedical Research. (4)** Seminar, four hours. Corequisite: one course from 198B, 198C, 199B, 199C. Designed to offer students perspectives on how to appreciate independent research they are conducting in faculty mentor's laboratory, and allow them to gain wider understanding of molecular, cell, and developmental biology. Through free-form Socratic learning method, class participation and interaction with classmates is encouraged, while students gain understanding of process and value of peer evaluation, and improved verbal and written presentation skills. Letter grading.

**146. Metabolism and Disease. (5)** Lecture, three hours; discussion, one hour. Requisites: course 165A, and Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. Contribution of cellular metabolism to biology of human diseases including cancer and diabetes. Exploration of (1) major alterations of cellular metabolism in disease, (2) tools and technologies that enable detailed characterization of metabolic alterations, (3) therapeutic targeting of metabolic vulnerabilities, and (4) utility of altered cellular metabolism as diagnostic and predictive biomarkers. Letter grading.

**C150. Plant Communication. (4)** Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. Most people think of plants as static organisms, yet they live in world of symbiosis and community. Plants change atmosphere, enrich soil, and communicate with insects, bacteria, and each other—Earth's ultimate symbiote. Just as science has revealed over time misconceptions about how things work at deeper level, scientists and economists now recognize that beyond obvious need to grow above-ground biomass for fuel production, we must better understand how to make that biomass in sustainable manner. Introductory course in chemical ecology and how natural compounds affect gene expression. Emphasis on role of natural compounds in plant/microbe, plant/plant, and plant/herbivore interactions; synopsis of principles of plant defense mechanisms and responses to microbial infections. Concurrently scheduled with course C250. P/NP or letter grading.

**150AL. Research Immersion Laboratory in Plant-Microbe Ecology. (5)** Lecture, two hours; laboratory, eight hours. Enforced requisites: Life Sciences 7A, 7B, 7C, 23L, 107. Course 150AL is enforced requisite to 150BL. Limited to Molecular, Cell, and Developmental Biology majors. Introductory plant-microbe biology laboratory to give students hands-on experience doing experiments and making their own observations about plants and microbiome. Letter grading.

**CM156. Human Genetics and Genomics. (5)** (Same as Microbiology CM156.) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, and 7C. Application of genetic principles in human populations, with emphasis on genomics, family studies, positional cloning, Mendelian and common diseases, cancer genetics, animal models, cytogenetics, pharmacogenetics, population genetics, and genetic counseling. Lectures and readings in literature, with focus on current questions in fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM256. Letter grading.

**160. Principles of Light Microscopy. (4)** Lecture, three hours; laboratory, two hours. Requisites: Life Sciences 7A, 7B, 7C, 23L. Over last two decades, there has been explosion of new techniques in light microscopy which has provided us with invaluable tools for biological research. Study of light microscopy techniques currently used in research laboratories. Basics of light microscopy (image formation, magnification, resolution, contrast), widefield and fluorescence microscopy, optical sections (confocal, multiphoton, light-sheet and total internal reflection fluorescence microscope), and super-resolution microscopy. Laboratory sessions include setting up and using simple, rail-based microscope; hands-on time and demonstrations on brightfield/epifluorescence, confocal, light-sheet and super-resolution microscopes. Letter grading.

**165A. Biology of Cells. (5)** Lecture, three hours; discussion, one hour. Requisites: Chemistry 14D or 30B, Life Sciences 3, or 7A, 7B, and 7C. Not open for credit to students with credit for course 100. Molecular basis of cellular structure and function, with focus on each individual cellular organelle, as well as interaction of cells with extracellular environment and with other cells. Material presented in context of experimental questions and answers to incorporate concept of scientific method and recent advances in cell biology research. Exposure in discussions to recent scientific articles that directly relate to information examined in lectures. Letter grading.

**165B. Molecular Biology of Cell Nucleus. (5)** Lecture, three hours; discussion, two hours. Requisite: course 165A. Continuation of course 165A. Molecular biology of eukaryotic cell nucleus, with focus on structure, organization, replication, and repair of eukaryotic genome; eukaryotic gene expression, including transcription, translation, and transport; cell cycle and cancer. Study of advanced specialized topics to allow integrated approach to molecular cell biology. Material presented in context of experimental questions and answers to incorporate concept of scientific method and recent advances in cell biology research. Exposure in discussions to current literature that directly relates to information examined in lectures. Letter grading.

**167. Genetic Engineering: History, Science, and Applications in Medicine, Agriculture, and Law. (6)** Lecture four hours; discussion two hours. Requisites: Life Sciences 7A, 7B. Not open for credit to students with credit for course 70 or Honors Collegium 70A. Provides historical and scientific perspective on field of genetic engineering with emphasis on social, legal, and ethical issues that arise from emerging new genetic technologies. Provides solid scientific foundation for field of genetic engineering, and puts genetic engineering into historic and social perspective so that students can make objective decisions about how this technology should be used in future. Course is highly interactive, team-oriented, problem-based, and teaches students how to think critically about experimental science, societal issues raised by advances in genetic engineering, genomics, and human reproduction. Includes interactive, media-oriented lectures with hands-on experiments and demonstrations, and seminar style discussions focusing on seminal articles in history of genetic engineering. P/NP or letter grading.

**168. Stem Cell Biology. (5)** Lecture, three hours; discussion, one hour. Requisites: courses 138, 165A. State-of-art education of embryonic and adult stem cells and how these pluripotent/multipotent cells can be used to treat congenital defects, diseases, or injury in humans. Review of current knowledge of human



and mouse embryonic stem cells and how they develop into various tissue types. Discussion of adult stem cells in hematopoietic, nervous, and other organ systems to provide examples of tissue-specific stem cells and their impact in human disease. Examination of various model organisms as examples of how model organisms have helped to discover fundamental principles in stem cell biology. How advances in cell and molecular biology and tissue engineering can be applied to use of stem cells in regenerative medicine. Ethical and legal issues related to stem cell research. Letter grading.

**M170. Biochemistry and Molecular Biology of Photosynthetic Apparatus. (2 to 4)** (Same as Chemistry CM170.) Lecture, two to three hours; discussion, zero to two hours. Requisites: Chemistry 153A and 153B, or Life Sciences 3 and 23L, and Chemistry 153L. Recommended: Chemistry 153C, 154, Life Sciences 4. Light harvesting, photochemistry, electron transfer, carbon fixation, carbohydrate metabolism, pigment synthesis in chloroplasts and bacteria. Assembly of photosynthetic membranes and regulation of genes encoding those components. Emphasis on understanding of experimental approaches. P/NP or letter grading.

**172. Genomics and Bioinformatics. (5)** Lecture, three hours; discussion, one hour. Requisite: course 144 or 165B or Chemistry 153B or Microbiology 132. Genomics is study of complete repertoire of molecules in cells. Topics include human and yeast genomes and genetic approaches to study of function of individual genes, fundamental bioinformatics algorithms used to study relationship between nucleotide and protein sequences and reconstruction of their evolution, use of microarray technologies to measure changes in gene expression, analysis of microarray data including clustering and promoter analysis, proteomics topics including protein expression and interactions, epigenomic study of DNA methylation and chromatin modification, and systems biology, or computational approaches to integrating varied genomic data to gain more complete understanding of cellular biology. Letter grading.

**C174A. Advanced Topics in Cell and Molecular Biology: Molecular Evolution. (2)** Lecture, two hours. Requisites: courses 100 or 165A, 144, Life Sciences 4 or 107. Recent developments in fields of molecular, cell, and developmental biology. Current developments in field of molecular evolution. Constructing evolutionary trees at molecular level; formal testing of evolutionary hypotheses using sequencing data. Concurrently scheduled with course C222A. Letter grading.

**C174B. Advanced Topics in Cell and Molecular Biology: Molecular Biology of Cell Nucleus. (2)** Lecture, two hours. Requisites: courses 100 or 165A, 144, Life Sciences 4 or 107. Recent developments in fields of molecular, cell, and developmental biology. Animal cell nucleus regulation of cell metabolism. Structure/function relationships, nuclear-cytoplasmic exchange, DNA replication and gene expression. Concurrently scheduled with course C222B. Letter grading.

**C174D. Advanced Topics in Cell and Molecular Biology: Molecular Biology of Extracellular Matrix. (2)** Lecture, two hours. Requisites: courses 100 or 165A, 144. Recommended: course 138. Recent developments in fields of molecular, cell, and developmental biology. Synthesis of key extracellular matrix proteins and their assembly into supramolecular structures. Interactions of matrix proteins with cells and their influence on tissue formation. Concurrently scheduled with course C222D. Letter grading.

**M175A. Neuroscience: From Molecules to Mind—Cellular and Systems Neuroscience. (5)** (Same as Neuroscience M101A, Physiological Science M180A, and Psychology M117A.) Lecture, four hours; discussion, 90 minutes. Requisites: Chemistry 14C or 30A (14C may be taken concurrently), Life Sciences 7C, Physics 1B or 1BH or 5C or 6B. Students must receive grade of C– or better to proceed to next course in series. Cellular neurophysiology, membrane potential, action potentials, and synaptic transmission. Sensory systems and motor system; how assemblies of neurons process complex information and control movement. P/NP or letter grading.

**M175B. Neuroscience: From Molecules to Mind—Molecular and Developmental Neuroscience. (5)** (Same as Neuroscience M101B, Physiological Science M180B, and Psychology M117B.) Lecture, four hours; discussion, 90 minutes. Requisites: course M175A (with grade of C– or better), Life Sciences 7C. Molecular biology of channels and receptors: focus on voltage dependent channels and neurotransmitter receptors. Molecular biology of supramolecular mechanisms: synaptic transmission, axonal transport, cytoskeleton, and muscle. Classical experiments and modern molecular approaches in developmental neurobiology. P/NP or letter grading.

**M175C. Neuroscience: From Molecules to Mind—Behavioral and Cognitive Neuroscience. (5)** (Same as Neuroscience M101C, Physiological Science M180C, and Psychology M117C.) Lecture, four hours; discussion, 90 minutes. Requisite: course M175A with grade of C– or better. Neural mechanisms underlying motivation, learning, and cognition. P/NP or letter grading.

**180A. Scientific Analysis and Communication I. (2)** Seminar, two hours. Enforced corequisite: course 196A. Students read and discuss scientific articles and give presentations, introducing research topics using relevant primary literature. Critical aspects of research process, including record keeping, ethics, laboratory safety and citizenry, mechanics of scientific writing, diverse approaches to research, and project responsibilities and ownership. Acquisition of in-depth and broad knowledge about student research projects, improvement of oral and written communication skills, and full appreciation of process of doing good science and becoming skilled researchers. Letter grading.

**180B. Scientific Analysis and Communication II. (2)** Seminar, two hours. Enforced requisites: courses 180A, 196A. Enforced corequisite: course 196B. Students give presentations similar to laboratory meeting or research symposium talk in which speakers discuss project goals, methodological approaches, results, and conclusions. How to write research papers as well as prepare and present scientific posters. Production of deliverables that demonstrate research achievements and creation of sense of pride for work accomplished as skilled researchers. Letter grading.

**187AL. Research Immersion Laboratory in Genomic Biology. (5)** Lecture, three hours; laboratory, six hours. Requisites: Life Sciences 4 or 107, 23L. Course 187AL is requisite to 187BL. Limited to Molecular, Cell, and Developmental Biology majors. Introduction to cutting-edge genomic technologies and bioinformatics methods and resources for genome annotation. Students propose original research projects related to gene annotation and drive their projects using bioinformatics tools. Students are provided fragments of genome from relatively poorly studied organism that has been sequenced at UCLA. May not be repeated for credit. Letter grading.

**188. Special Courses in Molecular, Cell, and Developmental Biology. (2)** Seminar, two hours. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with fac-

ulty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Molecular, Cell, and Developmental Biology. (2)** Seminar, two hours. Designed for junior/senior departmental majors. Intended for students with strong commitment to pursue graduate studies in molecular, biochemical, physiological, and biomedical fields. Weekly variable topics course with reading, discussion, and presentation of paper selected from current literature. May be repeated once for credit. P/NP or letter grading.

**192A. Undergraduate Practicum in Molecular, Cell, and Developmental Biology. (4)** Seminar, three hours. Limited to junior/senior Molecular, Cell, and Developmental Biology majors. Training and supervised practicum for advanced undergraduate students. Students assist in preparation of materials and development of innovative programs under guidance of faculty members in small course settings. Consult Undergraduate Office for further information. May not be applied toward course requirements for Molecular, Cell, and Developmental Biology major. May be repeated once for credit. P/NP or letter grading.

**192B. Undergraduate Practicum: CityLab. (2)** Seminar, two hours. Limited to juniors/seniors in any life sciences major. CityLab training and supervised practicum for advanced undergraduate students. Students assist in preparation of materials and development of innovative programs under guidance of faculty members in small course settings. May not be applied toward course requirements for Molecular, Cell, and Developmental Biology major. May be repeated once for credit. P/NP or letter grading.

**193. Journal Club Seminars: Molecular, Cell, and Developmental Biology. (1)** Seminar, two hours. Corequisite: course 198A or 198B or 198C or 199 or 199A or 199B or 199C. Limited to juniors/seniors. Development of in-depth understanding of and ability to discuss current literature in field of students' own research. May be repeated for credit. P/NP grading.

**194A. Research Group Seminars: Molecular, Cell, and Developmental Biology. (1)** Seminar, two hours. Corequisite: course 198A or 198B or 198C or 199 or 199A or 199B or 199C. Limited to juniors/seniors. Involvement in laboratory's weekly research group meeting to encourage student participation in research and to stimulate progress in specific research areas. Discussion of use of specific research methods and current literature in field of or research of faculty members or students. May be repeated for credit. P/NP or letter grading.

**194B. Research Group Seminars: Current Topics in Biomedical Sciences. (2)** Seminar, two hours. Limited to juniors/seniors in research traineeships or those who have strong commitment to pursue graduate studies in molecular, biochemical, physiological, or biomedical fields. Weekly presentation and discussion of paper selected from current literature. May be repeated for credit. Letter grading.

**196A. Research Apprenticeship I in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Requisites: Life Sciences 3, and 4, or 7A, 7B, 7C, 23L, and 107, 3.0 premajor and/or major grade-point average, and at least one term of prior experience in same laboratory in which 196A research is to be conducted. Corequisite: course 180A. Course 196A is

requisite to 196B. Designed for undergraduate students who are interested in pursuing inquiry-based and hypothesis-driven research experience in laboratory of departmental or preapproved faculty mentor. Guided research course to be taken in conjunction with course 180A, followed by continuation research course 196B. Technical aspects vary depending on specific laboratory; however, all students learn how to apply scientific method: propose hypothesis, identify experiments to address hypothesis, perform experiments, and analyze results. How to record information from experimental activities into laboratory notebooks and to write research proposals. Letter grading.

**196B. Research Apprenticeship II in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Enforced requisites: courses 180A, 196A. Enforced corequisite: course 180B. Technical aspects vary depending on specific laboratory; however, all students use scientific method learned in course 196A and continue same experimental scope proposed, but with additional degree of independence in technical and intellectual aspects of research. Letter grading.

**198A. Honors Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Requisites: Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Course 198A is requisite to 198B, which is requisite to 198C. Limited to junior/senior Molecular, Cell, and Developmental Biology majors. Development and completion of comprehensive research project and honors thesis under direct supervision of approved faculty member to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least three terms and for total of 12 units. Report on progress must be presented to undergraduate adviser each term 198 course is taken. Individual contract required. In Progress grading (credit to be given only on completion of course 198B).

**198B. Honors Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Requisites: course 198A, Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Limited to junior/senior Molecular, Cell, and Developmental Biology majors. Development and completion of comprehensive research project and honors thesis under direct supervision of approved faculty member to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least three terms and for total of 12 units. Report on progress must be presented to undergraduate adviser each term 198 course is taken. Individual contract required. Letter grading.

**198C. Honors Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Requisites: course 198B, Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Limited to junior/senior Molecular, Cell, and Developmental Biology majors. Development and completion of comprehensive research project and honors thesis under direct supervision of approved faculty member to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least three terms and for total of 12 units. Report on progress must be presented to undergraduate adviser each term 198 course is taken. Individual contract required. Letter grading.

**198D. Honors Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Requisites: Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Limited to junior/senior Molecular, Cell, and Developmental Biology majors. Development and completion of comprehensive research project and honors thesis under direct supervision of approved faculty member to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least three terms and for total of 12 units. Report on progress must be presented to undergraduate adviser each term 198 course is taken. Individual contract required. Letter grading.

**199. Special Studies Directed Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Preparation: submission of written proposal to department for approval by appropriate term deadline. Proposal to be developed in consultation with in-

structor, outlining research study to be undertaken. Requisites: Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Limited to juniors/seniors. Department majors may enroll with sponsorship from department faculty members or preapproved outside faculty members. Other junior/senior life sciences majors may enroll only with department faculty sponsors. Supervised individual research under guidance of faculty mentor. Studies to involve laboratory research, not literature surveys or library research. At end of term culminating paper describing progress of project and signed by student and instructor must be presented to department. May be repeated for credit. Individual contract required. Letter grading.

**199A. Directed Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Preparation: minimum 3.0 grade-point average in major. Requisites: Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Course 199A is requisite to 199B, which is requisite to 199C, which is requisite to 199D. Limited to juniors/seniors. Department majors may enroll with sponsorship from department faculty members or preapproved outside faculty members. Other junior/senior life sciences majors may enroll only for research projects in laboratories with department faculty sponsors. Supervised individual research under guidance of faculty mentor. Culminating research project designed to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least two terms and for total of at least 8 units. Individual contract required. In Progress grading (credit to be given only on completion of course 199B). Students may elect to enroll in additional research through courses 199C and 199D (letter grading). Report on progress must be presented to department each term 199A through 199D course is taken.

**199B. Directed Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Preparation: minimum 3.0 grade-point average in major. Requisites: course 199A, Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Limited to juniors/seniors. Department majors may enroll with sponsorship from department faculty members or preapproved outside faculty members. Other junior/senior life sciences majors may enroll only for research projects in laboratories with department faculty sponsors. Supervised individual research under guidance of faculty mentor. Culminating research project designed to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least two terms and for total of at least 8 units. Individual contract required. Letter grading. Students may elect to enroll in additional research through courses 199C and 199D (letter grading). Report on progress must be presented to department each term 199A through 199D course is taken.

**199C. Directed Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Preparation: minimum 3.0 grade-point average in major. Requisites: course 199B, Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Limited to juniors/seniors. Department majors may enroll with sponsorship from department faculty members or preapproved outside faculty members. Other junior/senior life sciences majors may enroll only for research projects in laboratories with department faculty sponsors. Supervised individual research under guidance of faculty mentor. Culminating research project designed to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least two terms and for total of at least 8 units. Students may elect to enroll in additional research through courses 199C and 199D. Report on progress must be presented to department each term 199A through 199D course is taken. Individual contract required. Letter grading.

**199D. Directed Research in Molecular, Cell, and Developmental Biology. (4)** Tutorial, 12 hours. Preparation: minimum 3.0 grade-point average in major. Requisites: course 199C, Life Sciences 3 and 4, or 7A, 7B, 7C, 23L, and 107. Limited to juniors/seniors. Department majors may enroll with sponsorship from department faculty members or preapproved outside faculty members. Other junior/senior life sciences majors may enroll only for research projects in laboratories with

department faculty sponsors. Supervised individual research under guidance of faculty mentor. Culminating research project designed to broaden and deepen students' knowledge of some phase of molecular, cell, and developmental biology. Must be taken for at least two terms and for total of at least 8 units. Students may elect to enroll in additional research through courses 199C and 199D. Report on progress must be presented to department each term 199A through 199D course is taken. Individual contract required. Letter grading.

## Graduate Courses

**C222A. Advanced Topics in Cell and Molecular Biology: Molecular Evolution. (2)** Lecture, two hours. Requisites: courses 100 or 165A, 144, Life Sciences 4 or 107. Recent developments in fields of molecular, cell, and developmental biology. Current developments in field of molecular evolution. Constructing evolutionary trees at molecular level; formal testing of evolutionary hypotheses using sequencing data. Original research proposal required. Concurrently scheduled with course C174A. Letter grading.

**C222B. Advanced Topics in Cell and Molecular Biology: Molecular Biology of Cell Nucleus. (2)** Lecture, two hours. Requisites: courses 100 or 165A, 144, Life Sciences 4 or 107. Recent developments in fields of molecular, cell, and developmental biology. Animal cell nucleus regulation of cell metabolism. Structure/function relationships, nuclear-cytoplasmic exchange, DNA replication and gene expression. Original research proposal required. Concurrently scheduled with course C174B. Letter grading.

**C222D. Advanced Topics in Cell and Molecular Biology: Molecular Biology of Extracellular Matrix. (2)** Lecture, two hours. Requisites: courses 100 or 165A, 144. Recommended: course 138. Recent developments in fields of molecular, cell, and developmental biology. Synthesis of key extracellular matrix proteins and their assembly into supramolecular structures. Interactions of matrix proteins with cells and their influence on tissue formation. Concurrently scheduled with course C174D. Original research proposal required. Letter grading.

**224. Molecular Basis of Vascular Biology. (4)** Lecture, four hours. Requisites: Life Sciences 3, 4. Developmental and pathological aspects of vascular biology. Presentation and discussion of key questions of vascular biology with mechanistic viewpoint. Major emphasis on experimental approaches and current research in field. Introduction to several model systems along with presentation of specific topic. Basic information provided as to how this knowledge is obtained in laboratory using variety of experimental approaches and model organisms. Letter grading.

**228. Prokaryotic and Eukaryotic Gene Systems. (2)** Lecture, two hours. Presentations concerning current experimental approaches in study of DNA replication, organization, transcription, and translation. S/U or letter grading.

**M230B. Structural Molecular Biology. (4)** (Same as Chemistry M230B.) Lecture, three hours; discussion, one hour. Requisites: Mathematics 3C, Physics 6C. Selected topics from principles of biological structure; structures of globular proteins and RNAs; structures of fibrous proteins, nucleic acids, and polysaccharides; harmonic analysis and Fourier transforms; principles of electron, neutron, and X-ray diffraction; optical and computer filtering; three-dimensional reconstruction. S/U or letter grading.

**M230D. Structural Molecular Biology Laboratory. (2)** (Same as Chemistry M230D.) Laboratory, 10 hours. Corequisite: course M230B. Methods in structural molecular biology, including experiments utilizing single crystal X-ray diffraction, low angle X-ray diffraction, electron diffraction, optical diffraction, optical filtering, three-dimensional reconstruction from electron micrographs, and model building. S/U or letter grading.

**M234. Genetic Control of Development. (4)** (Same as Biological Chemistry M234.) Lecture, four hours. Topics at forefront of molecular developmental biology, including problems in oogenesis and early embryogenesis, pattern formation, axis determination,

nervous system development, cellular morphogenesis, and cell-cell and cell-matrix interactions. S/U or letter grading.

**C239. Molecular Basis of Plant Differentiation and Development.** (5) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 1, 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. In-depth study of basic processes of growth differentiation and development in plants and molecular mechanisms underlying these processes. Discussion of variety of plant systems, with focus on developing critical understanding of current experimental basis of research in this field. Concurrently scheduled with course C141. Preparation and presentation of term paper, in addition to other coursework, required of graduate students. Letter grading.

**242. Topics in Neurobiology.** (4) Lecture, three hours. Requisite: course 171. Selected current problems in neurobiology discussed in depth, with emphasis on analysis of original papers. May be repeated for credit. Letter grading.

**C250. Plant Communication.** (4) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, 7C, 23L, and 107. Most people think of plants as static organisms, yet they live in world of symbiosis and community. Plants change atmosphere, enrich soil, and communicate with insects, bacteria, and each other—Earth's ultimate symbiote. Just as science has revealed over time misconceptions about how things work at deeper level, scientists and economists now recognize that beyond obvious need to grow above-ground biomass for fuel production, we must better understand how to make that biomass in sustainable manner. Introductory course in chemical ecology and how natural compounds affect gene expression. Emphasis on role of natural compounds in plant/microbe, plant/plant, and plant/herbivore. Interactions; synopsis of principles of plant defense mechanisms and responses to microbial infections. Concurrently scheduled with course C150. S/U or letter grading.

**254. Seminar: Plant Morphogenesis.** (2) Seminar, two hours. S/U or letter grading.

**255. RNA Editing.** (4) Lecture, two hours; discussion, one hour. Preparation: knowledge of molecular biology and molecular genetics. Discussion of diverse set of novel RNA modification phenomena known as RNA editing. Topics include U insertion/deletion type of editing in trypanosome mitochondria, C to U substitution editing in apo B mRNA and plant mitochondria, C insertion editing in Physarum mitochondria, etc. Discussion of mechanism, function, and evolution of these phenomena. S/U grading.

**CM256. Human Genetics and Genomics.** (5) (Same as Microbiology CM256.) Lecture, three hours; discussion, one hour. Requisites: Life Sciences 3, 4, and 23L, or 7A, 7B, and 7C. Application of genetic principles in human populations, with emphasis on genomics, family studies, positional cloning, Mendelian and common diseases, cancer genetics, animal models, cytogenetics, pharmacogenetics, population genetics, and genetic counseling. Lectures and readings in literature, with focus on current questions in fields of medical and human genetics and methodologies appropriate to answer such questions. Concurrently scheduled with course CM156. Independent research project required of graduate students. Letter grading.

**266A-266B-266C. Seminars: Development, Stem Cells, and Disease Mechanisms.** (2-2-2) Seminar, two hours. Limited to graduate students. Advanced courses based on research papers on fundamental cellular mechanisms governing development and disease. Disease results from genetically determined or acquired deficits in cell and molecular processes; analysis of these processes in context of normal development indicates ways of dealing with corresponding disease. S/U grading.

**M272. Stem Cell Biology and Regenerative Medicine.** (4) (Same as Pathology M272.) Lecture, two hours; discussion, two hours. Designed for graduate students. Presentation of current knowledge of embryonic and adult stem cells and factors that regulate their growth and development. Major emphasis on how advances in cell and molecular biology and tissue

engineering can be applied to use of stem cells in regenerative medicine. Bioethical and legal issues related to stem cell research. S/U or letter grading.

**276. Seminar: Molecular Genetics.** (2) Seminar, two hours. Topics vary each term. S/U or letter grading.

**277. Seminar: Genetics.** (2) Seminar, two hours. S/U or letter grading.

**278. Seminar: Molecular Genetics of Development.** (2) Seminar, two hours. Designed for graduate students. Topics vary from year to year, with focus on establishment of position and pattern during embryogenesis by interaction of signal transduction systems and transcription factors. S/U or letter grading.

**281. Seminar: Molecular Biology.** (2) Seminar, two hours. S/U or letter grading.

**283. Seminar: Topics in Cell Biology.** (2) Seminar, two hours. Discussion of various topics on biology of eukaryotic cells. Topics vary from year to year and include bioenergetics, motility, organelle DNA, membrane structure and function, oncogenic transformation, nuclear organization and function. S/U or letter grading.

**284. Seminar: Structural Macromolecules.** (2) Seminar, one hour; discussion, three hours. Presentation and discussion of current topics in extracellular active structural macromolecules—their synthesis, structure, and roles in cell and developmental biology. Letter grading.

**286. Seminar: Plant Development.** (2) Seminar, one hour; discussion, two hours. Preparation: one plant physiology course and at least one advanced undergraduate or graduate plant development or biochemistry course. Seminar on specific topics in plant development. Content varies each term. S/U grading.

**289. Current Topics in Plant Molecular Biology.** (2) Discussion, one hour. Recent research developments in field of plant molecular biology. Opportunities for graduate students to discuss individual research work. S/U grading.

**292. Seminar: Molecular Evolution.** (2) Seminar, three hours. Detailed analysis of current understanding of evolution of molecular sequences and structures. Letter grading.

**295. Seminar: Molecular, Cell, and Developmental Biology.** (2) Seminar, two hours. In-depth surveys of recent developments in molecular, cell, and developmental biology research. Reading and presentation of primary research articles to learn to critically evaluate research papers and to organize and present seminars on specific research topics. S/U or letter grading.

**296. Advanced Topics in Molecular, Cellular, and Developmental Biology.** (2) Discussion, three hours. Advanced study and analysis of current topics in cell, molecular, and developmental biology. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading.

**297. Advances in Molecular Analysis of Plant Development and Plant/Microbe Interactions.** (2) Discussion, two hours. Recent advances in plant molecular biology, with emphasis on control of gene expression both during plant development and in plant/microbe interactions. S/U grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Preparation for Teaching Molecular, Cell, and Developmental Biology in Higher Education.** (2) Seminar, two hours. Designed for graduate students. Study of problems and methodologies in teaching molecular, cell, and developmental biology, including workshops, seminars, apprentice teaching, and peer observation. S/U grading.

**596. Directed Individual (or Tutorial) Studies.** (2 to 12) Tutorial, to be arranged. S/U grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations.** (2 to 12) Tutorial, to be arranged. May not be applied toward MA or PhD course requirements. S/U grading.

**598. MA Thesis Research and Writing.** (2 to 12) Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Writing.** (2 to 12) Tutorial, to be arranged. S/U grading.

## MOLECULAR, CELLULAR, AND INTEGRATIVE PHYSIOLOGY

*Interdepartmental Program  
College of Letters and Science and  
David Geffen School of Medicine*

328 Hershey Hall  
Box 957246  
Los Angeles, CA 90095-7246

**Molecular, Cellular, and Integrative Physiology**

310-825-3891

**E-mail contact**

**Mark A. Frye, PhD, Chair**

**Xia Yang, PhD, Vice Chair**

## Faculty Committee

Christopher S. Colwell, PhD (*Psychiatry and Biobehavioral Sciences*)

Stephanie M. Correa, PhD (*Integrative Biology and Physiology, Neurobiology*)

Mark A. Frye, PhD (*Integrative Biology and Physiology, Neurobiology*)

Andrea L. Hevener, PhD (*Medicine-Endocrinology*)

Elizabetha Nemeth, PhD (*Medicine-Pulmonary Disease*)

Alapakam P. Sampath, PhD (*Neurobiology, Ophthalmology*)

Thomas M. Vondriska, PhD (*Anesthesiology and Perioperative Medicine, Physiology*)

Xia Yang, PhD (*Integrative Biology and Physiology, Molecular and Medical Pharmacology*)

## Overview

Physiology is the study of the functional processes that collectively constitute life. The studies usually employ quantitative analyses of normal life processes, of pathological defects in normal life processes, of model systems to clarify and test basic physiological principles, and of functional specializations of organisms that have evolved under the influence of differing selective forces. Thus, physiology contributes importantly to advances in knowledge both in the basic biological sciences and in biomedical sciences; and provides an essential foundation for the practice of medicine.

The primary objective of the interdepartmental Molecular, Cellular, and Integrative Physiology program is to train a new generation of physiologists who apply modern knowledge in molecular and cellular biology and systems physiology to important questions in organismic function. Students learn to conceptualize



physiological questions across several levels of organization and to understand how research strategies incorporating each of the levels of analysis can be formulated. This approach to physiology education is responsive to the need for physiologists who can intellectually and technically span disciplines related to physiology that are typically separated.

Coursework consists of formal instruction in the most current information in molecular biology, cell biology, and the molecular and cellular foundations of physiology. In addition, students identify an area of emphasis in biophysics, cellular and molecular biology, or integrative/comparative physiology in which additional studies are pursued. The heart of the program, however, is the research that leads to the dissertation, which is performed under the guidance of a faculty mentor. The program faculty includes more than 115 professors in the Geffen School of Medicine and College of Letters and Science. Collectively they have been recently ranked by the National Research Council in the top five in the U.S. for their quality as an academic faculty.

## Graduate Major

### Molecular, Cellular, and Integrative Physiology PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Molecular, Cellular, and Integrative Physiology

#### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

#### Graduate Courses

**214. Research Grant Writing in Biomedical Sciences.** (4) Lecture, three hours. Designed for Molecular, Cellular, and Integrative Physiology program students. Training in designing, writing, and evaluating research project and fellowship grants. How grant applications are structured and what features contribute to grant application success. How individual research project grants (RO1) and exploratory/development research grants (R21) to National Institutes of Health (NIH) are structured and differ. How applications for predoctoral fellowships from NIH (F31) and American Heart Association (AHA) are organized. Development and writing of students' own RO1, R21, F31, or AHA grant application. Letter grading.

**248. Seminar: Molecular Basis of Physiological Function.** (2) Seminar, two hours. Application of molecular approaches in investigation of physiological processes of biological systems. Critical thinking and experimental design strategies learned through primary literature review and in-class presentation/discussion. Letter grading.

**249. Seminar: Pathogenic Mechanisms in Muscle Disease.** (2) Seminar, two hours. Recent advances have been made in genetic identification of molecular basis of muscle disease, and some mechanisms involved have been elucidated. Focus on muscle diseases in which substantial mechanistic information has been obtained, including particular cellular locations and diseases associated with those locations. Topics include Duchenne muscular dystrophy, congenital muscular dystrophy, limb girdle dystrophy, Ullrich myopathy, and other forms of genetically inherited muscle disease. S/U grading.

**250. Current Topics in Molecular, Cellular, and Integrative Physiology.** (2) Seminar, two hours. Designed for molecular, cellular, and integrative physiology students. Reading, analysis, critique, and discussion of current research literature in field of molecular, cellular, and integrative physiology. Student presentation of assigned paper. Variable topics. May be repeated for credit. S/U grading.

**251. Integrative Genomics for Studying Complex Diseases.** (2) Seminar, two hours. Requisite: course 252A. Lectures and supervised student presentations to offer graduate students opportunity to acquire deep understanding of advanced integrative genomic approaches and how these approaches can be applied to help understand molecular basis of diverse complex diseases. Topics include transcriptomics, genetics, functional genomics, network biology, and high-level integration. Letter grading.

**252. Molecular Mechanisms of Human Diseases I.** (6) Lecture, four hours; discussion, two hours. Preparation: prior satisfactory molecular and cell biology coursework. Fundamental concepts and methodologies in modern biology and medicine, with emphasis on systems-based research and mechanistic understanding to human diseases and therapies as they apply to neural, immune, cardiovascular, and metabolic systems. Reading, review, and discussion of primary research literature addressing fundamental concepts and methodologies in related topic areas of human biology and diseases. Emphasis on development of scientific skills in critical analysis, knowledge acquisition and self-learning, as well as effective articulation in scientific debate and exchange. Letter grading.

**262. Molecular Mechanisms of Human Diseases II.** (6) Lecture, four hours; discussion, two hours. Preparation: prior satisfactory molecular biology coursework. Requisite: course 252. Fundamental concepts and methodologies in modern biology and medicine, with emphasis on systems-based research and mechanistic understanding to human diseases and therapies as they apply to neural, cardiovascular, and metabolic systems. Includes reading, review, and discussion of primary research literature addressing fundamental concepts and methodologies in related topic areas of human biology and diseases. Emphasis on development of scientific skills in critical analysis, knowledge acquisition and self-learning, and effective articulation in scientific debate and exchange. Letter grading.

**290A-290B-290C. Tutorials.** (4-4-4) Tutorial, two hours. Discussion, analysis, and critique of original research literature. Letter grading. **290A.** Cellular and Molecular Physiology; **290B.** Biophysics; **290C.** Integrative and Comparative Physiology.

**296. Research Seminar.** (2) Seminar, to be arranged. Review of literature, discussion of original research, and analysis of current topics in molecular, cellular, and integrative physiology. May not be applied toward PhD course requirements. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May not be applied toward PhD course requirements. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research.** (2 to 10) Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations.** (2 to 10) Tutorial, to be arranged. May not be applied toward PhD course requirements. May be repeated for credit. S/U grading.

**599. Research for PhD Dissertation.** (2 to 10) Tutorial, to be arranged. May not be applied toward PhD course requirements. May be repeated for credit. S/U grading.

## MOLECULAR TOXICOLOGY

*Interdepartmental Program  
Jonathan and Karin Fielding School of Public Health*

56-070 Center for Health Sciences  
Box 951772  
Los Angeles, CA 90095-1772

**Molecular Toxicology**

310-206-1619

**E-mail contact**

Oliver Hankinson, PhD, *Chair*

### Faculty Committee

Patrick Allard, PhD (*Society and Genetics*)

Jesus A. Araujo, MD, PhD (*Environmental Health Sciences, Medicine-Cardiology*)

Michael D. Collins, PhD (*Environmental Health Sciences*)

Oliver Hankinson, PhD (*Pathology and Laboratory Medicine*)

Shaili Mahendra, PhD (*Civil and Environmental Engineering*)

Xia Yang, PhD (*Integrative Biology and Physiology, Molecular and Medical Pharmacology*)

### Overview

Faculty from 19 departments from six schools at UCLA, including chemistry and biochemistry, environmental health sciences, epidemiology, medicine, molecular and medical pharmacology, and pathology and laboratory medicine, have joined forces to create an interdisciplinary PhD program in Molecular Toxicology that is administered through the Fielding School of Public Health.

Specialties within the program include, but are not limited to, neurotoxicology, developmental toxicology, genetic toxicology, and carcinogenesis. There is a particular emphasis on mechanisms of toxicity, since it is now widely accepted that understanding mechanisms will provide the means for accurately determining risk.

New chemicals have been the basis for most of the technological developments during the past century, and there is no question that soci-



ety has reaped enormous benefits from the creation and growth of the chemical industry. However, major health and environmental problems have also been the legacy of the synthesis of new chemical species. The discipline of toxicology, which seeks to characterize and elucidate the mechanisms of the problems related to exposure of chemical agents, has also developed from a purely descriptive to a mechanistic science whose objective is to understand the basis of toxin action, predict the toxicity of new chemical entities, and protect organisms from them. Toxicology has used the basic disciplines of chemistry, biochemistry, and cell biology to advance understanding of toxicological phenomena, and the growth of the sophistication of toxicology has paralleled the increase in knowledge derived from the basic chemical and biological sciences.

## Graduate Major

### Molecular Toxicology PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Molecular Toxicology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Course

**197. Individual Studies in Molecular Toxicology. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

### Graduate Courses

**211A-211B-211C. Molecular Toxicology Seminars. (1-1-1)** Seminar, one hour twice per month. Seminar series which alternately features outside speakers and members of UCLA molecular toxicology community (students, postdoctoral fellows, and faculty) and deals with topics relevant to molecular toxicology. In Progress (211A, 211B) and S/U (211C) grading.

**242. Advanced Molecular Toxicology. (4)** (Formerly numbered M242.) Lecture, two hours; discussion, two hours. Prerequisite: Environmental Health Sciences C240. Preparation: undergraduate biology and chemistry courses. Examination of recent literature on mechanisms of toxicity. Didactic lectures and student

presentation of papers selected by instructor on various aspects of toxic mechanisms, including free radical generation, oxidative stress and adaptive pathways, mechanisms of cell death, inflammation and fibrosis, autophagy and diseases, metal toxicity/ion homeostasis, carcinogenesis, DNA damage and repair, cancer and gene environmental interactions, toxicity testing and radiation carcinogenesis, toxicology of major pollutants including air pollution, persistent organic pollutants and dioxins, toxicology of major organ including liver, kidney, immune, reproductive and nervous system, and nanotoxicology. Discussion of various papers. Letter grading.

**M247. Advanced Concepts in Gene-Environment Interactions. (4)** (Same as Environmental Health Sciences M241.) Lecture, three hours; discussion, one hour. Comprehensive and practical examination of emerging science of gene-environment interaction. Discussion of primary components of field, including role of metabolic pathways in modifying environmental responses and importance of environmental influences in human disease. Exploration of selected hot topics in field, such as importance of epigenetics and of microbiome. S/U or letter grading.

**296B-296F. Research Topics in Molecular Toxicology. (2-2)** Research group meeting, two hours. Advanced study and analysis of current topics in molecular toxicology. Discussion of current research and literature in research specialty of faculty member teaching course. S/U grading: **296B.** Molecular Carcinogenesis. **296F.** Genetic Toxicology.

**596. Directed Individual Study or Research. (2 to 12)** Tutorial, to be arranged. Individual guided studies under direct faculty supervision. May not be applied toward degree course requirements. May be repeated for credit. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 12)** Tutorial, four hours. May not be applied toward degree course requirements. May be repeated for credit. S/U grading.

**599. PhD Dissertation Research. (8 to 12)** Tutorial, to be arranged. May not be applied toward degree course requirements. May be repeated for credit. S/U grading.

## MUSIC

### Herb Alpert School of Music

2539 Schoenberg Music Building  
Box 951616  
Los Angeles, CA 90095-1616

#### Music

310-825-4761

James K. Bass, DMA, *Chair*

## Faculty Roster

### Professors

Jan N. Baker, DM  
James K. Bass, DMA  
Terence O. Blanchard  
Che-Yen B. Chen, MM  
Lily Chen-Hafteck, PhD  
Vladimir Chernov, MM  
Travis J. Cross, DM  
Richard D. Danielpour, DMA (*Susan G. and Mitchel D. Covel, MD Professor of Music*)  
Michael E. Dean, MM  
Inna Faliks, DMA  
Juliana K. Gondek, MM  
Peter D. Kazaras, JD  
William A. Kinderman, PhD (*Leo M. Klein and Elaine Krown Klein Endowed Professor of Performance Studies*)

Ian Krouse, DMA  
David S. Lefkowitz, PhD  
Jens H. Lindemann, MM  
Antonio Lysy, PDip  
Arturo O'Farrill, MM  
Movses Pogossian, DMA  
Neal H. Stulberg, MA

### Professors Emeriti

Roger Bourland, PhD  
Kenneth E. Burrell, BA  
Paul S. Chihara, PhD  
Maurice Gerow, PhD  
Frederick F. Hammond, PhD  
Gordon Henderson, MME  
Frank Heuser, PhD  
Mark Kaplan, BA  
D. Thomas Lee, DMA  
Elisabeth C. Le Guin, PhD  
Susan K. McClary, PhD  
Donald Neuen, MA  
James W. Newton, BM  
Walter Ponce, DMA  
Paul V. Reale, PhD  
Jon Robertson, DMA  
Robert Walsler, PhD  
Robert S. Winter, PhD (*Presidential Professor Emeritus of Music and Interactive Arts*)

### Assistant Professors

Johanna S. Gamboa-Kroesen, EdD  
Jocelyn H. Ho, DMA  
David J. Kaplan, DMA (*Shapiro Family Professor of Piano Performance*)  
Kay K. Rhie, DMA

### Senior Lecturer SOE

John L. Hall, MM, *Emeritus*

### Lecturer SOE

Maureen D. Hooper, EdD, *Emerita*

### Lecturers

Boris V. Allakhverdyan, MM  
Ji Young An, DMA  
Sumner M. Arano, MM  
Jonathan R. Beard, MM  
Denis Bouriakov, PGDip  
Erin Bouriakov, PGDip  
David A. Brennan, DMA  
Wendy L. Caldwell, BM  
Jonathan D. Davis, DMA  
Nick J. De Pinna, MM  
Dante L. De Silva, PhD  
Theresa A. Dimond, DMA  
Cheryl L. Fielding, DMA  
Aubrey D. Foad, MM  
Peter R. Golub, PhD  
Gregory S. Goodall, MFA  
Rakefet R. Hak, MM  
K. Noel Hearn, MA  
Victoria H. Kirsch, MA  
James D. Lent, DMA  
Iris Malkin, MM  
Varty H. Manouelian, MM  
Brendan M. McBrien, MA  
Noah G. Meites, DMA  
Wayne S. Milburn, PhD  
James T. Miller, MM  
Lou Anne Neill, MA  
Hitomi M. Oba, MA  
Joshua H. Ranz, MM

Amy M. Sanchez, MM  
John A. Steinmetz, MM  
Lucy T. Yates, MM  
Mildred H. Yi, EdD

### Adjunct Professors

Christoph Bull, DMA  
Gloria C. Cheng, DMA  
Don E. Franzen, JD  
Herbert J. Hancock, DFA  
Christopher Hanulik, BM

### Adjunct Associate Professors

Alison S. Deane, MM  
Katherine R. Syer, PhD

## Overview

The Department of Music offers undergraduate and graduate training in Western classical music, with specialized undergraduate programs in music composition, education, and performance. Jazz performance is also offered at the graduate level. The department is aligned with the Departments of Ethnomusicology and Musicology and the interdepartmental program in Global Jazz Studies and aspires to promote productive collaboration between performance and scholarship; a cross-cultural, global understanding of the art of music; and preparatory training for a broad range of careers in music after students graduate.

## Undergraduate Study

The department offers four-year bachelors' degrees in music, music composition, music education, and music performance. The curriculum for all four degrees balances a classically oriented program of practical, theoretical, and historical studies with related performance and academic studies in non-Western music. Designed for students who want to combine fine musicianship with academic excellence, all four degrees are based on a core curriculum of theory, history, analysis, and individual and group performance. The music education major additionally offers preparation in pedagogical skills and innovative insights into theories and practice essential to teach music to the diverse student population of California and offer leadership in the field of arts education.

## Graduate Study

At the graduate level, specialized studies leading to the degrees of Master of Arts (MA) and Doctor of Philosophy (PhD) are offered in composition; specialized studies leading to the degrees of Master of Music (MM) and Doctor of Musical Arts (DMA) are offered in all classical solo instruments, voice, and conducting. Jazz performance is offered at the master's degree level.

Students interested in a concentration in music history and literature should consider the major in **Musicology**, and those interested in a concentration in world music should consider the major in **Ethnomusicology**.

## Undergraduate Majors

### Music BA

#### Capstone Major

The Music major is a designated capstone major. Through preparation for and execution of their senior capstone projects or recitals, students demonstrate mastery of program learning outcomes as well as a level of proficiency appropriate for their role in the recitals and their understanding of performance practices appropriate to the repertory being performed, as acquired in previous coursework and through research. Students also display their ability to assemble an effective program in terms of pacing and variety and demonstrate requisite stage presence along with an ability to communicate with their audience in performance.

#### Learning Outcomes

The Music major has the following learning outcomes:

- Proficiency appropriate for role in the recital
- Understanding of performance practices, as acquired through coursework and research, appropriate to the repertory being performed
- Ability to assemble an effective program in terms of pacing and variety
- Requisite stage presence and ability to communicate with audience in performance

#### Entry to the Major

##### Admission

Applications for the Music BA are not being accepted at this time.

##### Requirements

##### Preparation for the Major

*Required:* Music M6A, M6B, M6C, with grades of C– or better, 20A, 20B, 20C, with grades of C or better, 12 units from courses 60A through 61A, and two years (12 units) of performance organizations utilizing students' major instruments (courses C185A through 185H and C186A through C186C), as assigned by the chair or designated faculty member.

##### The Major

*Required:* Music 120A, 120B, 120C, 140A, 140B, 140C, with grades of C or better, and six theory courses selected in consultation with a faculty adviser.

##### Policies

##### Preparation for the Major

All entering first years are required to take the Music Theory Assessment Examination either during New Student Sessions or during zero week of fall quarter. The examination score is used to determine eligibility and placement in first-year music core courses (Music M6A, M6B, M6C and 20A, 20B, 20C). Examination results may require enrollment in Music 3 as a requisite to both courses M6A and 20A. Entering transfer students with fewer than 15 units of

prior music theory must take the Music Theory Assessment Examination.

### Music Composition BA

#### Capstone Major

The Music Composition major is a designated capstone major. Through preparation for and execution of their senior capstone projects or recitals, students demonstrate mastery of program learning outcomes; as well as a level of proficiency appropriate for their role in the recitals and their understanding of performance practices appropriate to the repertory being performed, as acquired in previous coursework and through research. Students also display their ability to assemble an effective program in terms of pacing and variety, and demonstrate requisite stage presence along with an ability to communicate with their audience in performance.

#### Learning Outcomes

The Music Composition major has the following learning outcomes:

- Demonstrated artistic proficiency on a primary instrument or in voice
- Demonstrated excellent aural musicianship skills and a working knowledge of music theory and music history
- Composition of vocal, instrumental, and/or electronic music in varied genres and forms
- Demonstrated knowledge and application of vocal, instrumental, and electronic performance techniques and acoustical properties to scoring and orchestration, including proficiency with notation and sequencing software
- Demonstrated knowledge of counterpoint and polyphonic styles and textures in Renaissance, Baroque, Classical-Romantic, and/or contemporary practice
- Demonstrated fundamentals of conducting an ensemble, including basic patterns and gestural principles, scores analysis skills, and rehearsal techniques
- Composition of at least one substantial piece of music and presentation of it in a concert setting, such as a senior recital

#### Entry to the Major

##### Admission

For new and change-of-major applicants, students must submit a portfolio of compositions prior to the required audition and interview with the composition faculty.

##### Requirements

##### Preparation for the Major

*Required:* (1) *Musicianship*—Music M6A, M6B, M6C, with grades of C– or better; (2) *Theory*—Music 20A, 20B, 20C, with grades of C or better; (3) *Instrumental studio*—12 units from Music 60A through 60U in one instrument; (4) *Composition studio*—6 units of Music 66; (5) *Large conducted ensembles*—12 units from Music C185A through 185H using the student's major instrument, as assigned by the chair or designated faculty member.

## The Major

*Required:* (1) *Theory*—Music 120A, 120B, 120C, with grades of C or better; (2) *History*—Musicology 125A 125B, 125C, with grades of C or better; (3) *Advanced composition studio*—10 units of Music 166; (4) *Advanced composition concepts and techniques*—Music 104A or 104B, 106A, 106B, 116, 124A or 124B or 124C, C176; (5) *Electives*—at least 4 units selected from all upper-division ethnomusicology, global jazz studies, music, music industry, or musicology courses; (6) *Capstone composition recital*—Music 169. In senior year, each student must present a senior recital as part of the capstone course to be preceded by a scoring course (Music 124A or 124B or 124C); the 30-minute recital includes a printed program with notes. All recitals are videotaped and archived. Performances are evaluated by a jury.

## Policies

### Preparation for the Major

All entering first years are required to take the Music Theory Assessment Examination either during New Student Sessions or during zero week of fall quarter. The examination score is used to determine eligibility and placement in first-year music core courses (Music M6A, M6B, M6C and 20A, 20B, 20C). Examination results may require enrollment in Music 3 as a requisite to both courses M6A and 20A. Entering transfer students must take the Music Theory Assessment Examination to determine placement in the appropriate music theory sequence.

## Music Education BA

### Capstone Major

The Music Education major is a designated capstone major. Through preparation for and execution of their senior capstone projects or recitals, students demonstrate mastery of program learning outcomes; as well as a level of proficiency appropriate for their role in the recitals and their understanding of performance practices appropriate to the repertory being performed, as acquired in previous coursework and through research. Students also display their ability to assemble an effective program in terms of pacing and variety, and demonstrate requisite stage presence along with an ability to communicate with their audience in performance.

### Learning Outcomes

The Music Education major has the following learning outcomes:

- Demonstrated artistic proficiency on a primary instrument or in voice
- Demonstrated excellent aural musicianship skills and a working knowledge of music theory and music history
- Demonstrated knowledge of a varied repertory of music that includes Western, non-Western, and popular musical genres
- Development of pedagogical skills, assessment strategies, and musical leadership abilities

ties in classroom, instrumental, and choral settings

- Demonstrated basic skills in secondary performance areas and music technology
- Identification and description of major concepts and theories of educational psychology
- Development of the flexibility necessary to teach music in traditional and non-traditional settings

## Entry to the Major

### Admission

Applicants are required to audition in their primary performance medium and interview with the music education faculty.

### Requirements

#### Preparation for the Major

*Required:* (1) *Musicianship*—Music M6A, M6B, M6C, with grades of C– or better; (2) *Theory*—one of the following series approved by the division chair: Music 20A, 20B, and 20C, or 21A, 21B, and 21C with grades of C or better; (3) *Instrumental or vocal studio*—12 units from Music 60A through 60U for instrumentalists or 15 units of Music 61A and 61C for vocalists; (4) *Large conducted ensembles*—18 units from Music C185A through 185H, as assigned by the chair or music education faculty member.

### The Major

*Required:* (1) *Musicianship*—Music 102A, 102B, 102C with grades of C– or better; (2) *Theory*—Music 111A, 111B, 111C, with grades of C or better; (3) *History*—Musicology 125A, 125B, 125C, with grades of C or better; (4) *Music education*—Music 110A, 110B, 110C, 110D, 114A, 114B, 114C, 114D, 114J, 115A, 115B, 115C, 116, 117; (5) *Advanced instrumental or voice studio*—4 units from Music 160A through 160U for instrumentalists or 5 units of Music 161A and 161C for vocalists; (6) *Public recital*—2 units from Music 163A through 163V (vocalists must also enroll in Music 161C as corequisite to 163V) taken in the primary performance area; students must consult and receive approval from the assigned music education faculty member before scheduling recital, which may be scheduled as early as fall quarter of the junior year; and (7) *Capstone project*—Music 110D. All capstone projects in music education take the form of an electronic portfolio demonstrating mastery of program learning outcomes. The student's portfolio must be submitted before Music 110D is completed.

## Policies

### Preparation for the Major

All entering first years are required to take the Music Theory Assessment Examination either during New Student Sessions or during zero week of fall quarter. The examination score is used to determine eligibility and placement in first-year music core courses (Music M6A, M6B, M6C, and 20A, 20B, and 20C or 21A, 21B, and 21C). Examination results may require enrollment in Music 3 as a requisite to both courses M6A and 20A/21A. Entering transfer

students must take the Music Theory Assessment Examination to determine placement in the appropriate music theory sequence.

## Music Performance BM

### Capstone Major

The Music Performance major is a designated capstone major. Through preparation for and execution of their senior capstone projects or recitals, students demonstrate mastery of program learning outcomes; as well as a level of proficiency appropriate for their role in the recitals and their understanding of performance practices appropriate to the repertory being performed, as acquired in previous coursework and through research. Students also display their ability to assemble an effective program in terms of pacing and variety, and demonstrate requisite stage presence along with an ability to communicate with their audience in performance.

### Learning Outcomes

The Music Performance major has the following learning outcomes:

- Demonstrated artistic proficiency on a primary instrument or in voice
- Demonstrated excellent aural musicianship skills and a working knowledge of music theory and music history
- Demonstrated artistic proficiency and flexibility as performer and collaborator in varied settings, including chamber ensembles and large conducted ensembles
- Demonstrated knowledge of history and performance repertoire for a primary instrument or voice and representative works for chamber and large conducted ensembles from the majors periods of Western classical music, including contemporary compositions
- Demonstrated ability to apply knowledge of compositional form, historical context, performance practices, extended techniques, non-traditional notation, and current issues to performance of Western classical music
- Demonstrated knowledge about genres other than Western classic music or the scholarly study of music and/or the business practices associated with the music industry
- Conception, preparation, and performance of a public solo recital of Western classical music, including a printed program and program notes

## Entry to the Major

### Admission

Applicants are required to audition in their principal performance medium and interview with the music performance faculty.

### Requirements

#### Preparation for the Major

*Required:* (1) *Musicianship*—Music M6A, M6B, M6C, with grades of C– or better; (2) *Theory*—one of the following series approved by the area head/division chair: Music 20A, 20B, and 20C, or 21A, 21B, and 21C, with grades of C or better.



Based on instrument or voice, one concentration selected below:

**Brass, percussion, and woodwinds:** (1) *Instrumental studio*—12 units from Music 60A through 60J; (2) *Chamber ensembles*—4 units from Music C175A through C175G; (3) *Large conducted ensembles*—12 units from Music C185D through 185H.

**Keyboard:** (1) *Instrumental studio*—12 units from Music 60S, 60T, or 60U; (2) *Chamber ensembles, keyboard literature, and accompanying*—8 units from Music C171, C175A through C175G, or C186A; (3) *Large conducted ensembles*—6 units from Music C185A through 185H.

**Strings:** (1) *Instrumental studio*—12 units from Music 60K through 60R; (2) *Chamber ensembles*—6 units from Music C175A through C175G; (3) *Large conducted ensembles*—12 units from Music C185D or C185E.

**Voice:** (1) *Voice studio and voice coaching*—18 units of Music 61A and 61B; (2) *Singing diction*—Music 74A, 74B, 74C; (3) *Large conducted ensembles*—12 units from Music C185A through C185C; (4) *Language*—one college year—or at least one course at level three—of French, German, Italian, or Spanish, which may be used to fulfill the school language requirement.

### The Major

**Required:** (1) *Theory/Musicianship*—Select one series approved by the area head/division chair: Music 102A, 102B, and 102C, or 120A, 120B, and 120C, with grades of C or better; (2) *History*—Music 140A, 140B, 140C, with grades of C or better.

Based on instrument or voice, one concentration selected below:

**Brass, percussion, and woodwinds:** (1) *Advanced instrumental studio*—10 units from Music 160A through 160J; (2) *Chamber ensembles*—4 units from Music C175A through C175G; (3) *Large conducted ensembles*—12 units from Music C185D through 185H; (4) *Electives*—at least 8 units of upper-division electives from ethnomusicology, global jazz studies, music, music industry, or musicology; (5) *Capstone instrumental recital*—one course from Music 167A through 167J. In senior year, each student must present a senior recital as part of the capstone course; the 45–55-minute recital will include a printed program with notes.

**Keyboard:** (1) *Advanced instrumental studio*—10 units from Music 160S, 160T, or 160U; (2) *Chamber ensembles, keyboard literature, and accompanying*—8 units from Music C171, C175A through C175G, or C186A; (3) *Large conducted ensembles*—6 units from C185A through 185H; (4) *Electives*—at least 12 units of upper-division electives from ethnomusicology, global jazz studies, music, music industry, or musicology; (5) *Capstone instrumental recital*—one course from Music 167S, 167T, or 167U. In senior year, each student must present a senior recital as part of the capstone course; the 45–55-minute recital will include a printed program with notes.

**Strings:** (1) *Advanced instrumental studio*—10 units from Music 160K through 160R; (2) *Chamber ensembles*—6 units from Music

C175A through C175G; (3) *Large conducted ensembles*—12 units from Music C185D or C185E; (4) *Electives*—at least 8 units of upper-division electives from ethnomusicology, global jazz studies, music, music industry, or musicology; (5) *Capstone instrumental recital*—one course from Music 167K through 167R. In senior year, each student must present a senior recital as part of the capstone course; the 45–55-minute recital will include a printed program with notes.

**Voice:** (1) *Advanced voice studio and advanced voice coaching*—15 units of Music 161A and 161B; (2) *Advanced vocal repertoire, diction, and interpretation*—4 units from Music C158A through C158G; (3) *Large conducted ensembles*—12 units from Music C185A, C185B, or C185C; (4) *Electives*—at least 4 units of upper-division electives from ethnomusicology, global jazz studies, music, music industry, or musicology; (5) *Capstone voice recital*—Music 161B and 168. In senior year, each student must present a senior recital as part of the capstone course; the 45–55-minute recital will include a printed program with notes.

### Policies

#### Preparation for the Major

All entering first years are required to take the Music Theory Assessment Examination either during New Student Sessions or during zero week of fall quarter. The examination score is used to determine eligibility and placement in first-year music core courses (Music M6A, M6B, M6C, and 20A, 20B, and 20C, or 21A, 21B, and 21C). Examination results may require enrollment in Music 3 as a requisite to both courses M6A and 20A/21A. Entering transfer students must take the Music Theory Assessment Examination to determine placement in the appropriate music theory sequence. Choice of theory course series to be approved by area head/division chair.

#### Strings

For classical guitar, harp, and string bass, students may petition to substitute alternative courses if there are no suitable chamber ensembles offered during the academic year. For classical guitar, students may petition to substitute Music C185A, C185B, or appropriate ethnomusicology ensembles.

#### The Major

All recitals are videotaped and archived; performances are evaluated by a jury.

#### Strings

For classical guitar, harp, and string bass, students may petition to substitute alternative courses if there are no suitable chamber ensembles offered during the academic year. For classical guitar, students may petition to substitute Music C185A, C185B, or appropriate ethnomusicology ensembles.

## Graduate Majors

### Master of Music

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Music DMA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Music MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Music

### Lower-Division Courses

**3. Preparatory Music Theory.** (4) Lecture, four hours; laboratory, one hour. Course in music fundamentals, including musicianship, theory, and terminology. Letter grading.

**M6A-M6B-M6C. Introduction to Musicianship. (2–2)** (Same as Ethnomusicology M6A-M6B-M6C and Musicology M6A-M6B-M6C.) Laboratory, four hours. Preparation: placement examination. Course M6A is enforced requisite to M6B, which is enforced requisite to M6C. Students must receive grade of C– or better to proceed to next course in sequence. Introduction to musicianship through in-depth exploration of basic common musical elements and training in aural recognition, sight singing, dictation, and keyboard skills. Focus on topics such as tonal and modal harmony, rhythm, improvisation, composition, notation, and ear training to prepare students for later theory courses, participation in music ensembles, advanced study in music, and professional careers. Letter grading.

**7. Understanding Movie Music.** (4) Lecture, four hours; outside study, eight hours. Musical experience helpful, but not required. Brief historical survey of film music, with strong emphasis on recent development: Japanese animation, advertising, and MTV, as well as computer tools and digital scoring methods. Designed to inspire and inform those interested in movie music. Offered in summer only. P/NP or letter grading.

**M14. Introduction to Classical Music.** (5) (Same as Musicology M3.) Lecture, four hours; discussion, one hour. Survey of music of Western classical tradition, with emphasis on historical context, musical meanings, and creation of tradition itself. P/NP or letter grading.



**15. Art of Listening. (5)** Lecture, three hours; discussion, one hour; outside study, 11 hours. Acquisition of listening skills through direct interaction with live performance, performers, and composers. Relationship of listening to theoretical, analytical, historical, and cultural frameworks. Music as aesthetic experience and cultural practice. P/NP or letter grading.

**16. Hollywood Musical and American Dream. (4)** Lecture, three hours; discussion, one hour. Examination of composers, writers, and filmmakers whose creative efforts changed how world came to view American dream. Full features and music clips illustrate American life as seen through Hollywood musicals. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A. Music Theory I. (3)** Lecture, four hours. Preparation: passing score on departmental examination. Course 20A is enforced requisite to 20B, which is enforced requisite to 20C. Students must receive grade of C or better to proceed to next course in sequence. Theory: species counterpoint through fifth species; description of triads and inversions. P/NP or letter grading.

**20B. Music Theory II. (3)** Lecture, four hours. Enforced requisite: course 20A with grade of C or better. Theory: diatonic harmony through secondary dominants and diminished sevenths; modulations to dominant and relative keys; writing of four-part chorales; style composition in baroque dance forms; introduction to figured bass notation. P/NP or letter grading.

**20C. Music Theory III. (3)** Lecture, four hours. Enforced requisite: course 20B with grade of C or better. Theory: chromatic harmony including development of tonality, 1800 to 1850; appropriate analysis and style composition. P/NP or letter grading.

**21A-21B-21C. Project Approach to Music Theory I, II, III. (3-3-3)** Lecture, four hours. Requisite: passing score on departmental examination. Course 21A is enforced requisite to 21B, which is enforced requisite to 21C. Students must receive grade of C or better to proceed to next course in sequence. Theory fundamentals through project approach. Letter grading.

**30A-30B. History, Listening, and Survey of Piano Literature I, II. (2-2)** Seminar, two hours. Strongly recommended for undergraduate piano and music education majors with piano as their main instrument. Survey course covering standard piano literature and composers through listening and reading. Letter grading. **30A.** Baroque and Classical; **30B.** Romantic, Impressionistic, 20th-Century, and Contemporary.

**50. Alexander Technique. (2)** Lecture, four hours; outside preparation and practice, two hours. Limited to Ethnomusicology, Music, and Musicology majors. Introduction to principles of Alexander technique. Study of musician's postural attitude at instrument, including physical movement as application of theory. Designed to help instrumentalists and vocalists prevent injuries and performance anxiety. May be repeated with consent of instructor. Letter grading.

**60A-60U. Instrumental Studio. (2 each)** Studio, one hour; outside practice, six to eight hours. Limited to freshman/sophomore Music Performance majors and junior Music Education and Music Composition majors. Students must perform in one practicum during academic year. Grades are assigned by applied instructor in fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 12 units. P/NP or letter grading. **60A.** Flute; **60B.** Oboe; **60C.** Bassoon; **60D.** Clarinet; **60E.** Saxophone; **60F.** French Horn; **60G.** Trumpet; **60H.** Trombone; **60I.** Tuba/Euphonium; **60J.** Percussion; **60K.** Violin; **60L.** Viola; **60M.** Cello; **60N.** String Bass; **60O.** Harp; **60P.** Guitar; **60Q.** Lute; **60R.** Viola da Gamba; **60S.** Piano; **60T.** Organ; **60U.** Harpsichord.

**61A. Voice Studio. (2)** Studio, one hour; outside practice, six to eight hours. Corequisite: course 61B or 61C. Limited to lower-division Music Performance majors specializing in voice and Music Education majors. Emphasis on repertoire and improving performance. Grades are assigned by studio instructor in conjunc-

tion with student's vocal coach for fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 12 units. P/NP or letter grading.

**61B. Voice Coaching. (1)** Studio, one hour; outside practice, three hours. Corequisite: course 61A. Limited to lower-division Music Performance majors specializing in voice and Music Education majors. Emphasis on repertoire and improving performance. Grades are assigned by studio instructor in conjunction with student's vocal coach for fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 6 units. P/NP or letter grading.

**61C. Voice Coaching for Music Education Specialists. (.5)** Studio, 30 minutes; outside practice, 90 minutes. Corequisite: course 61A. Limited to lower-division Music Education majors. Emphasis on repertoire and improving performance. Grades are assigned by studio instructor in conjunction with student's vocal coach for fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 3 units. P/NP or letter grading.

**66. Composition Studio. (2)** Studio, one hour per week to be arranged with instructor; outside study, five hours. Enforced requisites: courses 20A, 20B, 20C. Limited to Music Composition students and designed for sophomores. One-on-one composition lessons with assignments and compositions tailored to student progress and level of achievement. Lessons address counterpoint, voice-leading, harmonic and melodic construction, orchestration, form, texture, style, notation, and performance feasibility. May be repeated twice for credit. P/NP or letter grading.

**74A-74B-74C. Introduction to Singing Diction. (2-2-2)** Studio/demonstration/performance, 90 minutes; outside study, four to five hours. Development of International Phonetic Alphabet (IPA) transcription skills, along with addressing issues of translation. Exploration of variety of vocal repertoire, including opera, art songs, early music, recitative, and folk songs. Transcription, translation, speaking, and singing of texts from pieces assigned in course, as well as from repertoire being prepared for juries. P/NP or letter grading.

**74A.** English and Italian. Introduction to basics of singing diction and development of English and Italian skills for beginning students. **74B.** German. Introduction to basics of singing diction and development of German skills for beginning students. **74C.** French. Introduction to basics of singing diction and development of French skills for beginning students.

**80A. Beginning Keyboard. (4)** Laboratory, five hours; preparation/practice, seven hours. Simple keyboard skills together with basic aspects of music theory and its practical application to keyboard: sight-reading, tonality, chords, scales, cadences, simple compositions, and improvisations. May be repeated for credit without limitation. Offered in summer only. P/NP or letter grading.

**80B. Intermediate Keyboard. (4)** Laboratory, five hours; preparation/practice, seven hours. Enforced requisite: course 80A. Review of basic keyboard concepts, with focus on developing comprehensive keyboard musicianship ranging from music theory, sight-reading, composing, improvising, analysis of form, study of musical terms and notations, chords, scales, cadences, transposing, and ear training. Offered in summer only. P/NP or letter grading.

**80E. Sight Singing and Ear Training. (4)** Laboratory, four hours. Designed for students of all ages and genres to improve their ability to sing by ear and/or read vocal music. Class is conducted as much as possible without instrumental accompaniment (i.e., a cappella), and special emphasis is placed on acquisition of skills related to relative pitch and recognition of intervals (i.e., relationships between pitches). Letter grading.

**80F. Beginning Guitar Class. (4)** Laboratory, five hours; preparation/practice, seven hours. Introduction to guitar techniques, accompanying, and arranging for guitar; coverage of note reading and tablature. May be repeated for credit without limitation. Offered in summer only. P/NP or letter grading.

**80S. Beginning Saxophone. (4)** Laboratory, five hours; preparation/practice, seven hours. Fundamentals of playing saxophone, basic music theory and terminology necessary for reading music notation, and basic overview of instrument's history. Offered in summer only. P/NP or letter grading.

**80V. Vocal Technique for Beginners. (4)** Laboratory, six hours; preparation/practice, six hours. Voice instruction for singers at beginning to intermediate level. Exploration of fundamentals of vocal technique, including overview of basics of proper breath control, resonance, care of voice, diction, and interpretation. Beginning vocal repertoire used as vehicle for understanding these concepts. May be repeated for credit without limitation. Offered in summer only. P/NP or letter grading.

**80W. Woodwind Technique for Beginners. (4)** Laboratory, six hours; preparation/practice, six hours. Woodwind instruction designed to give students knowledge of fundamental concepts and techniques of saxophone, clarinet, oboe, bassoon, and flute. Offered in summer only. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**M90T. Early Music Ensemble. (4)** (Same as Musicology CM90T.) Activity, four hours. Preparation: audition. Group performance of Western vocal and instrumental music from historical periods prior to 1800. Early instruments may be used at instructor's discretion. May be repeated for credit without limitation. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**102A-102B-102C. Advanced Musicianship I, II, III. (2-2-2)** Laboratory, four hours. Enforced requisites: courses M6A, M6B, M6C. Course 102A is enforced requisite to 102B, which is enforced requisite to 102C. Students must receive a grade of C- or better to proceed to next course in sequence. Advanced-level sight singing, sight reading, rhythm, melodic and harmonic dictation, tonal and modal improvisation, keyboard skills. Letter grading.

**M103. Creating Musical Community. (4)** (Same as Ethnomusicology M103, Global Jazz Studies M103, and Musicology M103.) Seminar, four hours; discussion, one hour. Limited to school of music majors. Faculty and students make music together in different modes. Students learn certain repertoire, refine it, and bring it to concert performance. Students critically engage musical literacies and notion of social contract that forms basis of musical notation. Drawing from American music folk game traditions, highlights complex history of this country and way in which entire body is used as resource when instruments are unavailable. Letter grading.

**104A. Modal Counterpoint. (3)** Lecture, three hours. Requisite: course 120C (accelerated section). In-depth exploration of styles and techniques of counterpoint of 15th and 16th centuries through writing and analysis of important forms of period, including species, canon, free counterpoint, cantus firmus, point of imitation, motet, ricercare, etc. Letter grading.

**104B. Special Topics in Counterpoint. (3)** Lecture, three hours. Requisite: course 120C (accelerated section). In-depth exploration of polyphonic styles and textures since 1750, with emphasis on late-19th- and 20th-century modes of expression, through writing and analysis. Letter grading.

**106A. Orchestration I. (4)** Discussion, three hours. Prerequisites: courses 120C (accelerated section), 123C. Ranges and characteristics of instruments, with exercises in scoring. P/NP or letter grading.

**106B. Orchestration II. (4)** Discussion, three hours. Prerequisites: courses 106A, 120C (accelerated section), 123C. Scoring and analysis for ensembles and full orchestra. P/NP or letter grading.

**C109A. Oboe Reed Making. (1)** Activity, one hour; outside study, two hours. Enrollment by consent of instructor. Introduction and overview of oboe reed making, including hands on training with tools and techniques necessary to develop and maintain oboe reeds. May be repeated for credit. May be concurrently scheduled with course C209A. P/NP or letter grading.

**C109B. Bassoon Reed Making. (1)** Activity, one hour; outside study, two to three hours. Enrollment by consent of instructor. Introduction, overview, and hands-on-training with tools and techniques necessary to develop and maintain bassoon reeds. May be repeated for credit. May be concurrently scheduled with course C209B. P/NP or letter grading.

**110A. Learning Approaches in Music Education. (4)** Lecture, two hours; activity, two hours; outside study, eight hours. Enforced prerequisite: course 20A. Introduction to music education by development of concepts, attitudes, and skills necessary to teach music and philosophical, historical, cultural, and psychological foundations of music education, with emphasis on learning theories and psychology of music learning. Contextualization of concepts by engaging in nonnotational modes of music learning, including systematic aural transmission and informal learning. Letter grading.

**110B. Musicality and Creativity in Childhood. (4)** Lecture, two hours; activity, two hours; outside study, eight hours. Prerequisites: courses 20A, 20B, 20C, 110A, 120A, 120B, 120C. Preparation of music education students for teaching music at preschool and elementary school levels. Development of understanding of developmental characteristics, diverse cultures, and learning needs of children and design of effective instructional strategies that are age-appropriate and responsive to children's background. Focus on practice of student-centered curriculum where students are active learners and teachers are facilitators to become proficient in providing children with music learning environment that is conducive to optimal growth in their musicality and creativity. Frequent field visits. Letter grading.

**110C. Comparative Study of Choral Music Education. (4)** Lecture, two hours; activity, one hour; fieldwork, one hour; outside study, eight hours. Prerequisites: courses 20A, 20B, 20C, 110A, 119A, 120A, 120B, 120C. Preparation of students for teaching choral music at middle and high school levels. Development of understanding of developmental characteristics, diverse cultures, and learning needs of adolescents and design of effective instructional strategies that are age-appropriate and responsive to students' background. Diverse practices and learning processes in choral music of American and world serve as basis of comparative study, with emphasis on comprehensive music education through performance. Frequent field visits. Letter grading.

**110D. Comparative Study of Instrumental Music Education. (4)** Lecture, two hours; activity, one hour; fieldwork, one hour; outside study, eight hours. Enforced prerequisites: courses 20A, 20B, 20C, 110A, 120A, 120B, 120C. Critical study and analysis of philosophy, history, organization, curriculum, and literature of music programs for elementary and secondary instrumental music instruction in traditional and nontraditional settings. Development of strategies and techniques to teach music in group settings. Completion of capstone project in form of electronic portfolio demonstrating mastery of program learning outcomes. Frequent field visits. Letter grading.

**111A. Music Theory through Improvisation. (3)** Lecture, four hours. Prerequisites: courses M6A, M6B, M6C, and 20A, 20B, and 20C, or 21A, 21B, and 21C. Course 111A is enforced prerequisite to 111B, which is enforced prerequisite to 111C. Students must receive grade of C or

better to proceed to next course in sequence. Theory through improvisation, technology, and arranging for ensembles. Letter grading.

**111B. Music Creation and Analyses through Technology. (3)** Lecture, four hours. Prerequisites: courses M6A, M6B, M6C, 111A (111A with grade of C or better), and 20A, 20B, and 20C, or 21A, 21B, and 21C. Students must receive grade of C or better to proceed to next course in sequence. Theory through improvisation, technology, and arranging for ensembles. Letter grading.

**111C. Arranging Music for Educational Settings. (3)** Lecture, four hours. Prerequisites: courses M6A, M6B, M6C, 111A, 111B (111A and 111B with grades of C or better), and 20A, 20B, and 20C, or 21A, 21B, and 21C. Theory through improvisation, technology, and arranging for ensembles. Letter grading.

**112. Guided Field Experiences in Music Education. (1)** Field studies, three hours. Initial field experiences for students preparing to teach and earn single subject certification in music. Novice teachers work under direct guidance of UCLA music education faculty members and practicing public school instructor to develop and deliver instruction in K-12 settings. P/NP grading.

**114A-114B. Study of Instrumental Techniques. (1-1)** Studio, three hours. Prerequisite or corequisite: course 20A. Applied studies in basic performance techniques and tutorial materials. Each course may be repeated once for credit. Letter grading. **114A.** High Strings. **114B.** Low Strings.

**114C-114D. Vocal Techniques for Music Education I, II. (1-1)** Studio, two hours; outside study, one hour. Letter grading. **114C.** Introduction to basic vocal techniques, breath and body, vocal mechanism, health and care of voice, and instructional techniques. **114D.** Requisite or corequisite: course 114C. Introduction to art of teaching voice, focusing on vocal instruction in choral classroom. Focus on application of vocal techniques to choral music teaching at K-12 school settings.

**114J. Piano Skill in Classroom. (1)** Activity, two hours. Designed for Music Education majors. Development of piano skills and competencies that enable students to function successfully in general music, instrumental ensemble, and choral ensemble classrooms. Letter grading.

**115A-115B-115C. Study of Instrumental Techniques. (2-2-2)** Studio, four hours; outside study, two hours. Applied studies in basic performance techniques and tutorial materials designed to give music education students knowledge to teach basic instrument concepts. Letter grading. **115A.** Woodwinds. **115B.** Brass. **115C.** Percussion.

**116. Introduction to Conducting. (2)** Lecture, three hours. Prerequisites: courses 20A, 20B, 20C, 120A. Fundamentals of conducting, including basic skills, techniques, analysis, and repertoire. P/NP or letter grading.

**117. Study and Conducting of Instrumental and Choral Literature. (2)** Lecture, three hours. Prerequisite: course 116. Study and practice of conducting both instrumental and choral repertoire. In addition to further development of conducting gestures, focus on score study techniques, rehearsal techniques, style, and interpretation as applied to choral and instrumental repertoire. Letter grading.

**C118A. Advanced Choral Conducting. (2)** Lecture, one hour; studio, two hours. Prerequisites: courses 116, 117. Conducting basics, baton technique, beat patterns, dynamics, score preparation and analysis. May be repeated once for credit. Concurrently scheduled with course C218A. P/NP or letter grading.

**C118B. Choral Techniques and Methods. (2)** Lecture, one hour; studio, two hours. Prerequisites: courses 116, 117, C118A. Vocal and choral pedagogy, vocalizing and warm-up techniques, diction, and rehearsal and audition techniques. May be repeated once for credit. Concurrently scheduled with course C218B. P/NP or letter grading.

**119. Jazz and Technology Pedagogy. (3)** Lecture, two hours; activity, two hours; outside study, five hours. Enforced prerequisites: courses 20A, 20B, 20C, 110A, 120A, 120B, 120C. Foundations for teaching

jazz by development of understanding of curriculum, rehearsal techniques, improvisation, and uses of technology in jazz education. Technology understanding includes basic concepts of sequencing, composition, ensemble performance, and creation of multimedia presentations using tablet (iPad) technology. Letter grading.

**120A. Music Theory IV. (4)** Lecture, four hours; discussion, four hours. Preparation: passing score on departmental first-year examination. Prerequisite: course 20C with grade of C (2.0) or better. Theory: baroque counterpoint including chorale prelude; two-part invention; exposition and first modulation of three-part invention; canonic principles; analysis of inventions, canons, and fugues. Musicianship: sight-singing of extended chromatic melodies; advanced harmonic dictation (diatonic and chromatic); keyboard harmonization of modulating melodies; elementary score reading. P/NP or letter grading.

**120B. Music Theory V. (4)** Lecture, four hours; discussion, four hours. Prerequisite: course 120A with grade of C (2.0) or better. Theory: advanced chromatic harmony including development of harmony from 1850; analytical projects; style composition. Musicianship: advanced score reading; advanced harmonic dictation; preparation for departmental examination. P/NP or letter grading.

**120C. Music Theory VI. (4)** Lecture, four hours; discussion, two hours; listening, two hours. Prerequisite: course 120B with grade of C (2.0) or better. 20th-century harmonic language, including nonfunctional harmony, polytonality, free atonality, serialism, and minimalism. P/NP or letter grading.

**121. Special Topics in 20th-Century Music. (4)** Lecture, three hours. Prerequisites: courses 20A, 20B, 20C, 120A, 120B, 120C. In-depth study of certain aspects of 20th-century music ranging from individual composers and schools to ideological or stylistic concerns. May be repeated once for credit. P/NP or letter grading.

**122. Speculative Music Theory. (4)** Seminar, three hours. Prerequisites: courses 20A, 20B, 20C, 120A, 120B, 120C. Techniques of tonal coherence studied through analysis and compositional exercises in styles of given periods. May be repeated once for credit. P/NP or letter grading.

**124A. Scoring for Symphony Orchestra. (4)** Discussion, three hours. Prerequisites: courses 106B, 120C (accelerated section), 123C. Practical applications in scoring for symphony orchestra. Preparation and production of parts and full scores. At least one reading by UCLA Philharmonia Orchestra scheduled. Letter grading.

**124B. Scoring for Wind Ensemble. (4)** Discussion, three hours. Prerequisites: courses 106B, 120C (accelerated section), 123C. Practical applications in scoring for large wind ensembles. Preparation and production of score and parts. May include percussion. At least one reading by UCLA Wind Ensemble scheduled. Letter grading.

**124C. Scoring and Arranging for Choral Ensemble. (4)** Discussion, three hours. Prerequisites: 106B, 120C (accelerated section), 123C. Practical applications in scoring and arranging for choral ensembles, including a capella as well as chorus with instruments. Preparation and production of score and parts. At least one reading by UCLA Chorale or other choral group scheduled. Letter grading.

**M131. Development of Latin Jazz. (4)** (Same as Ethnomusicology M131 and Global Jazz Studies M131.) Lecture, four hours; discussion, one hour. Survey of historical and stylistic development of musical style referred to today as Latin jazz. P/NP or letter grading.

**M134. Introduction to Armenian Music. (4)** (Same as Armenian M134 and Ethnomusicology M134.) Lecture, three hours. Some amount of formal music study and experience as vocalist or instrumentalist desirable but not essential. Introduction to history, tradition, and scope of music of Armenia. Focus on number of different genres and approaches, and interactions between music and culture, society, and history. P/NP or letter grading.

**140A-140B-140C. History and Analysis of Western Music. (5-5-5)** Lecture, four hours; discussion, one hour. Survey of Western music; examination of representative compositions within their cultural contexts and development of analytical methods appropriate to each repertory. Letter grading. **140A.** To 1700. Requisite: course M6C. Students must receive grade of C or better to proceed to next course in sequence. **140B.** 1700 to 1890. Enforced requisite: course 140A with grade of C or better. **140C.** 1890 to Present. Enforced requisite: course 140B with grade of C or better.

**C150. Keyboard Skills for Pianists. (2)** Activity, two hours; outside study, four hours. Applied music course with focus on necessary skills for piano performance. Areas include sight playing, score reading, transposition, figured bass, harmonization, improvisation, score reduction, and ensemble issues. Concurrently scheduled with course C450. P/NP or letter grading.

**C155. Instrumental and Piano Duo Repertoire. (2)** Activity, two hours; outside study, four hours. Performance-based course that develops repertoire and experience in collaborative performance for pianists and instrumentalists. Activities include weekly score preparation, weekly rehearsals, regular coaching, and performances for lessons, juries, recitals, master classes, auditions, and other related activities. Regular coaching with faculty members, weekly performance workshop, and rehearsals. Concurrently scheduled with course C455. P/NP or letter grading.

**C158A-C158G. Advanced Vocal Repertoire, Diction, and Interpretation. (2)** Activity, two hours; outside study, four hours. Enforced requisite: course 74C. Performance-based course that develops repertoire and experience in collaborative performance for pianists and vocalists. Activities include text and score preparation, diction, weekly rehearsals, regular coaching, and performances for lessons, juries, recitals, master classes, auditions, and other related activities. Intensive diction study incorporated. Regular coaching with faculty members, weekly performance class, and rehearsals. May be repeated for maximum of 8 units. Concurrently scheduled with courses C458A-C458G. P/NP or letter grading. **C158A.** English. **C158B.** French. **C158C.** German. **C158D.** Italian. **C158E.** Spanish. **C158F.** Russian. **C158G.** Other Languages.

**160A-160U. Advanced Instrumental Studio. (2 each)** Studio, one hour; outside practice, six to eight hours. Limited to junior/senior Music Performance majors and junior Music Education and Music Composition majors. Students must perform in noon concert once during their junior year. Grades are assigned by applied instructor in fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 10 units. P/NP or letter grading. **160A.** Flute; **160B.** Oboe; **160C.** Bassoon; **160D.** Clarinet; **160E.** Saxophone; **160F.** French Horn; **160G.** Trumpet; **160H.** Trombone; **160I.** Tuba/Euphonium; **160J.** Percussion; **160K.** Violin; **160L.** Viola; **160M.** Cello; **160N.** String Bass; **160O.** Harp; **160P.** Guitar; **160Q.** Lute; **160R.** Viola da Gamba; **160S.** Piano; **160T.** Organ; **160U.** Harpsichord.

**161A. Advanced Voice Studio. (2)** Studio, one hour; outside practice, six to eight hours. Corequisite: course 161B or 161C. Limited to upper-division Music Education majors and Music Performance majors specializing in voice. Voice techniques and health, including breath control, pitch accuracy, range, resonance, and flexibility. May be repeated for credit for maximum of 10 units. P/NP or letter grading.

**161B. Advanced Vocal Coaching. (1)** Studio, one hour; outside practice, three hours. Corequisite: course 161A. Limited to upper-division Music Performance majors specializing in voice. Emphasis on repertoire and improving performance. Grades are assigned by studio instructor in conjunction with student's vocal coach for fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 6 units. P/NP or letter grading.

**161C. Advanced Vocal Coaching for Music Education Specialists. (.5)** Studio, 30 minutes; outside practice, 90 minutes. Corequisite: course 161A. Limited to upper-division Music Education majors. Emphasis on repertoire and improving performance. Grades are assigned by studio instructor in conjunction with stu-

dent's vocal coach for fall and winter quarters and by jury examination in spring quarter. May be repeated for maximum of 1.5 units. P/NP or letter grading.

**163A-163V. Recital for Music Education Majors. (2 each)** Studio, one hour; outside practice, six to eight hours. Limited to junior/senior Music Education majors. Preparation for and performance of recital comprising 30 minutes of music, including printed program. Recital is videotaped, archived, and evaluated by jury; written feedback is provided to student within two weeks of recital. Letter grading. **163A.** Flute. **163B.** Oboe. **163C.** Bassoon. **163D.** Clarinet. **163E.** Saxophone. **163F.** French Horn. **163G.** Trumpet. **163H.** Trombone. **163I.** Tuba/Euphonium. **163J.** Percussion. **163K.** Violin. **163L.** Viola. **163M.** Cello. **163N.** String Bass. **163O.** Harp. **163P.** Guitar. **163Q.** Lute. **163R.** Viola da Gamba. **163S.** Piano. **163T.** Organ. **163U.** Harpsichord. **163V.** Voice. Corequisite: course 161C.

**166. Advanced Composition Studio. (2)** Studio, one hour; outside study, five hours. Enforced requisite: course 66 (6 units). Limited to junior/senior music composition students. One-on-one composition lessons with assignments and compositions tailored to student progress and level of achievement. Lessons address counterpoint, voice-leading, harmonic and melodic construction, orchestration, form, texture, style, notation, and performance feasibility. May be repeated for credit. P/NP or letter grading.

**167A-167U. Capstone Instrumental Recital. (2 each)** Studio, one hour; outside practice, six to eight hours. Limited to senior Music Performance majors. Planning and completion of senior capstone recital comprising 45 to 55 minutes of music, including printed program. Preparation for capstone recital, as well as individual and group lessons. Recital is videotaped, archived, and evaluated by jury; written feedback is provided to student within two weeks of recital. Letter grading. **167A.** Flute. **167B.** Oboe. **167C.** Bassoon. **167D.** Clarinet. **167E.** Saxophone. **167F.** French Horn. **167G.** Trumpet. **167H.** Trombone. **167I.** Tuba/Euphonium. **167J.** Percussion. **167K.** Violin. **167L.** Viola. **167M.** Cello. **167N.** String Bass. **167O.** Harp. **167P.** Guitar. **167Q.** Lute. **167R.** Viola da Gamba. **167S.** Piano. **167T.** Organ. **167U.** Harpsichord.

**168. Capstone Voice Recital. (2)** Studio, one hour; outside practice, six to eight hours. Corequisite: course 161B. Limited to senior Music Performance majors. Planning and completion of senior capstone recital comprising 45 to 55 minutes of music, including printed program. Preparation for capstone recital, as well as individual and group lessons. Recital is videotaped, archived, and evaluated by jury; written feedback is provided to student within two weeks of recital. Letter grading.

**169. Capstone Composition Recital. (2)** Studio, one hour; outside study, five hours. Enforced requisites: courses 124A or 124B or 124C, and 166 (at least 10 units). Limited to senior Music Composition majors. Planning and completion of senior capstone recital comprising at least 30 minutes of original music with program notes. Preparation for capstone recital, as well as composition lessons. Recital is videotaped, archived, and evaluated by jury; written feedback is provided to student within two weeks of recital. Letter grading.

**C171. Selected Topics in Keyboard Literature. (2)** Lecture, two hours. Enforced corequisite: one course from 60S, 60T, 60U, 160S, 160T, 160U. In-depth study of selected topics in keyboard literature, concentrating on problems of performance through analysis, historical and comparative studies, and actual performances by participants. May be repeated for credit. May be concurrently scheduled with course C271. P/NP or letter grading.

**C175A-C175G. Chamber Ensembles. (1 each)** Activity, one to two hours. Preparation: audition. Students must be at advanced level of their instrument to participate. Applied study of performance practices of literature appropriate to ensembles. Total of 12 units may be applied toward degree requirements for music performance students. May be concurrently scheduled with courses C485A-C485G. P/NP or letter

grading. **C175A.** Brass. **C175B.** Guitar. **C175C.** Piano. **C175D.** Percussion. **C175E.** Strings. **C175F.** Woodwinds. **C175G.** Flux Contemporary.

**C176. Electronic Music Composition. (4)** Lecture, three hours; laboratory, three hours. Preparation: advanced experience and accomplishment in serious composition (art music), two years of music theory. Limited to music composition majors. Exercises in electroacoustic orchestration, meta-pitch composition, notation software (Sibelius), sequencing and film scoring software (Logic), text collages (ProTools), and final project. May be concurrently scheduled with course C226. P/NP or letter grading.

**CM182. Music Industry. (4)** (Same as Ethnomusicology CM182, Musicology CM186, and Music Industry M182.) Lecture, four hours; discussion, one hour; outside study, seven hours. Limited to Ethnomusicology, Music, and Musicology majors. Examination of influence of music industry on way music is created, performed, listened to, evaluated, and used today. Historical approach taken, beginning with music published in 18th century and continuing through development of audio recordings to MTV and popular music today. Concurrently scheduled with course CM282. Letter grading.

**C185A. UCLA Chorale. (2)** Activity, four hours. Preparation: audition. Large mixed ensemble performing choral music of all periods appropriate for concert choral ensemble. May be repeated for credit without limitation. May be concurrently scheduled with course C480A. P/NP or letter grading.

**C185B. Chamber Singers. (2)** Activity, four hours. Preparation: audition. Designed primarily for Music Performance majors. Select mixed ensemble performing chamber choral music of all periods. May be repeated for credit without limitation. May be concurrently scheduled with course C480B. P/NP or letter grading.

**C185C. Opera Workshop. (2)** Activity, six hours. Preparation: audition. Rehearsal and performance of scenes and complete operas, as well as repertoire, stage movement, and foreign language diction coaching. May be repeated for credit without limitation. May be concurrently scheduled with course C480C. P/NP or letter grading.

**C185D. Symphony Orchestra. (2)** Activity, three hours. Preparation: audition. Group performance of symphonic orchestral literature. May be repeated for credit without limitation. May be concurrently scheduled with course C480D. P/NP or letter grading.

**C185E. Philharmonia. (2)** Activity, six hours. Preparation: audition. Designed primarily for Music Performance majors. Group performance of symphonic orchestral literature, as well as orchestral accompaniment for operatic and major choral works. May be repeated for credit without limitation. May be concurrently scheduled with course C480E. P/NP or letter grading.

**185F. Symphonic Band. (2)** Activity, two hours. Preparation: audition. Group performance of instrumental music scored for band. May be repeated for credit without limitation. P/NP or letter grading.

**C185G. Wind Ensemble. (2)** Activity, six hours. Preparation: audition. Group performance of concert literature for wind ensemble. May be repeated for credit without limitation. May be concurrently scheduled with course C480G. P/NP or letter grading.

**185H. Marching and Varsity Bands. (2)** Activity, six hours. Preparation: audition. Group performance of special band arrangements for football and basketball games as well as special events. May be repeated for credit without limitation. P/NP or letter grading.

**C186A. Piano/Keyboard Accompanying. (2)** Activity, four hours; outside study, two hours. Collaboration with large ensembles, instrumentalists, and/or vocalists in role of accompanists. Performance includes, but is not limited to, lessons, rehearsals, special studio performance projects, master classes, concerts, auditions, juries, and recitals. May be repeated for maximum of 12 units. Concurrently scheduled with course C484A. P/NP or letter grading.

**C186B. Guitar Accompanying. (2)** Activity, four hours; outside study, two hours. Collaboration with instrumentalists and/or vocalists in role of accompanists.

Performance includes, but is not limited to, lessons, rehearsals, special studio performance projects, master classes, concerts, auditions, juries, and recitals. May be repeated for credit without limitation. Concurrently scheduled with course C484B. P/NP or letter grading.

**C186C. Harp Accompanying. (2)** Activity, four hours; outside study, two hours. Collaboration with instrumentalists and/or vocalists in role of accompanists. Performance includes, but is not limited to, lessons, rehearsals, special studio performance projects, master classes, concerts, auditions, juries, and recitals. May be repeated for credit without limitation. Concurrently scheduled with course C484C. P/NP or letter grading.

**C188. Seminar: Special Topics in Music. (4)** (Formerly numbered 188.) Seminar, three hours. Exploration of topics in music through variety of approaches that may include projects, performances, readings, discussions, research papers, and oral presentations. Topics announced in advance. May be repeated for credit. May be concurrently scheduled with C292. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**195. Community or Corporate Internships in Music. (2 to 4)** Tutorial, six hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with supervising instructor and submit periodic reports of their work experiences. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Music. (2 or 4)** Tutorial, one hour. Preparation: 3.0 grade-point average. Limited to seniors. Individual intensive study in music, with scheduled meetings to be arranged between faculty member and student. Tangible evidence of mastery of subject matter (research project) required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M201. Repertory and Analysis. (2)** (Same as Musicology M201.) Seminar, two hours. Requisite or corequisite: Musicology 200A. Exploration of defined repertory through readings and analysis. Specific topics vary. May be repeated for credit. S/U grading.

**202. Analysis for Performers. (4)** Lecture, three hours; outside study, nine hours. Designed for graduate students. Survey of analytical techniques and approaches required for professional performers, including phrase structure, harmonic rhythm and pro-

longation, small and large forms, theories of musical coherence, and understanding of styles. Letter grading.

**203. Notation and Performance. (4)** Lecture, three hours; outside study, nine hours. Designed for graduate music students. Survey analysis of evidence performers use to make their interpretive decisions in performance of vocal and instrumental music of European tradition. Topics include editions, treatises, tempo indications, expressive notation, use and influence of recordings, composer-performer relationship, and nonstandard notation. Letter grading.

**204. Music Bibliography for Performers. (4)** Lecture, three hours; outside study, nine hours. Designed for graduate music performance students. Survey of general bibliographic techniques in music, with emphasis on materials for performing musicians. Letter grading.

**C209A. Oboe Reed Making. (1)** Activity, one hour; outside study, two hours. Enrollment by consent of instructor. Introduction and overview of oboe reed making, including hands on training with tools and techniques necessary to develop and maintain oboe reeds. May be repeated for credit. May be concurrently scheduled with course C109A. S/U or letter grading.

**C209B. Bassoon Reed Making. (1)** Activity, one hour; outside study, two to three hours. Enrollment by consent of instructor. Introduction, overview, and hands-on-training with tools and techniques necessary to develop and maintain bassoon reeds. May be repeated for credit. May be concurrently scheduled with course C109B. S/U or letter grading.

**C218A. Advanced Choral Conducting. (2)** Lecture, one hour; studio, two hours. Requisites: courses 116, 117. Conducting basics, baton technique, beat patterns, dynamics, score preparation and analysis. May be repeated once for credit. Concurrently scheduled with course C118A. Letter grading.

**C218B. Choral Techniques and Methods. (2)** Lecture, one hour; studio, two hours. Requisites: courses 116, 117, C218A. Vocal and choral pedagogy, vocalizing and warm-up techniques, diction, and rehearsal and audition techniques. May be repeated once for credit. Concurrently scheduled with course C118B. Letter grading.

**C226. Electronic Music Composition. (4)** Lecture, three hours; laboratory, three hours. Preparation: advanced experience and accomplishment in serious composition (art music), two years of music theory. Designed for graduate students. Limited enrollment. Exercises in electroacoustic orchestration, meta-pitch composition, notation software (Sibelius), sequencing and film scoring software (Logic), text collages (Pro-Tools), and final project. May be concurrently scheduled with course C176. S/U or letter grading.

**251. Seminar: Orchestration. (4)** Seminar, three hours. Advanced orchestration for large ensembles; analysis of orchestral literature. Letter grading.

**252. Seminar: Composition. (4)** Seminar, three hours. Compositional projects for varying acoustic instrumental and vocal ensembles. Students expected to perform their compositions from sketches at piano or present notation files of work-in-progress with playback file, where appropriate. Performance of completed works in graduate composition concerts by UCLA student performers. S/U or letter grading.

**253. Seminar: Special Topics in Composition and Theory. (4)** Seminar, three hours. Intensive exploration of specialized aspects of composition. May be repeated for credit. S/U or letter grading.

**254. Advanced Music Analysis: Pre-Tonal Music. (4)** Seminar, three hours. Designed to provide graduate composition students with in-depth exposure to complex and rich works of late Middle Ages through dawn of baroque era. Exploration of analytical techniques and methods not commonly used in analysis of works of tonal and post-tonal periods, and approaches to musical structures used by composers before modern tonal harmonic syntax had fully developed. Letter grading.

**255. Advanced Music Analysis: Tonal Music. (4)** Seminar, three hours. Discussion of theoretic approaches to and analysis of selected works of common practice era. Analysis of assigned pieces using various theoretic approaches discussed and presentation of analyses in class. Letter grading.

**256. Advanced Music Analysis: Post-Tonal Music. (4)** Seminar, three hours. Designed for graduate music students. Discussion of theoretic approaches to and analysis of selected works of 20th or 21st century. Analysis of assigned pieces using various theoretic approaches discussed and presentation of analyses in class. Letter grading.

**260A. Seminar: Composition for Motion Pictures and Television. (6)** Seminar, three hours; laboratory, three hours. Practical experience in composing for commercial movies. Difference between underscore and source music and discussion of surrealist effect when they merge, as in MTV, dream sequences, or montages. Study of three principal areas of filmmaking—preproduction, production (shooting), and postproduction. Examples from classic movies and discussion of their scores. Composition of actual cues for acoustic instruments coordinated to picture to be term project. Separate cues involve dialogue, melodrama, comedy, chase, memory montage, and tension. Letter grading.

**260B. Seminar: Composition for Motion Pictures and Television. (6)** Seminar, three hours; laboratory, three hours. Focus on task of completing one entire score for television episode or original student film. Discussion of recent television shows. Composition of one original title song and short cues to someone else's song required. Term assignment involves student orchestra recording to picture, designed to approximate actual conditions of completing professional Hollywood assignment, from spotting to scoring. Letter grading.

**261A-261J. Problems in Performance Practices. (4 each)** Seminar, three hours; outside study, nine hours. Limited to graduate performance students. Investigation of primary source readings in performance practices as related to period; analytical reports and practical applications in class demonstrations. May be repeated for credit. Letter grading. **261A.** Medieval; **261B.** Renaissance; **261C.** Baroque; **261D.** Classical; **261E.** Romantic; **261F.** Contemporary; **261J.** Jazz.

**266. Graduate Composition Studio. (4)** Studio, one hour arranged with instructor; outside study, 11 hours. Limited to graduate composition students. One-on-one composition lessons, with assignments and compositions tailored to each student's progress and level of achievement, addressing counterpoint, voice-leading, harmonic and melodic construction, orchestration, form, texture, style, notation, and performance feasibility of compositions worked on at advanced level. Presentation of at least one composition composed during course in graduate composition concert during academic year. May be repeated for credit without limitation. S/U or letter grading.

**270A-270G. Seminars: Music Education. (6 each)** Seminar, three hours. May be repeated for credit without limitation. S/U or letter grading. **270A.** History; **270B.** Non-Western Musics; **270C.** Curriculum Innovations; **270D.** Tests and Measurements; **270E.** Choral Literature; **270F.** Instrumental Literature; **270G.** General Topics.

**C271. Selected Topics in Keyboard Literature. (2)** Lecture, two hours. Enforced corequisite: course 460S or 460T or 460U. In-depth study of selected topics in keyboard literature, concentrating on problems of performance through analysis, historical and comparative studies, and actual performances by participants. May be repeated for credit. May be concurrently scheduled with course C171. S/U or letter grading.

**CM282. Music Industry. (4)** (Same as Ethnomusicology CM288 and Musicology CM288.) Lecture, four hours; discussion, one hour; outside study, seven hours. Limited to Ethnomusicology, Music, and Musicology majors. Examination of influence of music industry on way music is created, performed, listened to, evaluated, and used today. Historical approach taken, beginning with music published in 18th century



and continuing through development of audio recordings to MTV and popular music today. Concurrently scheduled with course CM182. Letter grading.

**290. Composition Forum. (2)** Seminar, two hours. Weekly forum to present professional composers of range of mediums, including large ensemble vocal and/or instrumental works, chamber music, electronic music, and film/television, as guest lecturers. Letter grading.

**C292. Seminar: Special Topics in Music. (4)** (Formerly numbered 292.) Seminar, three hours. Exploration of topics in music through variety of approaches that may include projects, performances, readings, discussions, research papers, and oral presentations. Topics announced in advance. May be repeated for credit. May be concurrently scheduled with C188. S/U or letter grading.

**330. Introduction to Orff Schulwerk. (2)** Lecture, 10 hours; discussion, five hours; laboratory, 15 hours. Intended for teachers of music, church musicians, and music therapists who have had little or no previous experience with Orff Schulwerk. Introduction to Orff Schulwerk, including history, philosophy, and teaching processes of this approach to music instruction for children. Offered in summer only. S/U or letter grading.

**331A-331B-331C. Orff Schulwerk Training Courses. (4-4-4)** Lecture, four hours; discussion, one hour. Requisite: course 330. Course 331A is requisite to 331B, which is requisite to 331C. In-depth courses in teaching of Orff Schulwerk approach to music instruction for children. Students who successfully complete each course are eligible for certification at that level through American Orff Schulwerk Association. S/U or letter grading. **331A.** Level I (Beginning); **331B.** Level II (Intermediate); **331C.** Level III (Advanced).

**341. Conducting for High School and College Band/Wind Ensemble Teachers. (2)** Lecture, two and one half hours. Comprehensive view of current trends in band/wind ensemble programs, including nonverbal communication, conducting, and rehearsal techniques. Study of new and recently published literature and discussions of administration of band/wind ensemble programs. May be repeated for credit without limitation. S/U or letter grading.

**342. Contemporary Marching Band. (1)** Lecture, two hours. Innovative approaches to marching band programs for high school and college teachers, including creative approaches to marching and drill design and use of microcomputers. May be repeated for credit without limitation. S/U or letter grading.

**343. Effective and Creative String Teaching. (2)** Lecture, 24 hours. Comprehensive course for teachers of string classes and string orchestras at elementary, junior high, and high school levels. Topics include development of instructional techniques for violin, viola, cello, and bass; critical examination of current pedagogical materials; and reading sessions of recently published music for string orchestra. May be repeated for credit without limitation. Offered in summer only. S/U or letter grading.

**343L. Effective and Creative String Teaching Laboratory. (1)** Laboratory, 12 hours. Exploration of string orchestra, ensemble, and chamber music literature appropriate for elementary, junior high, and high schools. Examination of this literature in reading and discussion sessions. May be repeated for credit without limitation. Offered in summer only. S/U or letter grading.

**345. Symposium on Art of Choral Music. (2)** Lecture, two and one half hours. Symposium for college, high school, and junior high school choral directors on development of practical techniques for solving real challenges in choral conducting and teaching. Topics include innovative choral methods, choral conducting, vocal pedagogy, voice classification, and survey of standard and current choral literature. S/U or letter grading.

**350A. Introduction to Computer-Assisted Instruction of Music. (2)** Lecture, three hours; laboratory, two hours. Introduction to instructional uses of computers in music classroom, with emphasis on practical information necessary to intelligently purchase and implement microcomputers in schools. Courseware to be experienced and reviewed, jargon defined and illus-

trated, and practical hands-on experience obtained. May be repeated for credit without limitation. Offered in summer only. S/U or letter grading.

**350B. Exploration of MIDI Computer Resources: Keyboards and Synthesizers. (2)** Lecture, two hours; laboratory, three hours. Creative use of MIDI-based synthesizers under computer control. Exploration of available hardware resources allied with various software sequencing packages. Use of software for computer-based music printing. Hands-on experience. May be repeated for credit without limitation. Offered in summer only. S/U or letter grading.

**371. Marching Band in Secondary Education. (2)** Lecture, two hours. Study of contemporary marching band as component of music curriculum in secondary education, including current approaches, practices, and problems associated with marching bands, as well as historical perspective. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**401. New Music Forum. (2)** Tutorial/laboratory, two hours. Preparation: one year of graduate study in music at UCLA. Interactive course in preparation and performance of premiere work especially composed for graduate performer or performers by graduate composer at UCLA. Letter grading.

**C450. Keyboard Skills for Pianists. (2)** Activity, two hours; outside study, four hours. Applied music course with focus on necessary skills for piano performance. Areas include sight playing, score reading, transposition, figured bass, harmonization, improvisation, score reduction, and ensemble issues. Concurrently scheduled with course C150. Letter grading.

**C455. Instrumental and Piano Duo Repertoire. (2)** Activity, two hours; outside study, four hours. Performance-based course that develops repertoire and experience in collaborative performance for pianists and instrumentalists. Activities include weekly score preparation, weekly rehearsals, regular coaching, and performances for lessons, juries, recitals, master classes, auditions, and other related activities. Regular coaching with faculty members, weekly performance workshop, and rehearsals. Concurrently scheduled with course C155. Letter grading.

**C458A-C458G. Advanced Vocal Repertoire, Diction, and Interpretation. (2)** Activity, two hours; outside study, four hours. Performance-based course that develops repertoire and experience in collaborative performance for pianists and vocalists. Activities include text and score preparation, diction, weekly rehearsals, regular coaching, and performances for lessons, juries, recitals, master classes, auditions, and other related activities. Intensive diction study incorporated. Regular coaching with faculty members, weekly performance class, and rehearsals. May be repeated for maximum of 8 units. Concurrently scheduled with courses C158A-C158G. Letter grading. **C458A.** English. **C458B.** French. **C458C.** German. **C458D.** Italian. **C458E.** Spanish. **C458F.** Russian. **C458G.** Other Languages.

**460A-460V. Graduate Instrumental Studio. (6 each)** Studio, one hour; performance laboratory/outside study, 17 hours. Limited to graduate performance students. Individual instruction. Intensive study and preparation of musical literature in area of specialization. May be repeated for credit. Letter grading. **460A.** Flute; **460B.** Oboe; **460C.** Bassoon; **460D.** Clarinet; **460E.** Saxophone; **460F.** French Horn; **460G.** Trumpet; **460H.** Trombone; **460I.** Tuba/Euphonium; **460J.** Percussion; **460K.** Violin; **460L.** Viola; **460M.** Cello; **460N.** String Bass; **460O.** Harp; **460P.** Guitar; **460Q.** Lute; **460R.** Viola da Gamba; **460S.** Piano; **460T.** Organ; **460U.** Harpsichord; **460V.** Fortepiano.

**461A. Graduate Voice Studio. (6)** Studio, one hour; performance laboratory/outside study, 17 hours. Corequisite: course 461B. Limited to graduate voice students. Voice techniques and health, including breath control, pitch accuracy, range, resonance, and flexibility. Letter grading.

**461B. Graduate Voice Coaching. (1)** Studio, one hour; outside practice, three hours. Corequisite: course 461A. Limited to graduate voice students. Emphasis on repertoire and improving performance. Grades are assigned by studio instructor in conjunction with student's vocal coach for fall and winter quarters and by jury examination in spring quarter. Letter grading.

**466. Graduate Instruction in Performance: Jazz. (6)** Studio, one hour; performance laboratory/outside study, 17 hours. Limited to graduate performance students. Individual instruction. Intensive study and preparation of musical literature in area of specialization. May be repeated for credit. Letter grading.

**469. Instrumental Pedagogy. (4)** Lecture, three hours; outside study and preparation, nine hours. Preparation: advanced proficiency on one musical instrument. Designed for graduate music students. Study of art of teaching musical instruments, including discussions of philosophy of teaching, learning process itself, and teaching of musical interpretation. Individualized study of various considerations, such as physical/technical aspects and pedagogical repertoire, peculiar to teaching student's primary instrument. Letter grading.

**471. Vocal Pedagogy. (4)** Lecture, three hours; discussion, one hour. Preparation: advanced proficiency in voice. Designed for graduate music students. Study of teaching techniques for voice, including thorough investigation of vocal mechanism and its use, plus study of noted teachers of past and present. Further emphasis on practical teaching experience in class. Letter grading.

**472. Master Class in Opera. (6)** Studio, three hours; outside study, 15 hours. Limited to graduate performance students. Intensive study and preparation of opera literature. May be repeated for credit. S/U or letter grading.

**475. Master Class in Conducting. (6)** Studio, three hours; outside study, 15 hours. Limited to graduate performance students. Intensive study and preparation of musical literature in specialized field of conducting. May be repeated for credit. S/U or letter grading.

**C480A. UCLA Chorale. (2)** Activity, four hours. Preparation: audition. Large mixed ensemble performing choral music of all periods appropriate for concert choral ensemble. May be repeated for credit without limitation. May be concurrently scheduled with course C185A. S/U or letter grading.

**C480B. Chamber Singers. (2)** Activity, four hours. Preparation: audition. Select mixed ensemble performing chamber choral music of all periods. May be repeated for credit without limitation. May be concurrently scheduled with course C185B. S/U or letter grading.

**C480C. Opera Workshop. (2)** Activity, six hours. Preparation: audition. Rehearsal and performance of scenes and complete operas, as well as repertoire, stage movement, and foreign language diction coaching. May be repeated for credit without limitation. May be concurrently scheduled with course C185C. S/U or letter grading.

**C480D. Symphony Orchestra. (2)** Activity, four hours. Preparation: audition. Group performance of symphonic orchestral literature. May be repeated for credit without limitation. May be concurrently scheduled with course C185D. S/U or letter grading.

**C480E. Philharmonia. (2)** Activity, six hours. Preparation: audition. Group performance of symphonic orchestral literature, as well as orchestral accompaniment for operatic and major choral works. May be repeated for credit without limitation. May be concurrently scheduled with course C185E. S/U or letter grading.

**C480G. Wind Ensemble. (2)** Activity, six hours. Preparation: audition. Designed for MM and DMA students. Group performance of concert literature for wind ensemble. May be repeated for credit without limitation. May be concurrently scheduled with course C90G. S/U or letter grading.

**C484A. Piano/Keyboard Accompanying. (2)** Activity, four hours; outside study, two hours. Collaboration with large ensembles, instrumentalists, and/or vocalists in role of accompanists. Performance includes, but is not limited to, lessons, rehearsals, special studio

performance projects, master classes, concerts, auditions, juries, and recitals. May be repeated for maximum of 12 units. Concurrently scheduled with course C186A. S/U or letter grading.

**C484B. Guitar Accompanying. (2)** Activity, four hours; outside study, two hours. Collaboration with instrumentalists and/or vocalists in role of accompanists. Performance includes, but is not limited to, lessons, rehearsals, special studio performance projects, master classes, concerts, auditions, juries, and recitals. May be repeated for credit without limitation. Concurrently scheduled with course C186B. S/U or letter grading.

**C484C. Harp Accompanying. (2)** Activity, four hours; outside study, two hours. Collaboration with instrumentalists and/or vocalists in role of accompanists. Performance includes, but is not limited to, lessons, rehearsals, special studio performance projects, master classes, concerts, auditions, juries, and recitals. May be repeated for credit without limitation. Concurrently scheduled with course C186C. S/U or letter grading.

**C485A-C485G. Chamber Ensembles. (1 each)** Activity, one to two hours. Preparation: audition. Students must be at advanced level of their instrument to participate. Applied study of performance practices of literature appropriate to ensembles. Total of 12 units may be applied toward degree requirements for music performance students. May be concurrently scheduled with courses C175A-C175G. S/U or letter grading. **C485A.** Brass. **C485B.** Guitar. **C485C.** Piano. **C485D.** Percussion. **C485E.** Strings. **C485F.** Woodwinds. **C485G.** Flux Contemporary.

**486. Jazz Ensemble. (2)** Studio, six hours. Designed for MM students in jazz performance area of study. Group performance of jazz repertoire. May be repeated for credit without limitation. Letter grading.

**495. Introductory Practicum for Teaching Apprentices in Music. (2)** Eight weekly two-hour seminar sessions, plus intensive training session during Fall Quarter registration week. Preparation: appointment as teaching apprentice in Music Department. Required of all new teaching apprentices. Special course dealing with problems and practices of teaching music at college level. May not be applied toward degree requirements. S/U grading.

**496. Technology Seminar. (2)** Seminar, two hours; laboratory, one hour; outside study, three hours. Introduction to departmental and campuswide technology resources, exploration of applications of technology in education, and development of means of using technology to assess and document teaching competence. S/U grading.

**595A. Preparation of Master's Recital. (6)** Tutorial, three hours. Limited to graduate master's program in performance students. Intensive study and preparation of final master's recital, normally taken in lieu of 400-level lessons during final recital term. S/U grading.

**595B. Preparation of Final Doctoral Recital. (6)** Tutorial, three hours. Preparation: advancement to candidacy for DMA degree. Intensive study and preparation of final DMA recital, normally taken in lieu of 400-level lessons during final recital term. S/U grading.

**596A. Directed Individual Studies in Orchestration and Composition. (2, 4, or 6)** Tutorial, to be arranged. Only 4 units may be applied toward MA or MM degree requirements. May be repeated for credit. S/U or letter grading.

**596C. Directed Individual Studies in Music Education. (2, 4, or 6)** Tutorial, to be arranged. Only 4 units may be applied toward MA or MM degree requirements. May be repeated for credit. S/U or letter grading.

**596D. Directed Individual Studies in Performance Practices. (2 to 12)** Tutorial, to be arranged. Only 4 units may be applied toward MA or MM degree requirements. May be repeated for credit. S/U or letter grading.

**597. Preparation for Master's Comprehensive Examination or PhD Qualifying Examinations. (2 or 4)** Tutorial, to be arranged. S/U grading.

**598. Guidance of MA Thesis. (4, 8, or 12)** Tutorial, to be arranged. Only 4 units may be applied toward degree requirements. May be repeated for credit. S/U grading.

**599. Guidance of PhD or DMA Dissertation. (4, 8, or 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

## MUSIC INDUSTRY

*Interdepartmental Program  
Herb Alpert School of Music*

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Jessica A. Schwartz, PhD (*Musicology*)

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## Overview

The Music Industry Interdepartmental Program prepares students for transformative, creative career paths in and around an ever-evolving music industry. Committed to diversity and justice in the music industry, the program provides challenging historical, critical, and global perspectives through deep integration with the Herb Alpert School of Music's departments of Music, Musicology, and Ethnomusicology, and with other UCLA professional and arts schools. Fostering students' intellectual and musical creativity equips them to recognize and develop the creativity of others. Balanced programs of courses and projects build the technical, computational, fiduciary, communications, and marketing skills necessary for success in any part of the professional music world. Internships, mentoring, and individualized capstone projects give students direct experience with working music communities, and forge lifelong connections between our students and faculty, engaged industry professionals and the world.

## Undergraduate Major

### Music Industry BA

#### Capstone Major

Music Industry is a designated capstone major. Undergraduate students must complete a senior thesis that demonstrates the skills and expertise they have acquired in earlier course-

work. This requirement may be fulfilled through a written research paper, but, given the experiential nature of the Music Industry degree, it may also be fulfilled by the honing of creative expression for personal or political effect (songwriting, production, etc.), by problem solving or entrepreneurial initiatives in the music industry (music tech start-up, record label, etc.), or by experiential learning in an organization outside of academia (entrepreneurial, community, or corporate project with formal reporting). Students in the capstone are expected to work together to curate their collective work and experience in a formal and public capstone event, which may include online and virtual components as well as a live performance showcase for creative work.

## Learning Outcomes

The Music Industry major has the following learning outcomes:

- Understanding of basics of economics and accounting, and master advanced financial concepts relevant to the entertainment and concert industry, including the management of intellectual property rights
- Understanding through study and performance of basic parameters of music, and how it works as a communicative language and a cultural force
- Displayed familiarity with the current practices of music and law, artist management, digital marketing, music publishing, concert and tour promotion, and other key tasks of the music and entertainment industries
- Demonstrated working understanding of acoustics, audio technology, audio engineering, studio production, and electronic music making
- Effective spoken and written communication and negotiation
- Understanding of how to plan, organize, and budget complex projects
- Development of techniques for managing and motivating collaborative and creative teams
- Engagement with analytical and historical research to development broad critical understanding of social, economic, and historical underpinnings of the global music industry, with special attention given to race/gender equity and music as a force for social justice
- Creation of collaborative networks with others in the music industry
- Acquisition of direct experience in characteristic music industry working environments, and reflection on that experience
- Participation in sustained mentoring relationships
- Assembling of a portfolio of relevant work experience and achievements

## Entry to the Major

### Admission

Applicants are reviewed individually, based on a questionnaire, grade-point average, test scores, a personal statement of purpose, a portfolio review, and an interview.

### Transfer Students

Transfer applicants to the Music Industry major with 90 or more units must complete as many

of the following introductory courses as possible prior to admission to UCLA: at least two quarters of musicianship or music theory training equivalent to Music Industry 20A and 20B, and at least two quarters of study in finance and accounting equivalent to Music Industry 10A and 10B.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* (1) *Music Industry core*—Music Industry 1 (three quarters), 2, 10A, 10B, 20A, 20B, 25; (2) *Ensemble*—four units in one ethnomusicology, music, or music industry ensemble; (3) *History and Culture of Music*—one course from Ethnomusicology 20A, 20B, M25, 30, M35, 40, 45, M50A, M50B, M110A, M110B, Music Industry 29, 55, Musicology 5, 7, 8, 13, 60, 61, 64, 65, 68, 75, 94; (4) *Race, Culture, and American Music*—one course from Ethnomusicology M35, M50A, M50B, M110A, M110B, Musicology 64, 65, 75; (5) *Communication Fundamentals*—Communication 1 or equivalent.

### The Major

*Required:* (1) *Music Industry Core*—Music Industry 104A, 104B, 113A, 114, 122, 126, 128; (2) *Music Technology and Studio Production*—one course from Music 260A, 260B, Music Industry 107A, 107B, 111A, 111B, 112A, 112B, 115A, 115B, 116A, 116B, 118; (3) *Music Business and Law*—one course from Communication M117, Music Industry 104C, 110, 113B, 124B, 155, M181; (4) *Music Culture and History*—one course from Ethnomusicology M116, M119, 174, 175, Music Industry 108, 131, 132, 134, Musicology 128, M136, M137, 140; (5) *Elective*—one additional course from any of the three subareas; (6) *Internship/Practicum Experience*—Music Industry 195CE or 196; (7) *Capstone Experience*—Music Industry 187A, 187B, 187C.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade.

## Undergraduate Minor

### Music Industry Minor

The Music Industry minor is intended to provide students with an introduction to the history, theory, and practice of music as a calling and a business; and to provide opportunities for students to work with practitioners on real-world projects in the music industry.

## Admission

To apply to the minor, transfer students must have completed a minimum of one term of residency at UCLA, and students admitted as first years must have completed a minimum of three terms of residency at UCLA. Students must be in good academic standing with an overall grade-point average of at least 2.0.

In addition, students who are not enrolled in a major within the Herb Alpert School of Music must complete at least one performance or ensemble course selected from Ethnomusicology 91A through 91Z, Global Jazz Studies 176A through 176G, Music M90T, C185A through C186C prior to application to the minor. The performance requirement may also be fulfilled through successful completion of Music Industry 91A, 91B, 111A, 111B, or through an equivalent music industry course by petition.

## The Minor

*Required Courses (28 units):* Music Industry 101, 195CE (8 units), and five additional courses (20 units) selected from Ethnomusicology M25, 30, M35, C100, 105, M110B, 117, C155, C184, Music C176, Musicology 128, M137, 140, 164, 165, 177, 185, Music Industry 29, 55, 95, M103 through 188, 195CE, 197.

## Policies

A maximum of two lower-division courses may be counted toward the minor. Other UCLA upper-division courses may be applied to the minor by petition.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

With the exception of Music Industry 95 and 195CE (mandatory P/NP grading), each minor course must be taken for a letter grade. Successful completion of the minor is indicated on the transcript and diploma.

## Music Industry

### Lower-Division Courses

**1. Music Industry Forum. (1)** Lecture, one hour. Introduction to consideration of contemporary issues in global music industry through interaction with instructor, guest lecturers. May be repeated for credit. P/NP grading.

**2. Music Industry Fundamentals. (4)** (Formerly numbered 102.) Lecture, three hours; discussion, one hour. Introduction to current music industry. Overview of career paths, monetization strategies, organizational behavior, and entrepreneurial thinking. Designed to serve as gateway for music industry degree programs. Students familiarize themselves with basic functions of industry that are covered in greater detail in upper-division coursework. Letter grading.

**4. Reel Beatles: Understanding Beatles through Film and Media. (5)** Lecture, three hours; discussion, one hour. Designed to tell story of the Beatles through visual media. Covers over 80 years of their lives, their journey, and enormous impact they had on world. Focus on how the Beatles were seen on television and in film. Examination of their most impactful filmed performances, movies they made as group, their promotional videos, their landmark broadcast moments, documentaries made about them while still they were still together, television interviews they did after group broke up, best documentaries made about them since 1970, and official multi-part documentary history of the Beatles they did together as well as Peter Jackson's 2021 documentary. Letter grading.

**10A-10B. Finance and Accounting in Music Industry I, II. (4-4)** Lecture, three hours. Introduction to how money works in both nonprofit and for-profit music industries, including practical management of funds, budgeting (including tour budgets), fee scales, servicing agreements, issues pertaining to trade unions, and various modes of accounting for salary, royalties,

local and international taxation, streaming revenues, licensing payments, and other income and expenditure. Letter grading. **10B.** Prerequisite: course 10A.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A-20B. How Music Works I, II. (4-4)** Lecture, four hours; recitation, one hour. General introduction to music in technological era of mass culture, and reconsideration of music theory for global 21st century music professional. How organized sound can become source of pleasure, mode of communication, strategy of resistance, and (sometimes) source of intellectual property. No particular style of music or type of notation is privileged, and no traditional musical training is required. Letter grading. **20B.** Prerequisite: course 20A.

**25. Fostering Musical Creativity: Artists and Repertoires. (4)** Lecture, four hours; outside study, eight hours. Beginning from psychology of creativity (James, Dewey, Csikszentmihalyi) and management literature, exploration of creative process and how to foster and control it; and collaborative process with producer, manager, labels, and other executives. Topics include path of artist; recognizing creative individuality; structure and freedom; collaboration and how teams work, including inside and outside concert hall and recording studio; negotiation and career-building; feed-back and evaluation. Special attention to musical creativity and its rhythms. Letter grading.

**29. Docs that Rock: Music Documentary in History and Practice. (5)** Lecture, three hours; discussion, one hour. Close look at history of popular music documentaries and goals, methods, and challenges of making them. Consideration of what makes for successful (or unsuccessful) music documentaries. Viewed through very specific focus of story and storytelling. Students may develop their own documentary project as part of coursework. P/NP or letter grading.

**55. Songwriters on Songwriting. (4)** Lecture, three hours; discussion, one hour. With special focus on songwriting renaissance of rock era, examination of work of important songwriters of post-World War II generation (circa 1952–1994) and those they have influenced. Practical industry guidance from current and noteworthy practitioners. Coverage of songwriting, arrangement and record production, music publishing, and record business in 20th and 21st centuries. Guest music industry professionals demonstrate individual creative processes and discuss their paths to songwriting and their place in world of music. Course is not workshop or tutorial on how to write songs. (See course 112.) P/NP or letter grading.

**70. Apprenticeship in Music Industry. (2 or 4)** Tutorial, to be arranged. Under general supervision of UCLA faculty member, students work with various UCLA faculty and staff in production of live concert events, in UCLA recording studio, or as part of media production team led by UCLA faculty or staff. Written evaluation of apprenticeship work is provided by those supervising it directly. May be repeated for credit. Individual contract with workplace supervisor required. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**91A-91B. Rock/Pop Studio Ensemble I, II. (2-2)** Activity, five hours. Course 91A is requisite to 91B. Performance-based introduction to popular music styles, forms, and competencies through immersion in studio performance techniques. Students play in groups to develop ensemble, create material, and produce recordings. P/NP or letter grading.

**95. Introduction to Community or Corporate Internships in Music Industry. (4)** Tutorial, eight hours. Entry-level community or corporate internship for lower-division students who have completed 90 or

fewer units. Internship in supervised setting in community organization, agency, or private business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Seminar in Music Industry. (4)** Seminar, four hours; outside study, eight hours. Required of Music Industry minors. Introduction to intellectual and theoretical frameworks that form Music Industry minor and that scholars of music and music industries have developed to analyze, understand, and perhaps judge what happens out there, including how music business works in financial, legal, global, and artistic terms, how music technologies of recording, reproduction, and consumption operate, and how basic music science from acoustics to brain biology to music perception affects how music is produced and heard. Letter grading.

**M103. Music, Mind, and Brain. (4)** (Same as Neuroscience M170.) Seminar, three hours; outside study, nine hours. Multidisciplinary approach to understanding brain mechanisms mediating music perception, performance, and cognition. Students' natural interest in music serves as springboard for learning basic concepts about theories of mind, and how brain works to determine perception of harmony and rhythm, emotion and meaning in music, and musical creativity. Designed to help students understand methodologies currently used to investigate brain-behavior correlates. Broad understanding of research topics in cognitive neuroscience; introduction to fundamental principles in neurophysiology, psychophysiology, and neuroanatomy. Letter grading.

**104A. Music and Law. (4)** Seminar, three hours; outside study, nine hours. Fundamentals of American law as it applies to entertainment business, with special attention to music and its use in film, television, and new media. Legal relationships in entertainment business and basic business practices. Exploration of legal aspects of process of producing works in entertainment field, from acquisition of rights and talent through production and distribution. Letter grading.

**104B. Legal and Business Aspects of Music Publishing. (4)** Seminar, three hours. Exploration of legal and business aspects surrounding creation and distribution of musical compositions in today's evolving marketplace. Detailed exploration of rights afford songwriters under Copyright Act of 1976, and practical review of ability of these authors to control and monetize these rights. Review and practical analysis of agreements involved from inception to global exploitation of compositions including co-writer agreements, registration of songs, administration agreements, public performance agreements, and sale of catalogs. Exploration of financial implications for songwriters of these agreements. Letter grading.

**104C. Legal and Business Aspects of Sound Recordings. (4)** (Formerly numbered 104B.) Seminar, three hours; outside study and research, nine hours. Exploration of legal and business aspects of production and distribution of sound recordings. More detailed practical focus on legal aspects of recording process itself, from initial assembly of material to final distribution and collection of royalties, with material covered also relevant to audio-visual recordings. Introductory presentation on contract, copyright, and trademark law as background to step-by-step process of securing agreements necessary for production and commercial distribution of recordings. Letter grading.

**107A. Engineering and Production Fundamentals. (4)** Lecture, two hours; studio, one hour; outside study, nine hours. Introduction to basic acoustic principles, practical techniques, and working procedures for equipment used in contemporary music production, including microphones, mixers, recorders, synthesizers, and sequencers. Basic sound processing operations (equalization, compression, distortion, reverb). Operating principles of most popular systems of music production software and hardware. Letter grading.

**107B. Engineering and Production for Musicians. (4)** Studio, four hours; outside study, eight hours. Enforced requisite: course 107A. Examination of selected technological elements in greater depth than in course 107A, while applying established concepts to broad range of creative scenarios and applications. Basic familiarity with standard audio workstation software in use in music industry and introduction to foundational theoretical concepts in audio engineering, psychoacoustics, mixing, mastering, and sound recording. Development of critical listening skills through in-class and assigned listening. Letter grading.

**108. Founding and Sustaining Performing Arts Organizations. (4)** Seminar, four hours. Examination of process of founding performing arts organizations, beginning with inspiration to do so, clarifying organization mission, and mechanics of becoming nonprofit corporations; issues of funding, press relations, finding appropriate venues, developing audience; mechanics, legal and routine, of running arts businesses; establishing relationships with other organizations in field; issues of making and distributing recordings. Students create on paper one performing arts organization, including developing mission statement, preparing bylaws, and writing sample grant proposals. Letter grading.

**110. Music Business Now. (4)** Seminar, three hours. Hands-on introduction to business of music, with emphasis on marketing and media. Students work in teams to develop strategies for real-world artists. P/NP or letter grading.

**111A-111B. Rock/Pop Studio Ensemble I, II. (4-4)** Studio, four hours; outside study, four hours. Performance-based introduction to popular music styles, forms, and competencies through immersion in studio performance techniques. Students play in groups to develop ensemble, create material, and produce recordings. May be repeated for credit. P/NP or letter grading. **111A.** (Formerly numbered 111.) **111B.** Requisite: course 111A.

**112A. Introduction to Songwriting. (4)** Seminar, four hours; outside study, eight hours. Learning and employment of craft of songwriting. Examination, analysis, and implementation of song structure, lyric and melody writing, arranging, orchestrating, and recording techniques. Evolution of songwriting in modern society since advent of phonograph player/radio; how songs and society affect and reflect one another; how this has informed songs and songwriters. Letter grading.

**112B. Advanced Songwriting. (4)** Seminar, four hours; outside study, eight hours. Enrollment by consent of instructor. Seminar in contemporary songwriting practices for intermediate to advanced songwriter. Emphasis on collaboration, flexibility, and working within teams to master specific songwriting challenges. All genres and styles of music accommodated. Letter grading.

**112C. Songwriter's Workshop. (1 or 2)** Seminar, three hours. Enforced requisite: course 112A or 112B or permission of instructor. Provides supportive community for songwriters to work together under the supervision of Music Industry faculty. Students present their songs in progress, form teams for collaboration, and may undertake professionalization exercises like portfolio construction, writing on speculation, writing to synchronization, etc. Main focus is individual musical growth. May be repeated for credit. P/NP or letter grading.

**113A. Music Supervision. (4)** (Formerly numbered 113.) Seminar, three hours. Introduction to role of music supervisor and creative, logistical, and budget considerations of music supervision. Development of theoret-

ical and practical knowledge, interaction with professionals in field, and practice negotiating music requests and clearances. Letter grading.

**113B. Advanced Music Supervision. (4)** Seminar, three hours. Recommended requisite: course 113A. Further development of theoretical and practical knowledge of music supervision, interaction with professionals in field, and practice negotiating music requests and clearances. Advanced issues in music supervision, including multi-episode series, in-studio music departments, managing extensive catalogs, etc. Letter grading.

**114. Concerts and Venues: Producing Special Events and Live Concerts. (4)** Seminar, three hours. Behind-scenes overview of how to produce successful live show, special event, or concert, from concept to execution, including master planning, venue production, concept and design, operations, seating, talent, security, and budget. Students acquire specialized knowledge and principles involved in staging any kind of event in stadiums, concert halls, arenas, exhibitions, and art installations in venues worldwide. Includes guest speakers and site visits to major shows, venues, and production facilities. Letter grading.

**115A. Art of Music Production I. (4)** (Formerly numbered 115.) Lecture, three hours; studio, two hours. Exploration of techniques, methods, and process of music production and larger issues in art of making music. Students learn how to foster and capture performance and emotion in music through variety of methods and tools, including artistic direction in studio and choices made in sound, arrangement, and application of technology. Letter grading.

**115B. Art of Music Production II. (4)** Lecture, three hours; studio, two hours. Requisite: course 115A. Further exploration of techniques, methods, and process of music production and larger issues in art of making music. Students learn how to foster and capture performance and emotion in music through variety of methods and tools including artistic direction in studio and choices made in sound, arrangement, and application of technology. Critical listening skills. Introduction to contemporary technologies including spatial audio, multi-channel sound, etc. Letter grading.

**116A-116B. Digital Production and Beat Design I, II. (4-4)** Seminar, four hours. Course 116A is requisite to 116B. Recommended: course 107A. Introduction to contemporary digital production through mastery of beat-driven musical textures. Use of digital audio workstations, plugins and hardware, creation of live performance rigs controlling sound and vision. Students develop proficiency in key styles of beat-oriented popular music, including hip-hop, electronic dance music, pop, and experimental rhythm and blues. Principles of analog and digital synthesis, creation of sound libraries, composing for film and digital media. Sound amplification and integration of live performance with digital sound. Electronically submitted final project. P/NP or letter grading.

**118. Post-Production Audio for Film, Television, and Visual Media. (4)** Seminar, three hours. Contemporary film sound, musical composition, and post-production audio. Principles of soundtrack editing, processing of vocals, and post-production sound design. Surround and theater sound mixing, game sound, and virtual reality. Final project ideally involves collaboration with UCLA student filmmakers and is electronically designed and submitted. Letter grading.

**122. Digital Marketing and Promotion. (4)** Seminar, four hours; outside study, eight hours. Requisites: courses 101, 102, 104A, or by permission of instructor. Record labels, streaming services, social media, synch, merchandise, entrepreneurship, and other avenues of coordinated and independent marketing and promotion. Letter grading.

**124A. Music Industry Entrepreneurship. (4)** Seminar, three hours. Principles of entrepreneurship and fundamental business strategies approached through case studies and project-based group assignments. How to read market trends, put together business plans, raise investment funds. Students help manage speaker series with music industry entrepreneurs. Letter grading.



**124B. Music Industry Entrepreneurship and Innovation. (4)** (Formerly numbered 124.) Seminar, four hours. Principles of entrepreneurship and fundamental business strategies approached through case studies and project-based group assignments. Students develop business plans, pitch them, and build out infrastructure for startups that focus on technology and innovation in music industry. Students are encouraged to make use of resources at MusicBiz, MEIEA, and startup.ucla.edu. Letter grading.

**126. Artist Management. (4)** Seminar, four hours. Holistic principles of artist management including articulating and moving forward artistic vision, coordinating multiple revenue streams, psychology of managing artists and creative mind, and ethical practices in artist management. Basics of negotiation and compensation; artist promotion; career shaping; legal aspects of artist management; contemporary Internet-based strategies for artist promotion; merchandising and monetizing fandom. Students work to discover, sign, and break local artists across numerous genres. Letter grading.

**128. Global Music Industry. (4)** Seminar, three hours. Introduction to global music industry through contemporary research, case studies, and trends. Survey of developed and emerging markets; regional marketing and moving beyond U.S.-based thinking; multi-national approaches to career building. Special topics may include international standards for linguistic issues including publishing, censoring, and dubbing. Letter grading.

**131. DIY: Punk Organizing as Social Justice. (4)** Seminar, three hours. Recommended requisite or corequisite: Musicology 13. Do it yourself (DIY) as practical alternative mode of organization for social justice activism and nonprofit arts collectives. Ethical issues in capitalism, labor issues, politics. How to work with gender, class, race, and orientation. Students interface with existing radical social justice/art organizations in Los Angeles area, and strive to facilitate real change. Letter grading.

**132. Music and Activism. (4)** Seminar, three hours; outside study, nine hours. History and practice of music in and as activism. Artist-run labels and collectives, social justice organizing and media, art and activism in both entrepreneurial and non-profit settings. Students develop and execute music-related business plan with social awareness and potential for measurable impact. P/NP or letter grading.

**134. Psychology and Music Management. (4)** Seminar, three hours. Theoretical and sociological approach to psychology of artistry, fame, and music management, including effects of fame, addiction, fandom, and managing legacies. Focus on careers of significant musical artists according to instructor specialty. Letter grading.

**144. Music Journalism. (4)** Seminar, four hours. Students learn core journalism writing and reporting techniques—objectivity, neutrality, fact-checking, interviewing, active voice writing, editing—and apply those techniques to producing publishable works of journalism that report on music and music industry. Discussion and exploration of music and music industry landscape as journalists with probing curiosity, critical thinking, reporting, and analysis. Story ideas are pitched as group; and written, reported, and edited as journalism team. Reading and critiquing of wide range of music journalism. Music journalists and musicians as guest speakers. No prior journalism experience necessary. Letter grading.

**155. Music and Data Science. (4)** Seminar, three hours. Introduction to data science for music professionals. History of charts, jukeboxes, Nielsen, Sound Scan, and advances in monitoring of music consumption. Impact of data technologies, and rise of data analytics in Internet era. Statistics and programming for musicians. Social media and fan engagement. Students learn to gather, process, and act on complex streams of consumption data, media analytics. Implications for monetization of musical creativity, management of intellectual property. Basic programming experience is recommended to make best use of course. Letter grading.

**M176. Music and Capitalism in West. (4)** (Same as Ethnomusicology M176.) Lecture, four hours. Follows history of western capitalism and how it has shaped music-making and listening to present time. P/NP or letter grading.

**M181. Forensic Musicology. (4)** (Formerly numbered 181.) (Same as Musicology CM181.) Seminar, three hours. Survey of critical issues and recent developments in field of forensic musicology—application of musical analysis to law of music copyright. Instructors include professionals in music industry. Study of fundamentals of music analysis and copyright law, review of key music copyright infringement cases from both legal and musicological perspectives, outlining of procedural aspects of copyright case, and defining of working relationship between attorney and musicologist. Letter grading.

**M182. Music Industry. (4)** (Same as Ethnomusicology CM182, Music CM182, and Musicology CM186.) Lecture, four hours; discussion, one hour; outside study, seven hours. Limited to Ethnomusicology, Music, and Musicology majors. Examination of influence of music industry on way music is created, performed, listened to, evaluated, and used today. Historical approach taken, beginning with music published in 18th century and continuing through development of audio recordings to MTV and popular music today. Letter grading.

**187A-187B-187C. Capstone Seminar in Music Industry I, II, III. (2-4-2)** Seminar, three hours. Limited to senior Music Industry majors. Preparation, creation, and presentation of senior capstone project. Letter grading. **187A.** Developing Project/Connections. **187B.** Creating the Project/Internship. Requisite: course 187A. **187C.** Presenting Project/Report. Requisite: course 187B.

**188. Special Courses in Music Industry. (4)** Seminar, four hours; outside study, eight hours. Special topics in music industry for undergraduate students taught on experimental or temporary basis. May be repeated for credit with topic change. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**195. Community or Corporate Internships in Music Industry and Technology. (4)** Tutorial, eight hours. Preference given to juniors/seniors in Music Industry minor with minimum cumulative 3.0 grade-point average. Internship in supervised setting in community agency or private business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP grading.

**195CE. Community and Corporate Internships in Music Industry. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend biweekly meetings with graduate student instructor, and write final research paper. Faculty mentor and graduate student instructor construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major. May not be applied toward concentration or distribution requirements. Individual contract with supervising faculty member required. P/NP or letter grading.

**196. Directed Mentorships in Music Industry. (2 or 4)** Tutorial, one hour. Limited to senior Music Industry majors with minimum cumulative 3.0 grade-point average. Supervised individual research under guidance of faculty and industry mentoring team. Culminating industry project required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**197. Individual Studies in Music Industry and Technology. (2 to 4)** Tutorial, six to 12 hours. Limited to juniors/seniors in Music Industry minor with minimum cumulative 3.0 grade-point average. Individual intensive study in music industry and technology, with scheduled meetings to be arranged between faculty member and student. Tangible evidence of mastery of subject matter resulting in research project/paper required. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. Letter grading.

## MUSICOLOGY

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Raymond L. Knapp, PhD, *Chair*

## Faculty Roster

### Professors

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Mark L. Kligman, PhD (*Mickey Katz Endowed Professor of Jewish Music*)

Raymond L. Knapp, PhD

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David W. MacFadyen, PhD

Shana L. Redmond, PhD

Timothy D. Taylor, PhD

### Professors Emeriti

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### Associate Professors

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Jessica A. Schwartz, PhD

Elizabeth Randell Upton, PhD

### Assistant Professors

Cesar D. Favila, PhD

Thomas E. Hodgson, PhD

Catherine A. Provenzano, PhD

### Lecturers

Kristi A. Brown-Montesano, PhD

Caitlin C. Carlos, PhD

Marylin D. Winkle, DMA

### Academic Administrator

Holley Replogle-Wong, PhD

## Overview

The Department of Musicology curricula allow students to gain a broad understanding of the history and culture of music, as well as a practical introduction to issues and skills relevant to the music and entertainment industries. Courses cover virtually every period, style, and genre, including jazz and other popular musics. The department is aligned with the departments of Ethnomusicology and Music, and shares curriculum with the free-standing minor in Music Industry. It aspires to promote produc-

tive collaboration between performance and scholarship, a cross-cultural global understanding of the art of music, and preparatory training for a broad range of careers in music and the music industry after students graduate.

## Undergraduate Majors

### Musicology BA

The BA in Musicology appeals to undergraduate students with musical backgrounds whose interests and principal career goals lie in areas other than professional performance. This undergraduate program prepares students for graduate programs in music and related fields and offers training within the broader context of the humanities.

### Capstone Major

The Musicology major is a designated capstone major. Undergraduate students must complete a senior thesis that demonstrates the skills and expertise they have acquired in earlier coursework. Students are expected to conceive and execute a project that identifies and engages with a problem within a specialized topic, identify and analyze appropriate primary sources both textual and musical, and have a working knowledge of scholarly discourse relative to a specialized topic. While an extended essay is the default expectation for a completed project, students are encouraged to seek alternative formats, such as a lecture-recital, business or marketing plans, set of lesson plans, website, studio sound recording, or video/audio presentation. Students discuss and critique the work of their peers and present their work to other students and, if they choose, to the public as part of a student-organized live event and conference.

### Learning Outcomes

The Musicology major has the following learning outcomes:

- Demonstrated specific skills and expertise, including research, analysis, writing, and general knowledge of music and music history
- Identification and analysis of appropriate primary sources and musical scores
- Conception and execution of a project that proposes and supports an original argument about a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic
- Engagement with peers through presentation, discussion, and critique of student work

### Entry to the Major

#### Admission

The Musicology program assumes that students have some musical background before entering UCLA. Although auditions are not required, prospective majors should be sufficiently competent on an instrument or in voice to participate in a performance group, as required by the program.

### Transfer Students

Transfer applicants to the Musicology major with 90 or more units should complete one year of music theory and musicianship prior to admission to UCLA. Experience in music performance is strongly recommended. Transfer students are required to take Musicology 12W at UCLA.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Musicology 1, M6A, M6B, M6C, 12W, Music 20A, 20B, 20C, and 6 units total of performance organizations selected from Ethnomusicology 68A through 68O, 91A through 91Z, 168A through 168O, Global Jazz Studies 176A through 176H, Music C175A through C175G, C185A through 185H, Musicology CM90T, or Music Industry 111A; one lower-division humanities elective (minimum of 4 units).

### The Major

*Required:* Musicology 125A, 125B, 125C, 126, 127, 128 (in a given year, the department may designate individual Musicology seminars in the range 160-185, 188, or 191 as equivalent to 126 and 127); one additional upper-division ethnomusicology, global jazz studies, music, or music industry seminar elective course (minimum of 4 units); and the department capstone sequence, Musicology 187A, 187B, 187C.

### Policies

#### Preparation for the Major

Enrollment in Musicology M6A, M6B, M6C and Music 20A, 20B, 20C requires taking the Music Theory Placement Examination administered by the Music Department during New Student Sessions or week 0. Students who do not pass the examination are required to take Music 3 prior to taking Music 20A.

### The Major

Each course applied toward the major must be taken for a letter grade (courses offered only on a P/NP grading basis are acceptable).

### Music History and Industry BA

The BA in Music History and Industry is not a technical or business degree; it is a liberal arts degree in musicology whose subject is the music industry, combining the focus on music as an art form with practical training and experiential learning based in the music industry. It includes courses that help students develop their skills in popular music creation and production as well as practical skills appropriate to the fiscal, entrepreneurial, and legal needs of the contemporary music world. A required internship in the Los Angeles music industry is a distinctive feature.

### Capstone Major

The Music History and Industry major is a designated capstone major. Undergraduate stu-

dents must complete a senior thesis that demonstrates the skills and expertise they have acquired in earlier coursework. Students are expected to conceive and execute a project that (a) identifies an issue, problem, or opportunity in the music industry and engages with it practically and critically, or (b) brings to fruition a substantial creative project in contemporary music with tangible results. While an extended essay is the default expectation for a completed project, students are encouraged to seek alternative formats, such as a lecture-recital, business or marketing plans, set of lesson plans, website, studio sound recording, or video/audio presentation. Students discuss and critique the work of their peers and present their work to other students and, if they choose, to the public as part of a student-organized live event and conference.

### Learning Outcomes

The Music History and Industry major has the following learning outcomes:

- Development of basic musicianship and music literacy and fluency in music theory to accurately and efficiently communicate about musical concepts across multiple repertoires in popular music; basic competence with music technology
- Demonstrated general knowledge of the histories and repertoires of Western European and US—American traditional, popular, and classical musics, as well as the influence of other world traditions
- Engagement with live ensemble performance in at least one area of music
- Working knowledge of scholarly and critical discourse relative to music history and the music industry
- Conception and execution of project that proposes and supports an original argument about a specialized topic or addresses a specific cultural question or presents and analyzes a case study of actual practice in the music industry
- Engagement with peers through presentation, discussion, and critique of their work
- Demonstrated basic understanding of how culture is theorized and interpreted, and the ability to place musical experiences and structures in rich cultural contexts, and to link music with social justice, diversity, and equity goals
- Demonstrated basic economic literacy and basic understanding of the economic and legal organization of creative industries
- Ability to find, evaluate, and apply high-quality data to support executive and entrepreneurial decisions
- Experiential learning in real-world corporate, creative, or entrepreneurial situations with written report

### Entry to the Major

#### Admission

The Music History and Industry major assumes that students have some musical background before entering UCLA, although Western art music is not privileged. Auditions are not required, but prospective majors should be sufficiently competent on an instrument, in produc-

tion, or in voice to participate in a performance group, as required by the program.

## Transfer Students

Transfer applicants to the Music History and Industry major with 90 or more units should complete one year of music theory and musicianship prior to admission to UCLA. Experience in group music performance (any genre) is strongly recommended. Transfer students are required to take Musicology 12W at UCLA.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Music 20A, 20B, 20C; Musicology 1, M6A, M6B, M6C, 12W; and 4 units total of performance organizations selected from Ethnomusicology 68A through 68O, 91A through 91Z, 161A through 161Z, Global Jazz Studies 176A through 176H, Music C175A through C175G, C185A through 185H, Musicology CM90T, or Music Industry 111A; one lower-division musicology or music industry elective (minimum of 4 units).

### The Major

*Required:* Musicology 125A, 125B, 125C, 128, Music Industry 101, 2 or 112A or 112B, 195 or 195CE, two additional upper-division music industry elective courses; and the Music History and Industry capstone sequence, Musicology 187A, 187B, 187C.

## Policies

### Preparation for the Major

Enrollment in Music 20A, 20B, 20C, and Musicology M6A, M6B, M6C requires taking the Music Theory Placement Examination administered by the Music Department or an equivalent assessment administered by the Musicology Department during New Student Sessions or week 0. Students who do not pass the examination are required to take Music 3 prior to taking Music 20A.

### The Major

Each course applied toward the major must be taken for a letter grade (courses offered only on a P/NP grading basis are acceptable).

## Undergraduate Minor

### Musicology Minor

The Musicology minor provides undergraduates with an overview of music history and the study of music. Students may select from a wide variety of undergraduate courses that range through the history of European and American music.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and complete the Musicology minor application. For more information, see the [minor website](#).

## The Minor

*Required Lower-Division Courses (14 units):* Musicology 1 and two lower-division musicology courses (minimum of 10 units total) with grades of C or better.

*Required Upper-Division Courses (20 units):* Two upper-division musicology seminar courses (minimum of 8 units total), and three additional upper-division ethnomusicology, global jazz studies, musicology, or music industry courses (minimum of 12 units total).

## Policies

Enrollment in some courses may be limited; check with the department or instructor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade (courses offered only on a P/NP grading basis are acceptable), and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Musicology MA, CPhil, PhD

The graduate program in Musicology offers courses leading to the MA and PhD degrees. It is designed to equip students to pursue careers not only in teaching but also in other areas that require bibliographical skills and training in research methodologies. The department offers teaching and research assistantships each year for qualified students.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Musicology

### Lower-Division Courses

**1. Issues and Methods in Musicology. (4)** (Formerly numbered 101.) Seminar, three hours. Introduction for Musicology majors and minors to practical aspects and fundamental issues of musicology as academic discipline. How musicologists go about establishing, editing, performing, analyzing, and interpreting musical texts. Exposure to kinds of activities, philosophies, and styles of scholarship that continue to shape field of musicology. Letter grading.

**M3. Introduction to Classical Music. (5)** (Formerly numbered Musicology 3.) (Same as Music M14.) Lecture, four hours; discussion, one hour. Survey of music of Western classical tradition, with emphasis on historical context, musical meanings, and creation of tradition itself. P/NP or letter grading.

**5. History of Rock and Roll. (5)** Lecture, four hours; discussion, one hour. Analysis of forms, practices, and meanings of rock and roll music, broadly conceived, from its origin to present. Emphasis on how this music

has reflected and influenced changes in sexual, racial, and class identities and attitudes. Credit for both courses 5 and 185 not allowed. Letter grading.

**M6A-M6B-M6C. Introduction to Musicianship. (2-2-2)** (Same as Ethnomusicology M6A-M6B-M6C and Music M6A-M6B-M6C.) Laboratory, four hours. Preparation: placement examination. Course M6A is enforced requisite to M6B, which is enforced requisite to M6C. Students must receive grade of C- or better to proceed to next course in sequence. Introduction to musicianship through in-depth exploration of basic common musical elements and training in aural recognition, sight singing, dictation, and keyboard skills. Focus on topics such as tonal and modal harmony, rhythm, improvisation, composition, notation, and ear training to prepare students for later theory courses, participation in music ensembles, advanced study in music, and professional careers. Letter grading.

**7. Film and Music. (5)** Lecture, four hours; discussion, one hour. History of music and cinema, particularly ways music is used to produce meanings in conjunction with visual image. Credit for both courses 7 and 177 not allowed. P/NP or letter grading.

**8. History of Electronic Dance Music. (5)** Lecture, four hours; discussion, one hour. Survey of groove-based electrified dance music from its origins in 1960s pop and soul to present, covering disco, house, techno, ambient, rave, and jungle. Emphasis on interaction of technology, musical structures, psychoactive drugs, and club cultures to induce altered states of musical consciousness; promise (versus reality of) political and spiritual transformation; electronic dance music as new art music. P/NP or letter grading.

**9. American Popular Song. (5)** Lecture, four hours; discussion, one hour. American popular music before advent of rock and roll in 1950s, with special emphasis on song tradition of Tin Pan Alley. P/NP or letter grading.

**12W. Writing about Music. (5)** Lecture, four hours; laboratory, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Emphasis on learning specific skills, incorporating technical description, historical contextualization, subjective reaction, and certain stylistic conventions necessary in writing about music. Satisfies Writing II requirement. Letter grading.

**13. Punk: Music, History, Subculture. (5)** Lecture, four hours; discussion, one hour. Developments in punk music in their historical and subcultural contexts. Survey of prepunk and musical antecedents in 1960s, rise of punk in 1970s, and tracing of its expressive trajectories to present day. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**28A-28B-28C. Collegium Musicum. (2-2-2)** Lecture, three hours. Preparation: ability to read music. Group performance of Western vocal and instrumental music. P/NP or letter grading. **28A.** Medieval Period; **28B.** Renaissance Period; **28C.** 17th and 18th Centuries.

**35. Introduction to Opera. (5)** Lecture, four hours; discussion, one hour. Exploration of history of opera from its origins in Florentine Camerata in Italy in early 17th century, through ages of Enlightenment and Romanticism, and ending with modern era of early 20th century. History of opera, biography of composers and singers, operatic conventions, dramaturgy, plot, stagings, hermeneutics of opera, and musical style, with focus on learning appreciation of music of opera within rich context of its compelling history. P/NP or letter grading.

**60. American Musical. (5)** Lecture, four hours; discussion, 90 minutes. Survey of American musical in 20th century, beginning with its roots in operetta, vaudeville, and Gilbert and Sullivan, and focusing on its connections to politics, technology, film, opera, and variety of popular musical styles, including Tin Pan Alley, jazz, and rock. Credit for both courses 60 and 160 not allowed. P/NP or letter grading.



**61. Music in Los Angeles. (5)** Lecture, four hours; discussion, one hour. Exploration of history of music in Los Angeles. From Spanish missions and history of Los Angeles to greater emphasis on music in 20th century, with special focus on European émigrés, internment and postwar history of Japanese American community, Chicano and Mexican American music to present, African American traditions including jazz on Central Avenue, 1960s Laurel Canyon and rock scene, and more recent history that includes developments in punk and hip-hop. P/NP or letter grading.

**62. Mozart. (5)** Lecture, four hours; discussion, one hour. Designed for students who do not read music. Life, works, and mythology of Wolfgang Amadeus Mozart, in context of both his age and our own. Credit for both courses 62 and 162 not allowed. P/NP or letter grading.

**63. Bach. (5)** Lecture, four hours; discussion, one hour. Designed for undergraduate students. Life and works of Johann Sebastian Bach. Credit for both courses 63 and 163 not allowed. P/NP or letter grading.

**64. Motown and Soul: African American Popular Music of 1960s. (5)** Lecture, four hours; discussion, one hour. Survey of developments in post-World War II African American popular music, with special attention to musical achievements of Motown Records, Stax, and other rhythm and blues, funk, and soul music centers of production. Relationships between musical forms and cultural issues of 1960s, including Civil Rights Movement, counterculture, black nationalism, capitalism, and separatism, and larger dimensions of African American experience as mediated through groove-based music. Credit for both courses 64 and 164 not allowed. P/NP or letter grading.

**65. Blues in American Music. (5)** Lecture, four hours; discussion, one hour. History of blues, both as specific genre and as range of techniques and approaches that have been at center of American music and culture, from 19th-century roots to present. Exploration of commonly accepted blues mainstream exemplified by figures like Bessie Smith, Robert Johnson, and B.B. King, but also central role blues has played in jazz, folk, country, gospel, rock, soul, and rap. While following evolution of music through 20th century, examination of how blues has served as metaphor for African American culture as it permeates American traditions. Credit for both courses 65 and 165 not allowed. P/NP or letter grading.

**66. Getting Medieval. (5)** Lecture, four hours; discussion, one hour. Exploration of idea of medievalism in music and culture from Wagner to video games. Music covered includes film scores, opera, Gregorian chant, early music revival, folk songs, progressive rock, and Goth. Credit for both courses 66 and 166 not allowed. Letter grading.

**M67. Popular Jewish and Israeli Music. (5)** (Same as Jewish Studies M67.) Lecture, four hours; discussion, one hour. Music of Jews is diverse. With history of several thousand years and series of developments in modernity, music in Jewish life covers variety of styles found in many contexts. Exploration of music of Jews within last 100 years, with focus on popular music of Jews in America and Israel. Examination of music in Israel, with focus on songs of land of Israel, Israeli rock, and Muzika Mizrachit (Middle Eastern popular music). P/NP or letter grading.

**68. Beatles. (5)** Lecture, four hours; discussion, one hour. Examination of life and music of Beatles within social and historical context of 1960s. Credit for both courses 68 and 168 not allowed. P/NP or letter grading.

**69. Music and Politics. (5)** Lecture, four hours; discussion, one hour. Exploration and demonstration of various ways in which music is informed by and informs politics. From individual performances to mass demonstrations, music is recognizable as a political act and tool that is not simply representative, but also constitutive, meaning that music creates belief systems (politics). Examination of development and use of music by social movements, political parties, and nations, and critical listening practices to better hear world around us and sounds that compose its futures. P/NP or letter grading.

**70. Beethoven. (5)** Lecture, four hours; discussion, one hour. Designed for undergraduate students. Life and works of Ludwig van Beethoven. Credit for both courses 70 and 170 not allowed. P/NP or letter grading.

**71. Listening. (5)** Lecture, four hours; discussion, one hour. Introduction to humanistic study of listening, as perceptual modality for engaging others and world, with focus on experience, history, politics, and ethics of listening. Hearing is shared perceptive faculty among able-bodied people, but listening practices are shaped by history, society, and culture. Hearing people listen differently depending on when, where, and how they live, as well as who they are as individuals. P/NP or letter grading.

**72. Sacred Music. (5)** Lecture, four hours; discussion, one hour. Study of forms and liturgies of Western church music. Credit for both courses 72 and 172 not allowed. P/NP or letter grading.

**M73. Music and Religion in Popular Culture. (5)** (Same as Ethnomusicology M73.) Lecture, four hours; discussion, one hour. Survey of popular music in religious traditions since the 1970s. Growth of music in Jewish denominations, including Orthodox, Reform, and Conservative, and Christian contemporary music, from evangelical to cross-over artists performing in mainstream. Credit for both courses M73 and M173 not allowed. P/NP or letter grading.

**75. History of Jazz. (5)** Lecture, four hours; discussion, one hour. History and analysis of variety of jazz styles, from late 19th-century forerunners to present, with emphasis on social meanings of musical practices. Letter grading.

**79. Dancehall, Rap, Reggaeton: Beats, Rhymes, and Routes in African Diaspora. (5)** Lecture, four hours; discussion, one hour. Survey of histories of three closely connected music genres: Jamaican dancehall, U.S. rap, and Puerto Rican/Panamanian reggaeton. Introduction to major performers in each genre, comparison of stylistic traits associated with each music, and exploration of technologies associated with contemporary music production. P/NP or letter grading.

**M80. Jewish American Experience through Music. (5)** (Same as Ethnomusicology M80 and Jewish Studies M80.) Lecture, four hours; discussion, one hour. In synagogue and on stage, and from LP recordings to YouTube, Jews in America have varied musical experiences. Music of synagogue, celebrations at home, in community, and theater are all interesting developments of Jewish music. New Opportunities in entertainment industry brought new possibilities for Jews in popular music, rock, and film scores. Exploration of various examples of Jews responding and adapting to their American context and becoming American through music. Exploration of different music genres and contexts. Presentations by guest composers and performers. Letter grading.

**M82. Music and Holocaust: Individual Experience. (5)** (Same as Jewish Studies M82.) Lecture, three hours; discussion, one hour. Roles of music during Holocaust are as varied as people who experienced it. Music was composed and performed by prisoners in almost every concentration camp; music was means for some individuals to gain favorable treatment, while others weaponized it. Traces development of European musical culture under Nazi regime (1933-45), focusing on how individuals interacted with music throughout Holocaust. Study of some of newest developments in Holocaust music research, including role American and European non-governmental organizations played in creation of artistic hubs in campus of southern France. Exploration also of cultural representations of Holocaust, and role of music in society's collective memory. Letter grading.

**88. Sophomore Seminars: Music History. (2)** Seminar, two hours. Designed for sophomore Musicology majors or students interested in pursuing Musicology major. Introduction to music history as academic discipline, with particular emphasis on musicology at UCLA. Study of music and its history and consideration of theoretical issues central to musicology as it is practiced today, including gender and sexuality, music and politics, race, popular music studies, and jazz studies. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**CM90T. Early Music Ensemble. (4)** (Same as Music M90T.) Activity, four hours. Preparation: audition. Group performance of Western vocal and instrumental music from historical periods prior to 1800. Early instruments may be used at instructor's discretion. May be repeated for credit without limitation. May be concurrently scheduled with course C490T. P/NP or letter grading.

**94. Music and Internet. (5)** Lecture, four hours; discussion, one hour. Survey of changes undergone by music in digital environment. As music becomes increasingly pervasive—found everywhere, yet living nowhere special—what social, economic, political, and aesthetic forces are determining centers of attention? Examination of formative force of Internet on sounds themselves. What kinds of noises develop logically within digital context, where creative freedoms and public disinterest are equally apparent? What does Internet sound like? P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M103. Creating Musical Community. (4)** (Same as Ethnomusicology M103, Global Jazz Studies M103, and Music M103.) Seminar, four hours; discussion, one hour. Limited to school of music majors. Faculty and students make music together in different modes. Students learn certain repertoire, refine it, and bring it to concert performance. Students critically engage musical literacies and notion of social contract that forms basis of musical notation. Drawing from American music folk game traditions, highlights complex history of this country and way in which entire body is used as resource when instruments are unavailable. Letter grading.

**M112. Disability and Musical-Dramatic Arts: Representation, Embodiment, Themes, and Practices. (5)** (Same as Disability Studies M112.) Lecture, four hours; discussion, one hour. Exploration of ways disability and impairment factor into musical and musical-dramatic creation and performance, considered historically and aspirationally in terms of representation, embodiment, thematics, and developing practices. P/NP or letter grading.

**M113. Variable Topics on Music and Disability. (4)** (Same as Disability Studies M113.) Seminar, four hours. Analysis and critique of depiction of disability and music. Topics may include introduction to disability studies; exploring work and creative strategies of disabled musicians; music technologies and instrument design; representation of disability in music; and more. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**125A. Music, History, and Culture: Era of Church and Patron. (5)** Lecture, four hours; discussion, one hour. Prerequisite: course M6A (may be taken concurrently). Course 125A is requisite to 125B, which is requisite to 125C. Students must receive grade of C or better to proceed to next course in sequence. Introduction to history, culture, and structure of Western



music, in era of church and court patronage, through selected topics, repertoires, and analytical techniques. Letter grading.

**125B. Music, History, and Culture: Era of Empires and Marketplaces.** (5) Lecture, four hours; discussion, one hour. Requisite: course M6B (may be taken concurrently), 125A. Course 125A is requisite to 125B, which is requisite to 125C. Students must receive grade of C or better to proceed to next course in sequence. Introduction to history, culture, and structure of Western music, in era of empires and marketplaces, through selected topics, repertoires, and analytical techniques. Letter grading.

**125C. Music, History, and Culture: Modern and Postmodern Era.** (5) Lecture, four hours; discussion, one hour. Requisite: course M6C (may be taken concurrently), 125B. Course 125A is requisite to 125B, which is requisite to 125C. Students must receive grade of C or better to proceed to next course in sequence. Introduction to history, culture, and structure of Western music, in modern and postmodern eras, through selected topics, repertoires, and analytical techniques. Letter grading.

**126. Musics, Cultures, and Their Interpretation.** (5) Lecture, four hours; discussion, one hour. Requisite or corequisite: M6A. Designed to supplement broad historical survey in Musicology 125 series by focusing on interlocking questions of how cultures make music, and how music makes cultures. Letter grading.

**127. Music, Sound, and Structure.** (5) Lecture, four hours; discussion, one hour. Requisite or corequisite: M6A. Designed to supplement broad historical survey in Musicology 125 series by focusing on interlocking questions of musical structure and meaning. Letter grading.

**128. History of Popular Music.** (5) Lecture, four hours; discussion, one hour. Requisite or corequisite: M6A. Introduction to study of popular music through American history, with emphasis on music of Americas, Afro-diasporic music, and socioeconomic structure of music making in industrial society. Letter grading.

**135A-135B-135C. History of Opera.** (5-5-5) Lecture, four hours; discussion, one hour. Designed for undergraduate students. P/NP or letter grading. **135A.** Baroque and Classical Periods; **135B.** Romantic Period; **135C.** 20th Century.

**M136. Music and Gender.** (5) (Same as Gender Studies M136.) Lecture, four hours; discussion, one hour. Analysis of gender ideologies in several musical cultures; representations of gender, body, and sexuality by both male and female musicians; contributions of women to Western art and popular musics; methods in feminist and gay/lesbian theory and criticism. Letter grading.

**M137. Lesbian, Gay, Bisexual, Transgender, and Queer Perspectives in Pop Music.** (5) (Same as Lesbian, Gay, Bisexual, Transgender, and Queer Studies M137.) Lecture, four hours; discussion, one hour. Survey of English-language popular music in 20th century, with focus on lesbians, gay men, and members of other sexual minorities as creators, performers, and audience members. Letter grading.

**140. Music, Media, and Consumer Society.** (4) Lecture, four hours. Consideration of impact of recording technologies (gramophone, tape recorder, Walkman, sampler), broadcast media (radio, television, MTV, Internet), and global capitalism (record labels, advertising, Muzak) on way we consume and are consumed by music. How music functions and malfunctions on records, under movies, behind ads, and in semiotic fabric of everyday life. Letter grading.

**160. Selected Topics in American Musical.** (5) Seminar, 90 minutes. Enforced corequisite: attendance, but not enrollment, in course 60 lecture. Exploration of connections and disconnects between American musical on stage and American film musicals. Credit for both courses 60 and 160 not allowed. Letter grading.

**162. Selected Topics in Music of Mozart.** (5) Seminar, two hours. Preparation: ability to read music and engage in melodic, harmonic, and formal analysis. Enforced corequisite: attendance, but not enrollment, in course 62 lecture. Limited to Musicology majors and minors. Intensive discussion of selected pieces by Mozart and of certain topics important to fuller understanding of his contributions to musical culture of Enlightenment, as well as to contemporary culture. Credit for both courses 62 and 162 not allowed. Letter grading.

standing of his contributions to musical culture of Enlightenment, as well as to contemporary culture. Credit for both courses 62 and 162 not allowed. Letter grading.

**163. Bach: Study of Selected Works.** (5) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 63 lecture. Limited to Musicology majors and minors. Examination of Bach's music in greater depth. Credit for both courses 63 and 163 not allowed. Letter grading.

**164. Selected Topics in African American Popular Music of 1960s.** (5) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 64 lecture. Intensive discussion of developments in post-World War II African American popular music, with special attention to musical achievements of Motown Records, Stax, and other rhythm and blues, funk, and soul music centers of production. Relationships between musical forms and cultural issues of 1960s, including Civil Rights Movement, counterculture, black nationalism, capitalism, and separatism, and larger dimensions of African American experience as mediated through groove-based music. Credit for both courses 64 and 164 not allowed. Letter grading.

**165. Blues and Individual Expression.** (5) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 65 lecture. Limited to Musicology majors and minors. In-depth look at specific blues artists, with special attention to issues of authenticity, biography, personal and group identity, commercialism, musical style, and evolving history of American music and culture in 20th century. Credit for both courses 65 and 165 not allowed. Letter grading.

**166. Medievalism and Music History.** (5) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 66 lecture. Exploration of ways in which specific approaches and attitudes to past shape music history, composition, and performance, with special focus on folk music and early music revivals. Credit for both courses 66 and 166 not allowed. Letter grading.

**168. Selected Topics on Beatles.** (5) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 68 lecture. Intensive discussion in seminar setting of selected topics associated with Beatles. Credit for both courses 68 and 168 not allowed. Letter grading.

**170. Beethoven: Study of Selected Works.** (5) Seminar, 90 minutes. Corequisite: attendance, but not enrollment, in course 70 lecture. Designed to meet needs of students who read music and wish to examine Beethoven's music in greater depth. Credit for both courses 70 and 170 not allowed. Letter grading.

**172. Selected Topics in Sacred Music.** (5) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 72 lecture. Introduction to some ways that music has been held to embody, support, and enact sacredness, including experience of god(s), sense of transcendental, work of liturgy, and intersections of music, politics, and religion. Credit for both courses 72 and 172 not allowed. Letter grading.

**M173. Selected Topics in Music and Religion in Popular Culture.** (5) (Same as Ethnomusicology M173.) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course M73 lecture. Exploration of connections of music, religion, and popular culture among American Jews and Christians. Credit for both courses M73 and M173 not allowed. Letter grading.

**177. Selected Topics in Film and Music.** Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 7 lecture. Limited to Musicology majors and minors. In-depth exploration of issues in analysis and criticism of music in film. Credit for both courses 7 and 177 not allowed. Letter grading.

**CM181. Forensic Musicology.** (4) (Same as Music Industry M181.) Seminar, three hours. Survey of critical issues and recent developments in field of forensic musicology—application of musical analysis to law of music copyright. Instructors include professionals in music industry. Study of fundamentals of music analysis and copyright law, review of key music copyright infringement cases from both legal and musicological perspectives, outlining of procedural aspects of copy-

right case, and defining of working relationship between attorney and musicologist. Concurrently scheduled with course C281. Letter grading.

**184A-184B-184C. Capstone Seminar in Music History and Industry I, II, III.** (2-4-2) Seminar, three hours. Limited to senior Music History and Industry majors. Preparation, creation, and presentation of senior capstone project. Letter grading. **184A.** Developing Project/Connections. **184B.** Creating Project/Internship. Requisite: course 184A. **184C.** Presenting Project/Report. Requisite: course 184B.

**185. Selected Topics in Rock and Roll.** (5) Seminar, two hours. Enforced corequisite: attendance, but not enrollment, in course 5 lecture. Intensive discussion in seminar setting of selected topics in rock and roll. Credit for both courses 5 and 185 not allowed. Letter grading.

**CM186. Music Industry.** (4) (Same as Ethnomusicology CM182, Music CM182, and Music Industry M182.) Lecture, four hours; discussion, one hour; outside study, seven hours. Limited to Ethnomusicology, Music, and Musicology majors. Examination of influence of music industry on way music is created, performed, listened to, evaluated, and used today. Historical approach taken, beginning with music published in 18th century and continuing through development of audio recordings to MTV and popular music today. Concurrently scheduled with course CM288. Letter grading.

**187A-187B-187C. Capstone Seminar I, II, III.** (2-4-2) Seminar, three hours; discussion, one hour. Limited to Musicology majors in their final year of academic studies. Preparation, creation, and presentation of senior capstone project. Letter grading. **187A.** Developing the Project. Taken in Fall Quarter of senior year. **187B.** Creating the Project. Requisite: course 187A. Taken in Winter Quarter of senior year. **187C.** Presenting the Project. Requisite: course 187B. Taken in Spring Quarter of senior year.

**188. Special Courses in Music History.** (4) Lecture, four hours. Special topics in music history for undergraduate students taught on temporary basis. Consult Schedule of Classes for topics and instructors. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Music History. (2)** Seminar, two hours. Designed for senior Musicology majors. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to complete their capstone projects and share their work with their peers, as well as act as interlocutors for other course members. Students expected to present their work and to discuss and help critique work of others at similar stage of development. They may elect to showcase their work before academic publics (e.g., through organizing one conference or one special publication). Letter grading.

**191A-191P. Junior Variable Topics Research Seminars: History of Music. (4 each)** Seminar, three hours. Designed for junior Musicology majors. Special aspects of music of each period studied in depth. Reading, discussion, and development of culminating project. May be repeated for credit. Letter grading. **191A.** Middle Ages; **191B.** Renaissance; **191C.** Baroque; **191D.** Classic; **191E.** Romantic; **191F.** 20th Century; **191G.** Other Topics; **191P.** Performance Practice. Practical issues in performance practice, specific questions of how musical performance intersects with cultural and political performance, and/or general issues of theory of performance in Western musics; proportion of each to be determined by repertory and historical context selected by instructor.

**193C. Music History Journal Club Seminars for Majors. (2)** Seminar, two hours. Limited to Musicology majors. Introduction to discipline through discussion of readings and lectures on current topics in field, with focus especially on its practice at UCLA, and addressing research methodologies and development of bibliographic control. Normally taken in junior year. P/NP grading.

**193D. Music History Performance/Analysis Seminars for Majors. (2)** Seminar, two hours. Recommended requisite: course 193C. Limited to Musicology majors. Introduction to how music historians engage with issues of musical performance, and of how historical concerns, theoretical issues, and methodologies can inform music as practice, especially as it is performed, recorded, listened to, danced to, and otherwise consumed. Continued attention to issues of bibliographic control. Normally taken in senior year. P/NP grading.

**195. Community Internships in Music. (2 to 4)** Tutorial, one hour; fieldwork, 10 hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business related to music or music history. Students meet on regular basis with instructor and provide periodic reports of their experiences and final project. May be repeated for credit. Individual contract with supervising faculty member required. P/NP grading.

**197. Individual Studies in Music History. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198. Honors Research in Music History. (2 to 4)** Tutorial, two hours. Preparation: completion of minimum of four upper-division music history courses with departmental grade-point average of 3.5 or better and overall GPA of 3.0. Limited to junior/senior Musicology majors. One- to two-term independent research study project under supervision of appropriate faculty member, culminating in department honors thesis of approximately 25 pages. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Music History. (1 to 4)** Tutorial, one hour. Preparation: 3.0 grade-point average. Limited to junior/senior Musicology majors. Supervised individual research under guidance of faculty mentor. Culminating paper or project required. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Introduction to Music Scholarship. (6)** Seminar, three hours. Designed for graduate musicology, ethnomusicology, and music students. Introduction to history of different fields of music scholarship (with strong focus on musicology) and to selected debates in those fields. Practical tools for research, logic and structure of arguments, evidence, critical thinking and critique, historiography, rhetoric and voice, and archival and ethnographic research. Introduction to practical written forms such as abstract, grant proposal, paper/book proposal, and review. Letter grading.

**200B. Critical, Cultural, and Social Theory. (6)** Seminar, three hours. Designed for graduate musicology, ethnomusicology, and music students. Introduction to issues surrounding music as social, cultural, and historical practice, with strong emphasis on critical, cultural, and social theory. May include introduction to social theory, materialist theories of culture, postcolonialism, critical theory, or overview of cultural theory or of group of theories selected by instructor, including feminism, performance studies, sociology, historiography, urban studies, anthropology, philosophy, psychoanalysis, poststructuralism, gender, race, and sexuality studies, lesbian, gay, bisexual, transgender, and queer studies, disability studies, and so on. Introduction to set body of theory in its relation to study of music. Letter grading.

**200C. Music Aesthetics, Analysis, and Philosophy. (6)** Seminar, three hours. Designed for graduate musicology, ethnomusicology, and music students. Exploration of selected philosophical, aesthetic, and/or analytical perspectives on music to gain insight into selected analytical and philosophical approaches to phenomenon of music and to acquire skills in analyzing and interpreting variety of repertoires. Letter grading.

**M201. Repertory and Analysis. (2)** (Same as Music M201.) Seminar, two hours. Requisite or corequisite: course 200A. Exploration of defined repertory through readings and analysis. Specific topics vary. May be repeated for credit. S/U grading.

**245. Seminar: Analytical/Repertoire Topics. (4)** Seminar, three hours. Designed for graduate musicology students. Coverage of analytical topics that vary from year to year. May be repeated for credit. Meets with course 246; concurrent enrollment in both courses not allowed. Letter grading.

**246. Audit Seminar: Analytical/Repertoire Topics. (2)** Seminar, three hours. Requisite or corequisite: course 200A. Specific topics vary from year to year. May not be applied toward MA or PhD degree requirements. May be repeated for credit. Meets with course 245; concurrent enrollment in both courses not allowed. S/U grading.

**248. Seminar: Special Topics in Musicology. (4)** Seminar, three hours. Exploration of topics in musicology through variety of approaches that may include historical, theoretical, or analytical approaches to subjects within musicology. Topics announced in advance. May be repeated for credit. Letter grading.

**250. Seminar: Theoretical Topics. (4)** Seminar, three hours. Designed for graduate musicology students. Coverage of theoretical topics that vary from year to year. May be repeated for credit. Meets with course 251; concurrent enrollment in both courses not allowed. Letter grading.

**251. Audit Seminar: Theoretical Topics. (2)** Seminar, three hours. Requisite or corequisite: course 200A. Specific topics vary from year to year. May not be applied toward MA or PhD degree requirements. May be repeated for credit. Meets with course 250; concurrent enrollment in both courses not allowed. S/U grading.

**255. Seminar: Historical Topics. (4)** Seminar, three hours. Designed for graduate musicology students. Coverage of historical topics that vary from year to year. May be repeated for credit. Meets with course 256; concurrent enrollment in both courses not allowed. Letter grading.

**256. Audit Seminar: Historical Topics. (2)** Seminar, three hours. Requisite or corequisite: course 200A. Specific topics vary from year to year. May not be ap-

plied toward MA or PhD degree requirements. May be repeated for credit. Meets with course 255; concurrent enrollment in both courses not allowed. S/U grading.

**259. Audit Seminar: Mapping Sonic Urban Geography of Los Angeles in 1940s. (2)** Seminar, three hours. Limited to departmental graduate students and those in Urban Humanities Certificate Program. Exploration of methodologies and conceptual frameworks for mapping sonic urban geography of Los Angeles in 1940s. In-depth critical discussion of current theories of music and space and of most recently developed methodologies for undertaking ethnographic or anthropological study of sound, including recording and mapping soundscapes. May not be applied toward MA or PhD degree requirements. May be repeated for credit. Meets with course 260; concurrent enrollment in both courses not allowed. S/U grading.

**260. Mapping Sonic Urban Geography of Los Angeles in 1940s. (4)** Seminar, three hours. Limited to departmental graduate students and those in Urban Humanities Certificate Program. Exploration of methodologies and conceptual frameworks for mapping sonic urban geography of Los Angeles in 1940s. In-depth critical discussion of current theories of music and space and of most recently developed methodologies for undertaking ethnographic or anthropological study of sound, including recording and mapping soundscapes. Letter grading.

**261. Topics in Performance Practice. (4)** Seminar, three hours. Designed for graduate students. Investigation of primary source readings in performance practices across history of Western music; analytical reports and practical applications in class demonstrations. May be repeated for credit. Letter grading.

**C281. Forensic Musicology. (4)** Seminar, three hours. Survey of critical issues and recent developments in field of forensic musicology—application of musical analysis to law of music copyright. Instructors include professionals in music industry. Study of fundamentals of music analysis and copyright law, review of key music copyright infringement cases from both legal and musicological perspectives, outlining of procedural aspects of copyright case, and defining of working relationship between attorney and musicologist. Concurrently scheduled with course CM181. Letter grading.

**CM288. Music Industry. (4)** (Same as Ethnomusicology CM288 and Music CM282.) Lecture, four hours; discussion, one hour; outside study, seven hours. Limited to Ethnomusicology, Music, and Musicology majors. Examination of influence of music industry on way music is created, performed, listened to, evaluated, and used today. Historical approach taken, beginning with music published in 18th century and continuing through development of audio recordings to MTV and popular music today. Concurrently scheduled with course CM186. Letter grading.

**291. Teaching Western Musical Canon. (1)** Seminar, three hours. Workshop series designed to prepare graduate musicology students to teach Western musical canon at undergraduate level. May be repeated for credit. S/U grading.

**296. Research Topics in Musicology. (2 to 4)** Seminar, two to four hours. Preparation: consultation with instructor. Designed for graduate musicology students. Advanced study and analysis of current topics in musicology. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**298. Seminar: Research Methods. (2)** Seminar, two hours. Limited to second-year graduate musicology students and students with master's degrees. Development of advanced knowledge and bibliographic control in three historically separate areas of musicological specialization. May be repeated for credit. S/U grading.

**299. Dissertation Research Colloquium. (2)** Seminar, two hours. Preparation: advancement to PhD candidacy. Presentation of ongoing dissertation research. Analysis and discussion of presentations. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**C490T. Early Music Ensemble. (4)** Activity, four hours. Preparation: audition. Group performance of Western vocal and instrumental music from historical periods prior to 1800. Early instruments may be used at instructor's discretion. May be repeated for credit without limitation. May be concurrently scheduled with course CM90T. S/U or letter grading.

**495. Introductory Practicum for Teaching Apprentices in Musicology. (4)** Seminar, three hours. Preparation: appointment as teaching apprentice in Music or Musicology Department. Required of all new teaching apprentices. Special course dealing with problems and practices of teaching music at college level. May not be applied toward degree requirements. S/U grading.

**596. Directed Individual Studies in Musicology. (2, 4, or 6)** Tutorial, to be arranged. Limited to graduate students. S/U or letter grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (2 or 4)** Tutorial, to be arranged. Preparation: completion of all MA or PhD course and language requirements. Limited to graduate students. S/U grading.

**599. Guidance of PhD Dissertation. (4, 8, or 12)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Limited to graduate students. May be repeated for credit. S/U grading.

## NAVAL SCIENCE– NAVAL ROTC

*College of Letters and Science*

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**Naval Science – Naval ROTC**

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**Naval ROTC e-mail**

Gilbert D. Juarez, MS, *Colonel, Chair*

## Faculty Roster

### Professor

Gilbert D. Juarez, MS, *Colonel, U.S. Marine Corps*

### Adjunct Assistant Professors

Kristen R. Gabel, BS, *Captain, U.S. Marine Corps*

William S. Piper, BS, *Lieutenant, U.S. Navy*

Joshua N. Ragadio, MS, *Commander, U.S. Navy*

Justin D. Rowan, BS, *Lieutenant, U.S. Navy*

## Overview

In accordance with the National Defense Act of 1920 and with the concurrence of the Regents of the University of California, a unit of the Army Senior Division Reserve Officer Training Corps (ROTC) was established on the Los Angeles campus in July 1920. Navy and Air Force units were established in 1938 and 1949 respectively.

This voluntary training in the Naval Reserve Officer Training Corps (NROTC) program allows

students to qualify for an officer's commission in the Navy or Marine Corps while completing their college education. The NROTC curricula are not considered academic majors, but NROTC courses may be taken as free electives and applied toward the total course requirements of a major. For students contracted in the Naval Science Department, 26 units of naval science credit may be applied toward the requirements for the bachelor's degree.

All three ROTC departments offer voluntary four- and three-year programs for first years and sophomores. The Army and Navy/Marine Corps also offer a two-year program for current and transfer students. All have leadership laboratories that teach leadership and management skills.

Active duty obligation following commissioning varies depending on branch of service and designated career field or occupational specialty.

## Scholarships

NROTC scholarships are awarded on a competitive basis to U.S. citizens regardless of parents' income. Scholarships cover tuition, a book allowance, fees, and a tax-free monetary allowance between \$250 and \$400 per month during the academic year. **Applications for scholarships** may be obtained online or by calling 800-628-7682. Completed applications should be submitted no later than December 31 for the fall term. Two or three-year scholarship applications may be obtained from the Naval Science Department and should be submitted no later than the end of the spring term.

## Naval ROTC Program

The Department of Naval Science provides professional training for students leading to an active duty commission at graduation in the U.S. Navy or Marine Corps. Through the NROTC, scholarship students receive full tuition, fees, books, and subsistence pay of \$250 to \$400 per month. Nonscholarship students may apply to participate as members of the midshipman battalion under the NROTC College Program and, if selected for advanced standing prior to their junior year, may receive an active duty commission at graduation. Because of the rapid development of highly technical ship systems, aviation, and other military equipment, science and engineering majors are highly desirable; however, Navy/Marine Corps scholarships are currently available to students pursuing any major offered by UCLA, as long as they agree to complete basic technical requirements. In addition to UC and UCLA requirements, Navy option midshipmen must complete 30 units and Marine Corps option midshipmen 22 units of naval science courses, physical fitness tests, and summer training, each about four to six weeks long. Both Navy and Marine Corps option students must also pass a swimming test. Naval science courses are open to UCLA students who are not in the program with consent of instructor and demonstrated interest in the Navy/Marine Corps and related fields, such as engineering, navigation and naval operations, history, and management.

## Undergraduate Study

### College Program (Nonscholarship)

Students attending UCLA who meet Navy/Marine Corps requirements but who do not have an NROTC scholarship may enroll in the College Program during their freshman or sophomore year. These students have the opportunity to compete for scholarships. If they do not win a scholarship, or choose not to compete for one, they must compete for advanced standing prior to their junior year. All College Program students receive uniforms, naval science textbooks and, once selected for advanced standing, monthly subsistence pay in their junior and senior years.

### Marine Corps Option

Highly motivated NROTC students may request designation as Marine Corps option students and may also pursue any UCLA academic degree. The final summer training, and a requirement to be commissioned as an officer in the Marine Corps, involves intensive Marine training at Officer Candidate School in Quantico, Virginia. Marine Corps option students also participate, on a limited basis, in field training exercises during the academic year.

## Naval Science

### Lower-Division Courses

**Z. Naval Science Laboratory. (No credit)** Laboratory, to be arranged. Mandatory for and limited to Naval Science ROTC midshipmen. Provides midshipmen with general military training and practical command and staff leadership experiences through classroom instruction and performance of various tasks and interactive processes within framework of organized midshipmen-run military unit, with oversight by active-duty military staff. As integral part of naval science curriculum, provides professional experiences designed to develop leadership potential and orientation for active duty. No grading.

**1A. Introduction to Naval Science. (3)** Lecture, three hours. Introduction to organization of Naval Service, various components of Navy, career opportunities, shipboard damage control, fire fighting, Naval and Marine Corps operations, and some customs and traditions of Naval Service. Letter grading.

**1B. Naval Ship Systems I. (4)** Lecture, four hours. Introduction to naval engineering, with emphasis on steam, nuclear, diesel, and gas turbine propulsion systems and their associated auxiliary components. Basic thermodynamic theory, electrical theory, stability, and buoyancy. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A. Naval Ship Systems II. (4)** Study of naval weapon systems, with emphasis on infrared, radar, and sonar principles. Target designation and acquisition, methods of solving fire control problem, target detection systems. Analysis of transfer and feedback functions inherent in weapon systems.

**20B. Seapower and Maritime Affairs. (3)** Lecture, three hours. Conceptual study of seapower, with emphasis on historical development of naval and commercial power. Seapower examined in relation to economic, political, and cultural strengths, with focus on current abilities of specific nations to use oceans to attain national objectives. P/NP or letter grading.

## Upper-Division Courses

**101A. Navigation. (4)** Lecture, four hours. Study of principles of piloting, celestial, and electronic navigation employed in determining a ship's position at sea. Celestial and electronic theory, mathematical analysis, sextant sights, and use of navigational aids. P/NP or letter grading.

**101B. Naval Operations and Seamanship. (4)** Lecture, four hours. Requisite: course 101A. Study of rules of road, shiphandling, and basic concepts of multiple ship formations and maneuvering. In-depth analysis of problems associated with operations on high seas and inland waters applying to civil and U.S. Naval craft. Letter grading.

**102B. Naval Leadership and Management. (4)** Lecture, four hours. Examination of current and classical leadership and management theories, with emphasis on their application to junior military officer's role as a leader/manager. Topics include managerial functions, performance appraisal, motivation theories, group dynamics, leadership theories, and communication. P/NP or letter grading.

**102C. Leadership and Ethics. (4)** Lecture, four hours. Recommended requisite for Naval Science ROTC midshipmen: course 102B. Capstone and second of two core leadership courses that provide academic foundation of NROTC leadership development. Integration of intellectual exploration of Western moral traditions and ethical philosophy with military leadership, core values, professional ethics, Uniform Code of Military Justice, and Navy regulations. Provides midshipmen with basic understanding of major moral traditions, including relativism, utilitarianism, Kantian ethics, natural law theory, divine command theory, and virtue ethics. Letter grading.

**103. Evolution of Warfare. (4)** Study of evolution of warfare, including historical and comparative consideration of influence that leadership, political, economic, and sociological and technological development factors have had on warfare and influence they continue to exert in age of limited warfare.

**104. Fundamentals of Maneuver Warfare. (4)** Seminar, four hours. Study of fundamentals of maneuver warfare, with particular emphasis on doctrine, tactics, and equipment used. Examination of topics through study of political and military objectives by focusing on historical examples from Revolutionary War to modern times. Examination of contemporary doctrine through study of recent operations. Letter grading.

**197. Individual Studies in Naval Science. (1 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## NEAR EASTERN LANGUAGES AND CULTURES

*College of Letters and Science*

378 Kaplan Hall  
Box 951511  
Los Angeles, CA 90095-1511

[Near Eastern Languages and Cultures](#)

310-825-4165

[Department e-mail](#)

Kathlyn (Kara) M. Cooney, PhD, *Chair*

## Faculty Roster

### Professors

Khaled M. Abou El Fadl, JD, MA, PhD (*Omar and Azmeralda Alfi Endowed Professor of Islamic Law*)

Carol A. Bakhos, PhD

Aaron A. Burke, PhD (*Kershaw Professor of Ancient Eastern Mediterranean Studies*)

Kathlyn (Kara) M. Cooney, PhD

Michael D. Cooperson, PhD

S. Peter Cowe, PhD (*Narekatsi Professor of Armenian Studies*)

Nouri Gana, PhD

Nile S. Green, PhD (*Ibn Khaldun Endowed Professor of World History*)

William M. Schniedewind, PhD

M. Rahim Shayegan, PhD (*Jahangir and Eleanor Amuzegar Professor of Iranian Studies*)

Susan E. Slyomovics, PhD

Willeke Z. Wendrich, PhD

### Professors Emeriti

Arnold J. Band, PhD

Giorgio Buccellati, PhD

Elizabeth F. Carter, PhD

Lev Hakak, PhD

Ismail K. Poonawala, PhD

Yona Sabar, PhD

### Associate Professors

Domenico Ingenito, PhD

Asma Sayeed, PhD

Luke B. Yarbrough, PhD

### Assistant Professors

Solange Ashby, PhD

Catherine E. Bonesho, PhD

Gina V. Konstantopoulos, PhD

Anthony D. Yates, PhD

### Senior Lecturers

Latifeh E. Hagigi, MA

Jeremy D. Smoak, PhD

### Lecturers

Kinda A. Al Rifaa, PhD

Sariel H. Birnbaum, PhD

Katherine S. Burke, PhD

Zeynep Durmus, MA

Abeer T. Hamza, PhD

Tereza Hovhannisyanyan, MA

Hagop Kouloujian, MBA

Nahid Pirnazar, PhD

Banafsheh Pourzangi, MA

Sahba Shayani, PhD

### Adjunct Professor

Ahmad Karimi-Hakkak, PhD

### Adjunct Associate Professor

Hans Barnard, MD, PhD

### Adjunct Assistant Professor

Ali Mousavi, PhD

## Overview

The department offers instruction in the major modern and ancient languages of the Near East: Akkadian, ancient Egyptian, Arabic, Aramaic, Armenian, Berber, Coptic, Hebrew, Persian, and Turkic. To meet increasing demands for a knowledge of this area and its past and present, it treats each language in a wide perspective—as a means of communication, as a vehicle of a cultural heritage, as a research tool for the area, and as an object of research itself.

## Mission

The mission of the department is the discovery, interpretation, dissemination, and preservation of human values created over a period of five or more thousand years in an area that was the cradle of all civilization.

## Undergraduate Study

Undergraduate majors may be taken in Ancient Near East and Egyptology, Arabic, Iranian Studies, Jewish Studies, and Middle Eastern Studies. In each of these fields students must meet the requisites and take the courses prescribed. Their adviser assists in selecting a plan of study developed around their interests.

Students may combine their major with one in another department (double major) to enhance their educational opportunities. Due to the number of additional courses required, they are advised to consider this option early in their academic career and in consultation with program advisers in both majors.

## Graduate Study

Master of Arts (MA) and Doctor of Philosophy (PhD) programs are offered in Ancient Near Eastern Civilizations, Arabic, Armenian, Hebrew, Iranian, Islamic Studies, Semitics, and Turkic.

## Career Prospects

Courses in the department prepare students for careers in government, foreign trade, teaching abroad, journalism abroad, archaeology, and further academic work involving the area.



## Undergraduate Majors

### Ancient Near East and Egyptology BA

#### Study Abroad

Students are encouraged to spend time abroad either to (1) study with an education abroad program or (2) work on a UCLA-affiliated archaeological excavation in the broader Middle East. For information on studying abroad, contact the [Education Abroad Program](#), 1332 Murphy Hall, 310-825-4995; for UCLA-affiliated excavations, contact the departmental academic counselor at 310-825-4165.

#### Learning Outcomes

The Ancient Near East and Egyptology major has the following learning outcomes:

- Demonstrated mastery of the ancient Near East and its history
- Demonstrated skills and expertise, including research, analysis, and writing
- Identification, evaluation, and analysis of historical monuments, time periods, vocabulary, concepts, and historical figures

#### Entry to the Major

##### Transfer Students

Transfer applicants to the Ancient Near East and Egyptology major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one civilization course on Mesopotamia, Egypt, Near Eastern archaeology, or Middle Eastern cultures.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Requirements

##### Preparation for the Major

*Required:* Three courses selected from Ancient Near East 10W, 12W, 14W, 15, 15W, M60, Middle Eastern Studies M50A, M50B, Near Eastern Languages M20.

##### The Major

Students must complete 10 courses as follows:

*Required Core Courses:* One course selected from four of the following five areas (total of four courses):

*Archaeology and Art:* Ancient Near East CM101A, CM101B, M101C, M105, 160, 161, 162, CM163, C165, M166, CM169, Islamic Studies M111, or M112.

*History:* Ancient Near East M103A through M104D, M110A, M110B, M110C, or Jewish Studies M182A.

*Languages:* Ancient Near East 120A, 120B, 120C, 140A, 140B, 140C, M168A, Hebrew 110A, 110B, 110C, Semitics M140A, or 140B.

*Literature:* Ancient Near East 150A, 150B, Jewish Studies M150A, or 170.

*Religion:* Ancient Near East M130, M135, M167, M170, M185D, Iranian 170, or Jewish Studies M155.

*Required Elective Courses:* Any six courses (no more than three may be from Anthropology) selected from the categories above or from Ancient Near East 121A, 121B, 121C, C123A, C123B, 124, 125A, M125B, M125C, 175, C177, M179, Anthropology 110, CM110Q, 111, 112R, 130, M150, English 111A, 111B, 111C, Greek 130, Hebrew 125, 130, 135, 188FL, Study of Religion M186A, M186B, M186C, Semitics 130, 141, 142.

#### Policies

##### Preparation for the Major

Each course must be taken for a letter grade.

##### The Major

A maximum of 8 units of special studies courses (197, 198, 199) approved by the department may be applied toward the major. Each course must be taken for a letter grade.

### Arabic BA

#### Learning Outcomes

The Arabic major has the following learning outcomes:

- Demonstrated written and oral mastery of the Arabic language
- Demonstrated knowledge of other Arabic dialects such as Iraqi, Egyptian, etc.
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Ability to read texts in Arabic, and to analyze the language and cultural context
- Identification, evaluation, and analysis of historical monuments, time periods, vocabulary, concepts, and historical figures

#### Entry to the Major

##### Transfer Students

Transfer applicants to the Arabic major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of Arabic.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Requirements

##### Preparation for the Major

*Required:* Arabic 1A, 1B, 1C, History 9D or Middle Eastern Studies M50CW, Islamic Studies M20, Near Eastern Languages M20, 65.

##### The Major

*Required:* Eleven courses, including Arabic 102A, 102B, and 102C, or 108; two courses from Arabic or Islamic studies; and six courses from Anthropology M166Q, Arabic 103A, 103B, 103C, 105, CM106, M107, M110, 111A, 111B, 111C, 112A, 112B, 112C, 115, 116A, 116B, 116C, 120, M123, 130, 132, 140, C141, 142, M148, 150, M151, M155, M171, 177, 180, 181, Art History 119A, 119B, C120, Comparative Lit-

erature 100, History 105A, 105B, 105C, M106, 108B, 111A, 111B, 111C, Islamic Studies CM107, M111, M112, CM115, 130, 151, Political Science 132A, M132B, 157, 165.

#### Policies

##### The Major

No more than two upper-division 4-unit independent study or directed research courses (197, 199) may be applied toward the major. Other courses, including extra-departmental courses, may be applied with consent of the adviser.

### Iranian Studies BA

Students majoring in Iranian Studies may combine the major with specialization in other fields to enhance their career opportunities. Due to the number of additional courses required, they are advised to consider this option early in their academic career.

#### Learning Outcomes

The Iranian Studies major has the following learning outcomes:

- Demonstrated written and oral mastery of Persian language
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Ability to read texts in Persian and analyze the language and cultural context
- Identification, evaluation, and analysis of historical monuments, periods in time, vocabulary, concepts, and historical figures

#### Entry to the Major

##### Transfer Students

Transfer applicants to the Iranian Studies major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of Persian.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Requirements

##### Preparation for the Major

*Required:* Iranian 1A, 1B, and 1C, or 20A, 20B, and 20C, or equivalent, and Iranian 55 or M60.

##### The Major

*Required:* Eleven courses, including seven in Iranian language and civilization selected from Ancient Near East CM163, Iranian 102A, 102B, 102C, 103A, 103B, 103C, M110A, M110B, M110C, 120, 140, 141, 142, 161A, 161B, 161C, CM163, 164, 169, 170 (at least three of the seven must be selected from Iranian 102A, 102B, 102C, 103A, 103B, 103C, 120, 140, 141, 142) and four elective courses from the department or from Art History 119A, 119B, C120, History 105A, 105B, 105C, Iranian 104, M105A, M105B, M105C, M115A, M115B, M115C, 130, 131, 132, 150A, 150B, M178, 187, Political Science 157.

## Policies

### The Major

A maximum of two Iranian 197 or 199 courses (8 units total) may be applied toward the major.

## Jewish Studies BA

### Study Abroad

Students are encouraged to spend up to one year in Israel either to (1) study with an education abroad program or (2) study at an Israeli university. For information on studying in Israel, contact the [Education Abroad Program](#), 1332 Murphy Hall, 310-825-4889.

### Learning Outcomes

The Jewish Studies major has the following learning outcomes:

- Demonstrated written and oral mastery of the Hebrew language
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Ability to read texts in Hebrew and analyze the language and cultural context
- Identification, evaluation, and analysis of historical monuments, periods in time, vocabulary, concepts, and historical figures

### Entry to the Major

#### Transfer Students

Transfer applicants to the Jewish Studies major with 90 or more units must complete the following introductory course prior to admission to UCLA: one social, cultural, and religious institutions of Judaism course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Jewish Studies M10, one course selected from Ancient Near East 10W, 12W, Jewish Studies M67, M80, M82, Middle Eastern Studies M50A, M50B, M50CW, and demonstrated proficiency equivalent to level 3 at UCLA in one foreign language (Arabic, Armenian, Hebrew) in consultation with the department.

#### The Major

*Required:* Eleven courses, including (1) three selected from Hebrew 102A, 102B, 102C, 103A, 103B, 103C, 110A, 110B, 111A, 111B, 111C, 112, M113, 120, 125, 130, 135, C140, 170, 180A, 180B, 188FL—students may substitute another upper-division language (Judeo-Arabic, Judeo-Persian, Ladino, Yiddish) if they can demonstrate its integral role in their specific course of study, (2) two courses selected from Jewish Studies 140A, 140B, M142, M144, M178, M181, M182A, M182B, M182C, M184A, M184B, M184C, and (3) six elective courses selected from Hebrew or Jewish studies or from Ancient Near East M135, 162, M170, English 111A, 111C, German 109, History 191F, Iranian 130, 131, 132, M178, Political Science 121A, 132A,

M132B, Semitics 130, Study of Religion 120, Yiddish 101A, 101B, 101C, 102A, 102B, 102C, 121A, 121B, 121C, 130, 131A, 131B, 131C.

## Policies

### The Major

Students are encouraged to take a research tutorial within Jewish Studies 197 or 199. A maximum of two 197 or 199 courses (8 units total) may be applied toward the major.

## Middle Eastern Studies BA

### Study Abroad

Students are encouraged to spend time abroad either to (1) study with an education abroad program or (2) work on a UCLA-affiliated archaeological excavation in the broader Middle East. For information on studying abroad, contact the [Education Abroad Program](#), 1332 Murphy Hall, 310-825-4889; for UCLA-affiliated excavations, contact the departmental academic counselor at 310-825-4165.

### Learning Outcomes

The Middle Eastern Studies major has the following learning outcomes:

- Demonstrated written and oral mastery of a Middle Eastern language
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Identification, evaluation, and analysis of historical monuments, periods in time, vocabulary, concepts, and historical figures

### Entry to the Major

#### Transfer Students

Transfer applicants to the Middle Eastern Studies major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of Arabic, Armenian, Hebrew, Persian, Turkish, or another modern middle Eastern language.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Two courses selected from Ancient Near East 10W, 12W, 14W, 15, 15W, M60, History 9D, Iranian 55, M60, Islamic Studies M20, Jewish Studies M10, Middle Eastern Studies M50A, M50B, M50CW, Near Eastern Languages M20, 65, and demonstrated proficiency equivalent to level 3 at UCLA in one modern Middle Eastern language (Arabic, Armenian, Hebrew, Persian, Turkish) or through a departmental language placement examination. Students selecting ancient languages (including Akkadian, Aramaic, Coptic, Egyptian, Old or Middle Iranian, Sumerian, Syriac) are not required to take a modern elementary Middle Eastern language.

#### The Major

Students must complete 11 courses as follows:

*Required Core Courses:* A total of six courses, including at least two from three of the following four areas:

*History:* Ancient Near East M103A, M103B, M104A, M110A, M110B, M110C, Anthropology 166P, Arabic M171, Armenian 130, 131, History 105A, 105B, 105C, M108C, Iranian M110A, M110B, M110C, CM163, 164, M178, Jewish Studies M178, M182A, M182B, M182C, M184A, M184B, M184C, M184D.

*Language:* Ancient Near East (Egyptian) 120A, 120B, 120C, Ancient Near East (Coptic) C123A, C123B, Ancient Near East (Sumerian) 140A, 140B, 140C, Ancient Near East (Hittite) M168A, Arabic 102A, 102B, 102C, 103A, 103B, 103C, 112A, 112B, 112C, Armenian 102A, 102B, 102C, 103A, 103B, 103C, 105A, 105B, 105C, 106A, 106B, 106C, Hebrew 102A, 102B, 102C, 103A, 103B, 103C, 110A, 110B, Iranian 103A, 103B, 103C, 161A, 161B, 161C, Semitics (Aramaic) 110, 130, Semitics (Syriac) 115, Semitics (Akkadian) M140A, 140B, 141, Turkic Languages (Turkish) 102A, 102B, 102C, Turkic Languages (Uzbek) 112A, 112B, 112C, Turkic Languages (Azeri) 116A, 116B, 116C.

*Literature:* Ancient Near East 150A, 150B, Arabic M110, C141, M148, Hebrew 120, 125, 130, 135, C140, 170, Jewish Studies M113, 143, M150A, 150B, M151A, 151B, M162, 170, 175, M187, Iranian 120, 130, 131, 132, 140, 141, 150A, 150B.

*Religion:* Ancient Near East M130, M135, M170, M185D, History M106, Iranian 170, Islamic Studies CM115, 130, C151, Jewish Studies M155, 170, Study of Religion 120.

*Required Elective Courses:* Any five courses from the department or from Anthropology M166Q, 167, Art History C116A, 119A, 119B, C120, Economics 111, 112, Ethnomusicology 161L, 161N, French 121, 160, History 105A, 105B, 105C, M106, 107A through 107D, 108A, 108B, 109B, M110B, 111A, 111B, 111C, 116A, 116B, 164B, 167A, M184D, M185F, M185G, M185I, Philosophy 104, Political Science 132A, M132B, 157, 165, Study of Religion 120.

## Policies

### The Major

Students may petition to substitute a core or elective course with a departmental independent study/directed research course (197, 198, or 199) as long as it covers a topic relevant to Middle Eastern studies. No more than two 197, 198, or 199 courses (8 to 10 units) may be applied toward the major.

## Undergraduate Minors

### Ancient Near East and Egyptology Minor

#### Admission

To enter the Ancient Near East and Egyptology minor, students must have an overall grade-point average of 2.0 or better and file a petition in 378 Kaplan Hall, 310-825-4165.

## The Minor

*Required Lower-Division Courses (10 units):* Two courses selected from Ancient Near East 10W, 12W, 14W, 15, 15W, Middle Eastern Studies M50A, M50B, M50CW, Near Eastern Languages M20.

*Required Upper-Division Core Courses (12 to 15 units):* Three courses selected from Ancient Near East CM101A, CM101B, M101C, M103A, M103B, M104A through M104D, M105, M110A, M110B, M110C, 120A, 120B, 120C, M130, M135, 140A, 140B, 150A, 150B, 162, CM163, C165, M170, 175, M185D, Hebrew 110A, 110B, 110C, Iranian 170, Jewish Studies M150A, Semitics M140A, 140B.

*Required Elective Courses (8 to 10 units):* Two courses selected from Ancient Near East 121A, 121B, 121C, C123A, C123B, 124, 125A, M125B, M125C, 160, 161, M166, M167, M168A, CM169, C177, Anthropology 110, CM110Q, 111, 112R, 117P, 130, M150, Hebrew 110A, 110B, 110C, 125, 130, 135, 188FL, Jewish Studies 150B, 170, Study of Religion M186A, M186B, M186C, Semitics 130, 141, 142.

## Policies

A maximum of 4 graded units of special studies courses (197, 198, 199) approved by the adviser may be applied toward the minor. No course for the minor or preparation for the minor may be taken on a P/NP grading basis.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Arabic and Islamic Studies Minor

The Arabic and Islamic Studies minor is designed for students who wish to augment their major program with a group of related courses that provide a systematic introduction to the study of Arabic language and literature and Islam.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and file a petition in 378 Kaplan Hall, 310-825-4165.

## The Minor

*Required Lower-Division Courses (15 units):* Arabic 1A, 1B, 1C, or equivalent.

*Required Upper-Division Courses (20 units):* Five courses in Arabic or Islamic studies; 199 courses may not be applied. Courses recommended as electives for the major in Arabic (Anthropology M166Q, Art History 119A, 119B, C120, Comparative Literature 100, History 105A, 105B, 105C, M106, 108B, 111A, 111B,

111C, 130, Political Science 132A, M132B, 157, 165) may be applied.

## Policies

With consent of the undergraduate adviser, two of the five courses may be taken outside the department. Other courses may be applied with consent of the adviser.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Armenian Studies Minor

The Armenian Studies minor is designed for students who wish to augment their major program with a group of courses that provide a systematic introduction to the study of Armenian culture.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and file a petition in 378 Kaplan Hall, 310-825-4165.

## The Minor

*Required Upper-Division Courses (35 units):* Three Armenian language courses selected from Armenian 101A, 101B, 101C, 102A, 102B, 102C, 103A, 103B, 103C, 104A, 104B, 104C, 105A, 105B, 105C, 106A, 106B, 106C; four courses from the Armenian section of the department.

## Policies

Course 199 may not be applied. With consent of the undergraduate adviser, two of the five courses may be taken outside the department. Ordinarily, the following courses may be applied: History 107A through 107E, Indo-European Studies M150.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Hebrew and Jewish Studies Minor

## Admission

To enter the Hebrew and Jewish Studies minor, students must have an overall grade-point average of 2.0 or better and file a petition in 378 Kaplan Hall, 310-825-4165.

## The Minor

*Required Lower-Division Courses (15 units):* Hebrew 1A, 1B, 1C, or 8, or equivalent.

*Required Upper-Division Courses (20 units):* Five courses from the Hebrew or Jewish studies section of the department; 199 courses may not be applied. With consent of the undergraduate adviser and based on course content, two of the five courses may be taken outside the department.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Iranian Studies Minor

## Admission

To enter the Iranian Studies minor, students must have an overall grade-point average of 2.0 or better and file a petition in 378 Kaplan Hall, 310-825-4165.

## The Minor

*Required Lower-Division Courses (10 to 11 units):* Iranian 1C or 20C or equivalent and one course from Iranian 55 or M60.

*Required Upper-Division Courses (20 to 23 units):* (1) Three *language and civilization* courses from Iranian 102A, 102B, 102C, 103A, 103B, 103C, M110A, M110B, M110C, 120, 140, 141, 142, 161A, 161B, 161C, 164, 169, 170 and (2) two *elective* courses from Iranian M105A, M105B, M105C, M115A, M115B, M115C, 130, 131, 132, 150A, 150B, CM163, M178, 187.

## Policies

A maximum of 4 units of special studies courses (197, 198, 199) approved by the adviser may be applied toward the minor. No course for the minor may be taken on a P/NP grading basis.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Israel Studies Minor

The Israel Studies minor is designed for students interested in adding a particular focus on Israel to their major. Comprised of coursework that serves to create a broad introductory foundation of familiarity with Israeli history, society, politics, and culture, the minor is appropriate



for students from a wide range of majors including Art, Comparative Literature, Film and Television, History, Jewish Studies, Middle Eastern Studies, Political Science, and Study of Religion.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better, completed Middle Eastern Studies M50CW or equivalent, and file a petition in 378 Kaplan Hall, 310-825-4165.

## The Minor

*Required Lower-Division Courses (10 units):* Two courses from Ancient Near East 10W, 12W, Jewish Studies M10, Middle Eastern Studies M50A, M50B, or M50CW.

*Required Upper-Division Courses (20 to 25 units):* Jewish Studies M142, M144, and three courses from at least two of the following categories: (1) *language*—Arabic 102A, 102B, 102C, 103A, 103B, 103C, Hebrew 102A, 102B, 102C, 103A, 103B, 103C, 110A, 110B, 110C, 111A, 112, (2) *literature, arts, and culture*—Arabic 120, M123, 130, M148, Hebrew M113, C140, Jewish Studies M150A, 150B, 151B, M162, 175, Middle Eastern Studies C122, (3) *politics*—Political Science 120B, 132A, M132B, 157, (4) *regional and historical setting*—History 105A, 105B, 105C, Study of Religion 110, 120.

## Policies

A maximum of 4 graded units of special studies courses (197, 198, 199) approved by the department may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Middle Eastern Studies Minor

The Middle Eastern Studies minor is designed for students who wish to augment their major program in the College of Letters and Science with a group of related courses from various linguistic, literary, archaeological, and historical disciplines of the Near East, from ancient Egypt, Mesopotamia, and biblical studies to the modern Arabic, Armenian, Iranian, Jewish, and Turkish world.

## Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and file a petition in 378 Kaplan Hall, 310-825-4165.

## The Minor

*Required Lower-Division Courses (9 to 10 units):* Two courses selected from Ancient Near East 10W, 12W, 14W, 15, 15W, M60, History 9D, Iranian 55, M60, Islamic Studies M20, Jewish Studies

M10, Middle Eastern Studies M50A, M50B, M50CW, Near Eastern Languages M20, 65.

*Required Upper-Division Courses (20 units):* A total of five courses, including at least three from one of the following four areas:

*History:* Ancient Near East M103A, M103B, M104A, M110A, M110B, M110C, Anthropology 166P, Arabic M171, Armenian 130, 131, History 105A, 105B, 105C, M108C, Iranian M110A, M110B, M110C, CM163, 164, M178, Jewish Studies M178, M182A, M182B, M182C, M184A, M184B, M184C, M184D.

*Language:* Ancient Near East (Egyptian) 120A, 120B, 120C, Ancient Near East (Coptic) C123A, C123B, Ancient Near East (Sumerian) 140A, 140B, 140C, Ancient Near East (Hittite) M168A, Arabic 102A, 102B, 102C, 103A, 103B, 103C, 112A, 112B, 112C, Armenian 102A, 102B, 102C, 103A, 103B, 103C, 105A, 105B, 105C, 106A, 106B, 106C, Hebrew 102A, 102B, 102C, 103A, 103B, 103C, 110A, 110B, 110C, Iranian 102A, 102B, 102C, 103A, 103B, 103C, 161A, 161B, 161C, Semitics (Aramaic) 110, 130, Semitics (Syriac) 115, Semitics (Akkadian) M140A, 140B, 141, Turkic Languages (Turkish) 102A, 102B, 102C, Turkic Languages (Uzbek) 112A, 112B, 112C, Turkic Languages (Azeri) 116A, 116B, 116C.

*Literature:* Ancient Near East 150A, 150B, Arabic M110, C141, M148, Hebrew 120, 125, 130, 135, C140, 170, Jewish Studies M113, 143, M150A, 150B, M151A, M162, 170, 175, M187, Iranian 120, 130, 131, 132, 140, 141, 150A, 150B.

*Religion:* Ancient Near East M130, M135, M185D, History M106, Iranian 170, Islamic Studies CM115, 130, C151, Jewish Studies M155, 170, Study of Religion 120.

*Required Elective Courses:* Up to two additional courses may be selected from the department or from Anthropology M166Q, 167, Art History C116A, 119A, 119B, C120, Economics 111, 112, Ethnomusicology 161L, 161N, French 121, 160, History 105A, 105B, 105C, M106, 107A through 107D, 108A, 108B, 109B, M110B, 111A, 111B, 111C, 116A, 116B, 164B, 167A, M184D, M185F, M185G, M185I, Philosophy 104, Political Science 132A, M132B, 157, 165, Study of Religion 120.

## Policies

Students may not substitute a core or elective course with a departmental independent study/directed research course (197, 198, or 199).

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Islamic Studies MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Near Eastern Languages and Cultures MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Ancient Near East

See [Semitics](#) for Akkadian, Aramaic, Phoenician, Syriac, and Ugaritic courses.

### Lower-Division Courses

**10W. Jerusalem: Holy City. (5)** Lecture, three hours; discussion, one hour. Enforced prerequisite: English Composition 3. Not open for credit to students with credit for course 12W. Survey of religious, political, and cultural history of Jerusalem over three millennia as symbolic focus of three faiths: Judaism, Christianity, and Islam. Transformation of sacred space as reflected by literary and archaeological evidence through examination of testimony of artifacts, architecture, and iconography in relation to written word. Study of creation of mythic Jerusalem through event and experience. Satisfies Writing II requirement. Letter grading.

**12W. Jerusalem: Holy City. (5)** Seminar, four hours. Enforced prerequisite: English Composition 3. Not open for credit to students with credit for course 10W. Survey of religious, political, and cultural history of Jerusalem over three millennia as symbolic focus of three faiths: Judaism, Christianity, and Islam. Transformation of sacred space as reflected by literary and archaeological evidence through examination of testimony of artifacts, architectural monuments, and iconography in relation to written sources. Study of creation of mythic Jerusalem through event and experience. Development of advanced writing skills and critical thinking. Satisfies Writing II requirement. Letter grading.

**14W. Medicine, Magic, and Science in Ancient Times. (5)** Lecture, three hours; discussion, one hour. Prerequisite: English Composition 3. Overview of history of medicine and sciences, focusing especially on Ancient Near East, China, and Meso-America. Satisfies Writing II requirement. Letter grading.

**15. Women and Power in Ancient World. (5)** Lecture, four hours; discussion, one hour. Not open for credit to students with credit for course 15W. Examination of how feminine power confronts masculine dominance within complex social systems in ancient world. To gain political power, some female rulers used their sexuality to gain access to important men. Other women gained their position as regents and helpers of masculine kings who were too young to rule. Others



denied their femininity in dress and manner, effectively androgynizing themselves or pretending to be men so that their femininity would not be obstacle to political rule. Many women only gained throne at end of dynasties after male line had run out entirely, or in midst of civil war when patrilineal successions were in disarray. Women were sometimes only effective leaders left in drawn-out battles against imperial aggression. No women were able to gain reigns of power through their bloodlines alone. Women's power was compromised from outset. Examination of root causes and results of this political inequality. P/NP or letter grading.

**15W. Women and Power in Ancient World. (5)** Lecture, four hours; discussion, one hour. Requisite: English Composition 3. Not open for credit to students with credit for course 15. Examination of how feminine power confronts masculine dominance within complex social systems in ancient world. To gain political power, some female rulers used their sexuality to gain access to important men. Other women gained their position as regents and helpers of masculine kings who were too young to rule. Others denied their femininity in dress and manner, effectively androgynizing themselves or pretending to be men so that their femininity would not be obstacle to political rule. Many women only gained throne at end of dynasties after male line had run out entirely, or in midst of civil war when patrilineal successions were in disarray. No women were able to gain reigns of power through their bloodlines alone. Women's power was compromised from outset. Examination of root causes and results of this political inequality. Satisfies Writing II requirement. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Egyptian Hieroglyphs. (5)** Lecture, five hours. Basic introduction to language and hieroglyphic script of ancient Egypt. Devoted to learning principles of hieroglyphic writing and Egyptian grammar, deciphering standard inscriptions, and using hieroglyphic text editing software to type hieroglyphs on computer. Students acquire ability to recognize and translate hieroglyphic inscriptions on common museum objects. P/NP or letter grading.

**M50A. First Civilizations. (5)** (Same as Middle Eastern Studies M50A.) Lecture, three hours; discussion, one hour. Survey of great civilizations of ancient Near East—Egypt, Israel, and Mesopotamia—with attention to emergence of writing, monotheism, and urban societies. Letter grading.

**M50B. Origins of Judaism, Christianity, and Islam. (5)** (Same as Middle Eastern Studies M50B and Religion M50.) Lecture, three hours; discussion, one hour. Examination of three major monotheisms of Western cultures—Judaism, Christianity, and Islam—historically and comparatively. Development, teachings, and ritual practices of each tradition up to and including medieval period. Composition and development of various sacred texts, highlighting key themes and ideas within different historical and literary strata of traditions, such as mechanisms of revelation, struggle for religious authority, and common theological issues such as origin of evil and status of nonbelievers. Letter grading.

**M60. Achaemenid Civilization and Empire of Alexander. (5)** (Same as History M60 and Iranian M60.) Lecture, three hours; discussion, one hour. Survey of period from circa 600 to 300 BCE, rise and fall of Achaemenid Persia, first world empire of antiquity, which was ended by Alexander the Great, whose campaigns were as transformative as they were violent. Alexander connected ancient Mediterranean and Near East as never before, ushering in new era and forever changing cultural landscape of ancient world. Focus on themes of ancient kingship and political ideology; comparative study of empires; administration and institutions; and religious and ethnic diversity in large, heterogeneous states. Emphasis on diversity critical to understanding political nuances of ancient world. Students gain broad knowledge of Achaemenid and Macedonian empires, facility with ancient primary sources, and development of analytical skills central

to discipline of history that allow conceptualizing issues of diversity and othering in ancient world. P/NP or letter grading.

**M60W. Achaemenid Civilization and Empire of Alexander. (5)** (Same as History M60W and Iranian M60W.) Lecture, three hours; discussion, one hour. Requisite: English Composition 3. Not open for credit to students with credit for course M60. Survey of period from circa 600 to 300 BCE, rise and fall of Achaemenid Persia, first world empire of antiquity, which was ended by Alexander the Great, whose campaigns were as transformative as they were violent. Alexander connected ancient Mediterranean and Near East as never before, ushering in new era and forever changing cultural landscape of ancient world. Focus on themes of ancient kingship and political ideology; comparative study of empires; administration and institutions; and religious and ethnic diversity in large, heterogeneous states. Emphasis on diversity critical to understanding political nuances of ancient world. Students gain broad knowledge of Achaemenid and Macedonian empires, facility with ancient primary sources, and development of analytical skills central to discipline of history that allow conceptualizing issues of diversity and othering in ancient world. Satisfies Writing II requirement. P/NP or letter grading.

**M70. Demons, Fear, and Uncanny in Ancient World. (5)** (Same as Religion M70.) Lecture, three hours; discussion, one hour. Consideration of place of demons and fear in several different societies and cultures in ancient world: Mesopotamia; ancient Egypt, Greece, and Rome; and Biblical and early Jewish contexts. Investigation into why demons and monsters existed in these cultures; how they were opposed or protected again; and what these different societies feared, and how that fear was represented. As demons and monsters are reflections of particular culturally specific fears and norms, studying them allows for examination of societies that constructed them. Examination of how fear of threats such as disease, illness, and death were constructed alongside fears of foreign and of women. Critical examination of wide range of primary source texts, addressing core question of how different societies construct unique fears—and how those fears shape those societies in turn. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**CM101A. Art and Architecture of Ancient Egypt, Predynastic Period to New Kingdom. (4)** (Same as Art History M110A.) Lecture, three hours. Study of architecture, sculpture, painting, and minor arts during Predynastic period and Old Kingdom. May be repeated for credit with consent of instructor. Concurrently scheduled with course C267A. P/NP or letter grading.

**CM101B. Art and Architecture of Ancient Egypt, New Kingdom to Greco-Roman Period. (4)** (Same as Art History M110B.) Lecture, three hours. Study of architecture, sculpture, painting, and minor arts from New Kingdom to Greco-Roman period. Concurrently scheduled with course C267B. P/NP or letter grading.

**M101C. Ancient Egyptian Temple and City of Thebes. (4)** (Same as Art History M110C.) Lecture, four hours; fieldwork, one hour. Focus on ancient temples of city of Thebes (modern day Luxor). Theban temples are some of best-preserved cult buildings in all of Egypt, and their study illuminates traditions of artistic representation, architectural development, and social and political transformations echoed throughout all of ancient Egypt. Investigation of ritual linking of temples on Nile's eastern and western banks through festival processions, chronological changes in function and form of Theban temples through time, and statuary program of individual temples. P/NP or letter grading.

**M103A-M103B. History of Ancient Egypt. (4-4)** (Same as History M103A-M103B.) Lecture, three hours; discussion, one hour (when scheduled). Course M103A is not requisite to M103B. Designed for juniors/seniors. Political and cultural institutions of ancient Egypt and ideas on which they were based. P/NP or letter grading. **M103A.** Chronological discussion of Prehistory, Old and Middle Kingdom. **M103B.** New Kingdom and Late period until 332 BC.

**M104A. History of Ancient Mesopotamia and Syria. (4)** (Same as History M104A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Political and cultural development of Fertile Crescent, including Palestine, from Late Uruk to neo-Babylonian period. P/NP or letter grading.

**M104B. Sumerians. (4)** (Same as History M104B.) Lecture, three hours. Overview of Sumer and related cultures of Greater Mesopotamia in 4th and 3rd millennia BCE, with focus on rich cultural history of region and integration of archaeological, art historical, and written records. P/NP or letter grading.

**M104C. Babylonians. (4)** (Same as History M104C.) Lecture, three hours. Overview of Babylonia and cultural history of region from late 3rd millennium BCE to invasion of Cyrus in 539 BCE, with focus on history and archaeology of region, urban structure, literature, and legal practices. P/NP or letter grading.

**M104D. Assyrians. (4)** (Same as History M104D.) Lecture, three hours. Overview of Assyrian cultural history from its origins to end of Neo-Assyrian period (circa 612 BCE), with focus on rise, mechanics, and decline of Neo-Assyrian Empire, which at its peak ruled ancient Near East from Zagros to Egypt. P/NP or letter grading.

**M105. Archaeology of Egypt and Sudan. (4)** (Same as Anthropology M115.) Lecture, two hours; laboratory, three hours. Ancient Egypt is well known for iconic archaeological sites such as Giza Pyramids and Tomb of Tutankhamun. From these and thousands of less well-known sites, enormous variety of archaeological information can be gained. Through discussion of particular archaeological themes, regions, or sites, examination of methods of prehistoric and historic archaeology and how archaeological information contributes to understanding of social, political, and religious history. Background provided for development of group research projects—finding resources, data gathering, analysis, interpretation, presentation, and training on how to embark on research in this field. Computer laboratory component included in which student research is performed and presented in time map. P/NP or letter grading.

**M110A-M110B-M110C. Iranian Civilization. (4-4-4)** (Same as History M110A-M110B-M110C and Iranian M110A-M110B-M110C.) Lecture, three hours; discussion, one hour (when scheduled). P/NP or letter grading. **M110A.** History of Achaemenid Empire. From end of Elam and rise of Medes to Macedonian conquest of Achaemenid Persia. Emphasis on political history, state structure, empire's religions, and Greco-Persian interactions. Further accents on Cyrus' empire and Darius' world order, age of Persian Wars, Cyrus the Younger, Achaemenid Egypt, Alexander's conquest. **M110B.** History of Arsacid (Parthian) Empire. From Hellenistic rule in Persia to Sasanian conquest. Emphasis on political history, state structure, empire's

religions, interactions with Hellenistic and Roman worlds. Further accent on Parthian conquest of Iran and Mesopotamia, Seleucid demise and Arsacid hegemony in East, Arsacid-Roman wars, rise of Sasanians. **M110C.** History of Early Sasanian Empire—From Ardashir I to Rise of Peroz (circa 224–459 CE) From fall of Arsacids to Muslim conquest of Iran. Emphasis on political and economic history, evolution of state structure, empire's religious landscape (Mazdism, Manicheism, Exilarchate, Church of Persia, Mazdakism), Persian and Roman/Byzantine interactions, Persia and East. Further accent on Persian-Roman conflicts and cooperation, Persia and Huns.

**120A-120B-120C. Elementary Ancient Egyptian. (5–5–5)** Lecture, five hours. Course 120A is requisite to 120B, which is requisite to 120C. P/NP or letter grading. **120A.** Introduction to hieroglyphic script and phonology and morphology of Middle Egyptian. Basic rules of Middle Egyptian syntax, with focus on nominal, adjectival, and adverbial sentences. **120B.** Verbal system and syntax of verbal sentences of Middle Egyptian. **120C.** Reading of authentic Egyptian texts to deepen knowledge of Egyptian grammar and to acquire familiarity with aims and methods of philology, study of ancient texts.

**121A-121B-121C. Intermediate Ancient Egyptian Readings. (5–5–5)** Lecture, three hours. Requisite: course 120C. Course 121A is requisite to 121B, which is requisite to 121C. Thematic readings in ancient Egyptian historical, religious, and literary texts. May be repeated for credit. P/NP or letter grading.

**122. Elementary Ancient Egyptian: Intensive. (12)** Lecture, 10 hours; discussion, 10 hours. Not open to students who have learned, from whatever source, enough Egyptian to qualify for more advanced courses. Intensive course equivalent to courses 120A, 120B, and 120C. Introduction to hieroglyphic script and phonology and morphology of Middle Egyptian, with emphasis on verbal systems, pronunciation, reading, and grammar. Offered in summer only. P/NP or letter grading.

**C123A-C123B. Coptic. (5–5)** Lecture, three hours. Introduction to Coptic, final phase of Egyptian language, which is attested in writing from circa 300 to 1400 CE. Concurrently scheduled with courses C223A-C223B. P/NP or letter grading. **C123A.** Devoted to learning Coptic alphabet, grammar, and vocabulary (Sahidic dialect), with particular emphasis on historical linguistics. **C123B.** Requisite: course C123A. Introduction to variety of Coptic textual genres, from hagiographies to homilies, magical spells, private letters, legal contracts, and Gnostic Gospels found in Nag Hammadi. Readings in texts in dialects other than Sahidic (Bohairic, Fayumic, Akhmimic).

**124. Middle Egyptian Technical Literature. (4)** Lecture, three hours. Requisite: course 121C. Reading of Middle Egyptian technical literature in hieroglyphic transcription. Medical, veterinary, mathematical, and astronomical texts included. P/NP or letter grading.

**125A. Digital Cultural Mapping Core Course A: Place, Time, and Digital World. (4)** Lecture, three hours; discussion, one hour. Introduction to how emerging digital mapping technologies like geographic information systems (GIS), virtual globes, and three-dimensional modeling are being utilized as new means of inquiry in the humanities and social sciences. Provides students with critical apparatus needed to effectively, responsibly, and heuristically use technology in digital cultural mapping projects. Analysis of different forms of visual presentation, with focus on data representation through mapping, reasoning, and argumentation to learn to critically assess map-based presentations. Tracing of history of mapping and spatial representation of place to learn how mapping has always been connected with societal structures, politics, economics, and culture because maps do not merely represent reality, but also produce reality by structuring world and organizing knowledge about it. Part of Digital Cultural Mapping Project supported by W.M. Keck Foundation. P/NP or letter grading.

**M125B. Digital Cultural Mapping Core Course B: Google Earth, Geographic Information Systems, Hypercities, and Timelines. (4)** (Same as Architecture and Urban Design M125B.) Laboratory, three hours; discussion, one hour. Enforced prerequisite: course 125A. Hands-on laboratory-based investigation of emerging digital mapping technologies, including instruction in Web-based mapping applications, virtual globes, and geographic information systems (GIS). Critique and creation of maps of cultural phenomena, applying skills students learned in course 125A to real-world data sets in humanities and social sciences. By mastering emerging technologies in field of digital cultural mapping, students take part in evaluation and production of sophisticated visual representations of complex data, becoming active participants in development of this new field. How to use suite of GIS and neogeography tools. Fostering of creative approaches to and engagement with mapping technologies: What new questions can be asked and answered using these technologies? How does one reason, argue, and solve real-world problems through digital cultural mapping? Design, development, and implementation of student mapping-based research projects. Part of Digital Cultural Mapping Project supported by W.M. Keck Foundation. P/NP or letter grading.

**M125C. Digital Cultural Mapping Core Course C: Summer Research. (4)** (Same as Architecture and Urban Design M125C.) Laboratory, three hours; fieldwork, one hour. Enforced prerequisite: course M125B or Architecture and Urban Design M125B. Participation in collaborative geographic information systems (GIS) research project in humanities or social sciences using skills learned in courses 125A and M125B. Gathering and input of datasets from real-world sources, creating visual representations of data through production of digital maps, and performing analysis of larger dataset to answer specific research questions. Final oral presentation required that details student work and provides critical analysis of source material and technological/methodological issues inherent to type of GIS used for investigation. Part of Digital Cultural Mapping Project supported by W.M. Keck Foundation. Offered in summer only. P/NP or letter grading.

**M130. Ancient Egyptian Religion. (5)** (Same as Religion M132.) Lecture, three hours; discussion, one hour. Introduction to religious beliefs, practices, and sentiments of ancient Egypt to study Egyptian religion as coherent system of thought and sphere of action that once served as meaningful and relevant framework for understanding physical reality and human life for inhabitants of Nile Valley. General principles as well as developments through time (circa 3000 BC to 300 CE). Topics include mythology, temple and cult, magic, and personal piety. P/NP or letter grading.

**M135. Religion in Ancient Israel. (4)** (Same as Religion M135.) Lecture, three hours. Introductory survey of various ancient Israelite religious beliefs and practices, their origin, and development, with special attention to diversity of religious practice in ancient Israel and Canaan during 1st millennium BCE. P/NP or letter grading.

**140A. Elementary Sumerian. (4)** Lecture, three hours. Introduction to Sumerian, oldest cuneiform language, with examples attested in Mesopotamia from 3rd millennium BCE to 1st century CE. Elementary grammar, syntax, and overview of cuneiform as used by Sumerian. Focus on structure of nominal and verbal chain, through reading of basic royal inscriptions and other texts. P/NP or letter grading.

**140B-140C. Elementary Sumerian. (4–4)** Lecture, three hours. Requisites: Semitics 140A, 140B. Elementary grammar and reading of royal inscriptions, letters, and administrative texts from Ur III period. P/NP or letter grading.

**M141. Elementary Akkadian. (4)** (Same as Semitic M140A.) Lecture, three hours. Elementary grammar and reading of texts in standard Babylonian. P/NP or letter grading.

**150A. Heroes, Gods, and Monsters: Literature and Epic in Mesopotamia. (4)** Lecture, three hours. Survey of literary texts and traditions the ancient Near East, specifically Mesopotamia, from Old Akkadian (circa 2300 BCE) to Neo-Babylonian (circa 600 BCE) period. Texts read in English translation include literary

texts, royal inscriptions, incantations, royal and divine hymns, with focus on literary epics, particularly first millennium BCE Epic of Gilgamesh. Discussion of texts, their narratives, and their divine and human actors. Discussion of sociohistorical context for cuneiform (Sumerian and Akkadian) texts and royal, religious, and cultural roles of different texts. P/NP or letter grading.

**150B. Survey of Ancient Near Eastern Literatures in English: Egypt. (4)** Lecture, three hours. Preparation: familiarity with Egyptian history. Enforced requisites: courses M103A, M103B. Survey of 3,000 years of ancient Egyptian literature. Reading of Egyptian texts in translation to study Egypt's intellectual history and trace transformations in its construction of cultural identity. Topics include invention of writing, autobiography, wisdom texts, narratives, royal inscriptions, and hymns. Discussion of text analysis such as narratology. May be taken independently for credit. P/NP or letter grading.

**160. Origins of Agriculture. (4)** Lecture, three hours. Requisite: Anthropology 8. Overview of prehistory of ancient Near East, with focus on human origins, origins of agriculture, and first cities. P/NP or letter grading.

**161. Archaeology of Prehistoric Mesopotamia. (4)** Lecture, three hours. Survey of prehistoric archaeological periods in Mesopotamia. P/NP or letter grading.

**162. Archaeology, Identity, and Bible. (5)** Lecture, three hours; discussion, one hour. Introduction of archaeological record of southern Levant (ancient Israel) from Bronze Age through Achaemenid Period (circa 2500–332 BC) in combination with current understandings of genre, authorship, and historical value of Hebrew Bible. Ancient Israelite identities are traced through combination of archaeological and textual sources. Social, religious, and political traditions of ancient Israel and Judah are interpreted in context of both earlier Bronze Age traditions and Israel's Iron Age neighbors. Archaeological and textual data for identities, such as Amorites, Canaanites, Phoenicians, Egyptians, Assyrians, and Babylonians, form basis for evaluating construction and maintenance of various biblical identities. Introduction to theoretical and methodological issues involving historical archaeology of ancient Israel and Levant, and possibilities for investigating negotiation of identity in archaeological record. P/NP or letter grading.

**CM163. Archaeology of Iran. (4)** (Same as Iranian CM163.) Lecture, three hours. Designed to introduce students to Iranian archaeology from prehistoric through Achaemenid times. Concurrently scheduled with course CM259. P/NP or letter grading.

**164. Archaeology of Levant. (4)** Lecture, three hours. Survey of archaeology of Levant from late fifth millennium through arrival of Alexander the Great (circa 4500–332 BC). Examination of social, economic, political, and cultural developments through archaeological finds from geographic region bounded by Anatolia and Mesopotamia on north, Egypt to south, and Arabian Peninsula to east. Archaeological methods, theory, and practice are addressed; and geographic, environmental, climatological, and textual data are employed to establish broader context for Levantine traditions. P/NP or letter grading.

**C165. Egyptian Archaeology. (4)** Seminar, three hours. Opportunity to research aspects of topics in ancient Egyptian archaeology. Topics vary each year. May be repeated for credit. Concurrently scheduled with course C266. P/NP or letter grading.

**M166. Art and Death in Ancient Egypt. (4)** (Formerly numbered 166.) (Same as Art History M110D.) Lecture, four hours. Ways of death, burial, funerary ritual, and afterlife beliefs in ancient Egypt, as well as in ancient Near East and Nubia, with focus on ancient visual materials—both objects and architecture—from Predynastic to Roman periods. P/NP or letter grading.

**M167. Magic in Ancient World. (4)** (Same as Classics M167.) Lecture, three hours; discussion, one hour (when scheduled). Requisite: Classics 10 or 20. Exploration of art of influencing natural course of events by occult means as practiced in ancient world at large. Coverage of beliefs in supernatural forces, rites aimed at controlling these forces effectively, and character

and social roles of ritual experts in various cultures of ancient world. Source material includes types of magical spells, literary texts about magic and magicians, and artifacts such as amulets and ritual implements. P/NP or letter grading.

**M168A. Introductory Hittite. (4)** (Formerly numbered M168.) (Same as Indo-European Studies M168A.) Lecture, three hours. Recommended preparation: knowledge of language with case system. Introduction to Hittite grammar by series of graded lessons covering morphology and syntax, followed by readings of selected texts from variety of genres. P/NP or letter grading.

**M168B. Introductory Hittite. (4)** (Same as Indo-European Studies M168B.) Lecture, three hours. Recommended prerequisite: course M168A. Readings of selected Hittite texts from variety of genres and historical periods. Individual topics in synchronic and historical grammar of Hittite and in history and culture of Hittites are treated in detail. P/NP or letter grading.

**CM169. Introduction to Archaeological Sciences. (4)** (Same as Anthropology CM110Q.) Lecture, three hours. Basic understanding of newly introduced methods and techniques throughout field of archaeology to implement them and to appreciate and evaluate results of their use by others who have embedded them in their scholarly publications or theoretical models. Systematic instruction in digital data management and mining, scientific analysis of materials (including geological and biochemical techniques), and visual presentation of data and research results (ranging from simple graphs to virtual reality). Concurrently scheduled with course CM269. P/NP or letter grading.

**M170. Bible and Its Interpreters. (4)** (Same as Religion M172.) Lecture, three hours. Knowledge of original languages not required. Bible (Old and New Testaments) as book. Canon, text, and versions. Linguistic, literary, historical, and religious approaches to Bible study. Survey of history of interpretation from antiquity to present. P/NP or letter grading.

**M172. Elementary Luwian. (4)** (Same as Indo-European Studies M172.) Lecture, three hours. Recommended preparation: knowledge of language with case system. Introduction to Luwian grammar through lectures covering morphology and syntax, and readings of selected hieroglyphic and cuneiform texts. P/NP or letter grading.

**175. Conceptions of Race in Ancient Egypt. (4)** Lecture, three hours; discussions, one hour. Exploration of how racial hierarchies are created and maintained within context of ancient Egyptian culture. Race of ancient Egyptians is still at stake and tied to larger issues of racial and ethnic inequalities, prejudices, and oppression. Examination of modern issues invites comparison with conception of race in ancient world, which was not necessarily equivalent to our own. By consulting diverse group perspectives, including those of early scholars, contemporary anthropologists, Afrocentrist scholars and artists, Hebrew Bible, ancient Egyptian evidence, and ancient Nubian evidence, conception of race is revealed to be complex, fluid, and contradictory. These conceptions were and are used to construct variety of equally contradictory hierarchies, often based on same evidence. P/NP or letter grading.

**C177. Variable Topics in Ancient Near East. (4)** Lecture, three hours; discussion, one hour. Variable topics; consult Schedule of Classes for topics to be offered in specific term. Concurrently scheduled with course C277. P/NP or letter grading.

**M179. Cultural Heritage and Identity Representation: Creating Fowler and Virtual Exhibit. (4)** (Same as Art History M179.) Lecture, three hours; discussion, one hour. Exploration of what it takes to run museum and create exhibit. Introduction to different types of museum work, ranging from collecting and curation, to research, conservation, presentation, visitor experience, and management. Students jointly create exhibit based on Fowler Museum collection. Students research and discuss context and different stakeholders that relate to material under consideration. Consideration of narrative exhibit and how objects and their arrangement convey deliberate or accidental messages. Consideration of audiences as well as original context

of each object. Focus on people behind objects, technologies, or material characteristics. P/NP or letter grading.

**M185D. Religions of Ancient Near East. (4)** (Same as History M185D and Religion M185D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Main polytheistic systems of ancient Near East, with emphasis on Mesopotamia and Syria and with reference to religion of ancient Israel: varying concepts of divinity, hierarchies of gods, prayer and cult, magics, wisdom, and moral conduct. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Ancient Near East. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Ancient Near East. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M201. Archaeological Research Design. (4)** (Same as Anthropology M201C and Archaeology M201C.) Seminar, three hours. Prerequisites: Archaeology M201A, M201B. How to design archaeological projects in preparation for MA thesis or PhD phase. Students do exploratory research to select subject, then write research design that could form basis for extensive paper, grant application, or oral examination. Students work closely with faculty members and report weekly on their progress. Preparation of at least two oral progress-report presentations, one on theoretical framework and one on practical aspects of project. Final written research design that incorporates theoretical and practical aspects of research and formulates bridging arguments required. S/U or letter grading.

**M208. Topics in Ancient Iranian History. (4)** (Same as History M210 and Iranian M210.) Seminar, three hours. Varying topics on Elamite, Achaemenid, Arsacid, and Sasanian history. May be repeated for credit. S/U or letter grading.

**210. Late Egyptian. (4)** Lecture, three hours. Prerequisites: courses 121A, 121B, 121C. Late Egyptian grammar and reading of both hieroglyphic and hieratic texts. May be repeated for credit. S/U or letter grading.

**211A-211B. Egyptian Texts of Greco-Roman Period. (4-4)** Lecture, three hours. Introduction to grammar and orthography of hieroglyphic texts from Greco-Roman temples. Text readings and translation of various textual types. Letter grading.

**215. Readings in Middle Kingdom Literature. (4)** Seminar, three hours. Enforced prerequisites: courses 120A, 120B, 120C. Survey of Middle Kingdom literature through close readings of texts in original language and evaluation of current scholarship on these texts. Students hone their knowledge of Middle Egypt-

tian grammar and become familiar with philological methods in study of Egyptian literature. S/U or letter grading.

**220. Seminar: Ancient Egypt. (4)** Seminar, three hours. May be repeated for credit. S/U or letter grading.

**221A-221B. Demotic. (4-4)** Lecture, three hours. Prerequisite: course 121C. Course 221A is prerequisite to 221B. Introduction to Demotic grammar and orthography. Reading of texts from various genres. May be repeated for credit with topic change. S/U or letter grading.

**C223A-C223B. Coptic. (5-5)** Lecture, three hours. Introduction to Coptic, final phase of Egyptian language, which is attested in writing from circa 300 to 1400 CE. Concurrently scheduled with courses C123A-C123B. S/U or letter grading. **C223A.** Devoted to learning Coptic alphabet, grammar, and vocabulary (Sahidic dialect), with particular emphasis on historical linguistics. **C223B.** Prerequisite: course C223A. Introduction to variety of Coptic textual genres, from hagiographies to homilies, magical spells, private letters, legal contracts, and Gnostic Gospels found in Nag Hammadi. Readings in texts in dialects other than Sahidic (Bohairic, Fayumic, Akhmimic).

**230. Seminar: Ancient Syria/Palestine. (4)** Seminar, three hours. Examination of selected topics on political, social, and intellectual history of ancient Israel. Exploration of how historical, social, and political contexts shaped and influenced interpretation and use of biblical texts. May be repeated for credit. S/U or letter grading.

**240A-240B-240C. Seminars: Sumerian Language and Literature. (4-4-4)** Seminar, two hours. Readings of texts from various Sumerian periods and literary genres; selected problems in linguistic or stylistic analysis and literary history. S/U or letter grading.

**CM259. Archaeology of Iran. (4)** (Same as Iranian CM259.) Lecture, three hours. Designed to introduce students to Iranian archaeology from prehistoric through Achaemenid times. Concurrently scheduled with course CM163. S/U or letter grading.

**260. Seminar: Ancient Near Eastern Archaeology. (2 to 4)** Seminar, two hours. May be repeated for credit. S/U or letter grading.

**261. Practical Field Archaeology. (2 to 8)** Fieldwork, two hours. Participation in archaeological excavations or other archaeological research in Near East under staff supervision. May be repeated for credit. S/U or letter grading.

**262. Seminar: Object Archaeology. (4)** Seminar, two hours; laboratory, one hour. Selected topics in analysis and interpretation of Near Eastern archaeological finds in museum collections. Students work with objects in Heeramanek Collection of Los Angeles County Museum of Art. S/U or letter grading.

**263. Seminar: Egyptian Monuments. (4)** Seminar, two hours. Selected monuments and sites in Egypt, including Delta, Nile Valley, desert sites, wadis, oases, and border regions. Architecture and decoration of temples and tombs, statuary and monuments, settlement and use history, text translation of appropriate documents, including stelae, monumental inscriptions, or pertinent socioeconomic texts. May be repeated. S/U or letter grading.

**264. Egyptian Museum Collections. (4)** Seminar, two hours; research group meeting, one hour. Ancient Egyptian museum collections around world, data sets, provenance and dating studies, collection history and agenda, museology, and exhibition history. May be repeated for credit with consent of instructor. S/U or letter grading.

**M265. Depositional History and Stratigraphic Analysis. (4)** (Same as Archaeology M265.) Lecture, two hours. Theoretical understanding of depositional processes ("laws") which lead to site formation and of stratigraphic procedures to be used in recovery of embedded cultural materials. Study of issues covered in literature, with specific test cases from actual excavations and site reports. Coverage of the theoretical implications of such disciplines as surveying and pedology with help of specialists. S/U or letter grading.

**C266. Egyptian Archaeology. (4)** Seminar, three hours. Opportunity to research aspects of topics in ancient Egyptian archaeology. Topics vary each year. May be repeated for credit. Concurrently scheduled with course C165. S/U or letter grading.

**C267A. Art and Architecture of Ancient Egypt, Predynastic Period to New Kingdom. (4)** Lecture, three hours. Study of architecture, sculpture, painting, and minor arts during Predynastic period and Old Kingdom. May be repeated for credit with consent of instructor. Concurrently scheduled with course CM101A. S/U or letter grading.

**C267B. Art and Architecture of Ancient Egypt, New Kingdom to Greco-Roman Period. (4)** Lecture, three hours. Study of architecture, sculpture, painting, and minor arts from New Kingdom to Greco-Roman period. Concurrently scheduled with course CM101B. S/U or letter grading.

**CM269. Introduction to Archaeological Sciences. (4)** (Same as Anthropology CM210Q.) Lecture, three hours. Basic understanding of newly introduced methods and techniques throughout field of archaeology to implement them and to appreciate and evaluate results of their use by others who have embedded them in their scholarly publications or theoretical models. Systematic instruction in digital data management and mining, scientific analysis of materials (including geological and biochemical techniques), and visual presentation of data and research results (ranging from simple graphs to virtual reality). Concurrently scheduled with course CM169. S/U or letter grading.

**270. Old Egyptian. (4)** Seminar, three hours. Enforced requisites: courses 120A, 120B, 120C, or one year of introductory Middle Egyptian. Advanced reading class in Old Egyptian, earliest of five Egyptian language phases, to prepare students for independent research on Egyptian texts dating to Old Kingdom (circa 2800 to 2100 BCE). Through close reading of texts in original language and original format, students learn grammar, orthography, and phraseology of Old Kingdom texts as well as tools and methods of epigraphy. Focus on tomb biographies, royal edicts, and Pyramid Texts. Letter grading.

**C277. Variable Topics in Ancient Near East. (4)** Lecture, three hours; discussion, one hour. Variable topics; consult Schedule of Classes for topics to be offered in specific term. Concurrently scheduled with course C177. S/U or letter grading.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Arabic

### Lower-Division Courses

**1A-1B-1C. Elementary Standard Arabic. (5-5-5)** Lecture, six hours. Course 1A is enforced requisite to 1B, which is enforced requisite to 1C. Not open to students with prior knowledge of Arabic. Introduction to formal Arabic (modern standard Arabic), including listening, speaking, reading, and writing. P/NP or letter grading.

**8. Elementary Standard Arabic: Intensive. (12)** Lecture, 10 hours; discussion, 10 hours. Not open to students who have learned, from whatever source, enough Arabic to qualify for more advanced courses. Intensive course equivalent to courses 1A, 1B, and 1C. Introduction to fundamentals of standard Arabic, including pronunciation, grammar, and Arabic script, with emphasis on all four basic language skills—speaking, listening comprehension, reading, and writing. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**102A-102B-102C. Intermediate Standard Arabic. (4-4-4)** Lecture, four hours. Enforced requisite: course 1C or 8. Course 102A is requisite to 102B, which is requisite to 102C. Not open to students who have learned, from whatever source, enough Arabic to qualify for more advanced courses. Intermediate formal Arabic, including listening, speaking, reading, and writing. P/NP or letter grading.

**103A. Advanced Arabic. (4)** Lecture, four hours. Enforced requisites: courses 102A, 102B, 102C. Not open to students who have learned, from whatever source, enough Arabic to qualify for more advanced courses. Advanced formal Arabic, including grammar, composition, and readings from classical and modern texts. P/NP or letter grading.

**103B. Advanced Arabic. (4)** Lecture, four hours. Enforced requisites: courses 102A, 102B, 102C. Not open to students who have learned, from whatever source, enough Arabic to qualify for more advanced courses. Advanced formal Arabic, including grammar, composition, and readings from classical and modern texts. P/NP or letter grading.

**103C. Advanced Arabic. (4)** Lecture, two and one half hours. Enforced requisites: courses 102A, 102B, 102C. Not open to students who have learned, from whatever source, enough Arabic to qualify for more advanced courses. Advanced formal Arabic, including grammar, composition, and readings from classical and modern texts. P/NP or letter grading.

**105. Introduction to Qur'anic and Islamic Arabic. (4)** Lecture, three hours. Requisites: courses 1A, 1B, 1C. Introduction to Arabic used in Qur'an, Hadith (traditions of Prophet Muhammad), and early Islamic literature (biographies of Prophet and historical narratives). P/NP or letter grading.

**CM106. Qur'an. (4)** (Formerly numbered M106.) (Same as Religion M108.) Lecture, three hours. Introduction to Qur'an, its early history, and form and function as scripture in Muslim history, civilization, and culture. Focus also on Qur'anic interpretation, its relationship to Islamic law, and Qur'an in contemporary discourses such as human rights, feminism, and contemporary reform movements. Primary sources include excerpts from Qur'an, Qur'anic interpretation, and selected writings of Muslim thinkers and reformists. Strong focus on analytical and writing skills through in-class assignments and discussion. Concurrently scheduled with course C206. Letter grading.

**M107. Islam in West. (5)** (Same as Islamic Studies CM107 and Religion M107.) Lecture, three hours; discussion, one hour. Acquisition of understanding of

basic doctrines and practices of Islam. Survey of history of Islam in West, with focus on U.S. and France. Analysis of issues relevant to growth and development of selected Muslim communities in West. Exposure to diverse expressions of Islam through independent research on Muslim communities and institutions in U.S. Development of strong analytical writing and speaking skills. P/NP or letter grading.

**108. Summer Intensive Intermediate Arabic. (12)** Lecture, and discussion, 20 hours. Enforced requisite: course 1C. Not open to students who have learned, from whatever source, enough Arabic to qualify for more advanced courses. Intensive course equivalent to courses 102A, 102B, and 102C. Intermediate formal Arabic, including listening, speaking, reading, and writing. Offered in summer only. P/NP or letter grading.

**M110. One Thousand and One Nights/Alf Layla Wa-Layla. (4)** (Same as Comparative Literature M110.) Lecture, three hours. Knowledge of Arabic not required. Since its appearance in Europe in 1704, *One Thousand and One Nights* is most well-known work of Arabic literature in West. Examination of cycle of tales more commonly known as *Arabian Nights*, including history of its translation, contemporary oral performances of tales in Arabic-speaking world, literary emergence of vernacular language in relation to classical Arabic, and Western appropriations of tales in music, film, and novels (Ravel, Rimsky-Korsakov, Barth, Poe, and Walt Disney). P/NP or letter grading.

**111A-111B-111C. Elementary Spoken Egyptian Arabic. (4-4-4)** Lecture, three hours. Enforced requisite: course 1C or 8. Course 111A is enforced requisite to 111B, which is enforced requisite to 111C. Not suitable for heritage speakers. Introduction to spoken Arabic dialect of Egypt. Training in listening, speaking, and reading. P/NP or letter grading.

**111S. Summer Intensive Elementary Egyptian Arabic. (4)** Lecture, three hours. Knowledge of Arabic not required; not suitable for heritage speakers. Introduction to spoken Arabic dialect of Egypt. Training in listening, speaking, and reading. P/NP or letter grading.

**112A-112B-112C. Advanced Spoken Egyptian Arabic. (4-4-4)** Lecture, three hours. Study of Egyptian colloquial Arabic for heritage speakers or students who have completed courses 1A, 1B, 1C. P/NP or letter grading.

**115. Studies in Arabic Dialectology. (4)** Lecture, three hours. Introduction to one spoken dialect of Arabic, with emphasis on speaking and listening comprehension. Dialects vary from year to year based on student interest and instructor availability and may include Iraqi, Levantine, North African, or Gulf Arabic. May be repeated for credit. P/NP or letter grading.

**116A-116B-116C. Elementary Iraqi Arabic. (5-5-5)** Lecture, five hours. Course 116A is requisite to 116B, which is requisite to 116C. Introduction to dialect of Arabic spoken in contemporary Iraq, with emphasis on conversational proficiency. Recognition and production of sounds of Iraqi Arabic and basic vocabulary, grammar, idiomatic expressions, and relevant cultural background through dialogues and other conversational exercises. P/NP or letter grading.

**120. Islamic Texts. (4)** Lecture, four hours. Requisite: course 103C. Readings from Qur'an, Tafsir, Hadith, Fiqh. May be repeated for credit. Letter grading.

**M123. Oral Literature and Performance of Arab World. (4)** (Same as Comparative Literature M123.) Lecture, three hours. Knowledge of Arabic not required. Introduction to study of living oral traditions of troubadours, storytellers, oral poets, and performers in Arabic-speaking Middle East. P/NP or letter grading.

**130. Classical Arabic Texts. (4)** Lecture, four hours. Requisite: course 103C. Readings from premodern literary texts, with grammatical and syntactical analysis. May be repeated for credit. Letter grading.

**132. Philosophical and Kalam Texts. (4)** Lecture, three hours. Requisite: course 120. Readings in premodern philosophy and theology. May be repeated for credit. P/NP or letter grading.

**140. Readings in Modern Standard Arabic. (4)** Lecture, four hours. Requisite: course 103A, or consent of instructor. Development of reading, speaking, and



writing abilities in modern standard Arabic, as well as cultural knowledge, through film screenings, discussions, written compositions, verbal presentations, and reading authentic literary texts from across Arabic-speaking world. Prepares students for more advanced literary Arabic courses. P/NP or letter grading.

**C141. Modern Arabic Literature.** (4) Lecture, three hours. Requisite: course 102C. Conducted in English and Arabic, with all required readings in original Arabic only. Readings in modern Arabic literature, variably organized across or around particular trends, genres, topics, canonical authors, regional, or national literatures, mixing thematic and formal analyses of literary and critical texts and making use of film, video-clip, and song in approaching literary culture. May be repeated for credit. Concurrently scheduled with course C241. Letter grading.

**142. Arabic Media.** (4) Lecture, four hours. Requisite: course 103A. Development of facility with language of Arabic press and broadcasting. Activities include monitoring current materials via Internet; transcribing, translating, and summarizing; writing original reports in Arabic; and oral presentations and discussions. May be repeated for credit. P/NP or letter grading.

**M148. Contemporary Arab Film and Song.** (4) (Same as Comparative Literature M148.) Seminar, three hours. Exploration of conjunctions between contemporary Arab film and song and between popular cultures and cultures of commitment (litizam), with possible focus on specific genres such as realist/neorealist Arab film; feminist Arab film or popular Arab film and song; topics such as nation, gender, and representation or democracy and human rights or censorship, reception, and resistance. Possible examination of various national cinemas such as Tunisian, Egyptian, Moroccan, Algerian, and Palestinian. Various musical genres such as Rai, Mizoued, and Hip-hop also examined in relation to emergence not only of national cinemas, national music industries, and iconic singers but also of video clip, satellite TV, star academy, and reality shows—all products of transnational and pan-Arab mass media. P/NP or letter grading.

**150. Classical Arabic Literature in English.** (4) Lecture, three hours. Readings in English; knowledge of Arabic not required. Survey of premodern Arabic cultural production in its political, religious, and social contexts. Coverage of pre-Islamic Arabia, rise of Islam, and major themes of Southwest Asian history, along with significant figures and moments in literature and culture of premodern period. Consideration of selected modern responses to Arabic tradition. P/NP or letter grading.

**M151. Modern Arabic Literature in English.** (4) (Same as Comparative Literature M167.) Lecture, three hours. Designed for upper-division literature majors. Topics may include constructions of otherness in modern Arab culture; East-West debate; memory, trauma, and mourning; violence, narrative, and ethics; globalization, oil, and cultural insurgency; Arab culture in transnational context or questions of reception, exoticism, translation, and marketing. Genres may include prison narratives; novel of terror; memoirs by women and/or by refugees and exiles; 19th- and 20th-century travel narratives; Arabic romantic poetry; literature of pre-1948; rise of Arab novel. Areas may range from generic look at Arab world to narrow focus on Maghreb or one country such as Algeria, Palestine, Iraq, Lebanon, or Egypt. May also be organized around Arab literatures written in one specific language, namely English, Arabic, or French. Letter grading.

**M155. Al-Andalus: Literature of Islamic Spain.** (4) (Same as Comparative Literature M119.) Lecture, three hours. Study of literature of Islamic Spain to learn about interaction of Arabic and Western and Arabic and Jewish cultures and to recognize Islamic culture as vital force in European life and letters. P/NP or letter grading.

**M171. Culture Area of Maghrib (North Africa).** (4) (Same as Anthropology M166Q and History M108C.) Lecture, three hours. Designed for juniors/seniors. Introduction to North Africa, especially Morocco, Algeria, Tunisia, and Libya, also known as Maghrib or Tamazgha. Topics include changing notions of personal, tribal, ethnic, linguistic and religious identities;

colonialism; gender and legal rights, changing representations of Islam, and religions in region's public spaces. P/NP or letter grading.

**177. Variable Topics in Arabic.** (4) Lecture, three hours. Variable topics; consult schedule of classes for topics to be offered in specific term. May be repeated for credit. P/NP or letter grading.

**180. Linguistic Analysis of Arabic.** (4) Lecture, four hours. Requisite: course 102C. Linguistic description of Arabic in both its modern standard and dialect forms. Introduction to linguistic analysis of Arabic phonology, morphology, and syntax and to linguists' approaches to specific problems posed by Arabic grammar and dialectology. Letter grading.

**181. Translating Arabic.** (4) Seminar, three hours. Preparation: advanced proficiency in English and Arabic (at least three years of Arabic instruction or equivalent). Open to both native and nonnative speakers of English and Arabic. Training of students in methodology of translation from Arabic into English, with focus on producing accurate and readable English versions of Arabic texts from variety of fields. Close reading and written translation of Arabic texts, with review of linguistic and cultural difficulties that arise in course of translation. Texts may include classical Arabic literature (religion, historiography), modern writing (literature, media), and spoken Arabic (television, radio), based on student interest. Letter grading.

**188FL. Special Studies: Readings in Arabic.** (2) Seminar, two hours. Requisite: course 102C. Students must be concurrently enrolled in affiliated main course. Primary readings and additional work in Arabic to enrich and augment work assigned in main course, including reading, writing, and other exercises. May be repeated for credit. P/NP or letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Arabic.** (2 to 4) Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Arabic.** (2 to 4) Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**C206. Qur'an.** (4) Lecture, three hours. Introduction to Qur'an, its early history, and form and function as scripture in Muslim history, civilization, and culture. Focus also on Qur'anic interpretation, its relationship to Islamic law, and Qur'an in contemporary discourses such as human rights, feminism, and contemporary reform movements. Primary sources include excerpts from Qur'an, Qur'anic interpretation, and selected writings of Muslim thinkers and reformists. Strong focus on analytical and writing skills through in-class assignments and discussion. Concurrently scheduled with course CM106. Letter grading.

**220. Seminar: Islamic Texts.** (4) Seminar, three hours. Major Islamic thinkers and their works from classical period to modern times. Coverage of doctrines and hermeneutics of various schools of thought in Islam,

such as Ahl al-sunna wa'l-jama'a, Shi'a, Mu'tazila, and Sufis. May be organized around one author and his works, multiple authors and their works, or specific topic with representative readings from various schools. Exploration of secondary literature in Arabic and other languages for student research papers. May be repeated for credit. S/U or letter grading.

**M231. Texts in Judeo-Arabic.** (4) (Same as Hebrew M231.) Lecture, three hours. Requisites: course 102C, Hebrew 102C. Reading of Judeo-Arabic texts by Maimonides (medieval religion, medicine, philosophy) and more recent texts in Judeo-Arabic dialects of Iraq and Egypt, with discussion of grammar and deviations from norms of classical Arabic. S/U or letter grading.

**240A. Seminar: Arab Historians.** (4) Seminar, three hours. Introduction to very large body of literature on medieval Islamic history. Selected readings in Arabic that represent cross-section of Islamic historical writings, including Ibn Ishaq's *Sira*, Waqidi's *Maghazi*, Baladhuri's *Futuh*, Tabari's *Ta'rikh*, digests of Ya'qubi and Mas'udi, Ibn Khaldun's *Muqaddima*, and Maqrizi's topography. Historians studied either to determine their reliability as sources or their view of history and its theoretical foundations. Exploration of sources, research tools, and problems in Islamic history. May be repeated for credit. S/U or letter grading.

**240B. Seminar: Arab Geographers.** (4) Seminar, three hours. Introduction to large body of literature on medieval Islamic geographers. Selected readings in Arabic that represent cross-section of Islamic geographical writings distributed over number of disciplines and various aspects of geography, such as *Surat al-ard*, *Kitab al-Buldan*, *al-Masalik wa'l-mamalik*, topography, and travel accounts. May be repeated for credit. S/U or letter grading.

**C241. Modern Arabic Literature.** (4) Lecture, three hours. Requisite: course 102C. Conducted in English and Arabic, with all required readings in original Arabic only. Readings in modern Arabic literature, variably organized across or around particular trends, genres, topics, canonical authors, regional, or national literatures, mixing thematic and formal analyses of literary and critical texts and making use of film, video-clip, and song in approaching literary culture. May be repeated for credit. Concurrently scheduled with course C141. Letter grading.

**250. Seminar: Premodern Arabic Literature.** (4) Seminar, three hours. Readings in Arabic texts from variety of periods and genres, along with appropriate secondary literature. Topics include pre-Islamic poetry and oratory, Qur'an, Umayyad and Abbasid poetry and literary prose, Hadith and Fiqh, historiography, biography, geography, medicine, mathematics, theology, asceticism, and mysticism. May be repeated for maximum of 24 units. S/U or letter grading.

**251. Seminar: Modern Arabic Literature.** (4) Seminar, three hours; discussion, one hour. Requisite: course C141. Selected topics in modern and contemporary Arabic prose and poetry. May be repeated for credit. Letter grading.

**M255. Literatures and Cultures of Maghreb.** (4) (Same as Comparative Literature M251.) Seminar, three hours. Limited to graduate students. Examination of traditionally diverse literatures of Maghreb in their multiple and competing contexts of language and gender politics, religious and cultural formations, Pan-Arabism and postcolonial nationhood, Third-Worldism and economic development, modernity and globalization, immigration and citizenship, soccer industry and Rai music, mass media and Star Academy Maghreb, and more. Readings of literatures in English and in English translations from different Maghreb languages (particularly Arabic and French) in conjunction with theories of language and linguistic pluralism, cultural translation, deconstruction, and host of other relevant theories of gender, globalization, and postcolonial cultural studies. S/U or letter grading.

**275. Encountering Arabic Manuscripts: Introduction to Arabic Paleography and Critical Edition of Manuscripts.** (4) Lecture, three hours; discussion, one hour. Requisite: course 103C. Introduction to Arabic paleography and how to prepare editions of medieval manuscripts with critical apparatus and stemma. During past decades enormous number of previously unknown Arabic manuscripts have been discovered.

While vast range of medieval texts have been published in editions of varying quality, equally large number of manuscripts remain unpublished. UCLA has outstanding collections of Near Eastern manuscripts in Arabic, Persian, and Ottoman Turkish, primarily in fields of medicine, literature, philology, theology, law, and history. It is rich in works related to studies of theologians and scholars at different centers of learning in Iran during Safavid period noted for works of Shiite theology, Islamic sciences, and philosophy. Course opens this treasure to graduate students interested in editing and/or translating manuscripts. S/U or letter grading.

**M288. Modern Arab Thought. (4)** (Same as Comparative Literature M288.) Seminar, three hours. While much has been written and said about resurgence and spread of political Islam after collapse of ideology of secular nationalism and failure of Arab left to apprehend exigencies of postrevolutionary/postcolonial moment, little has been devoted to less sensational topic of modern Arab thought despite unmistakable proliferation of critical output produced by Arab thinkers and artists in aftermath of 1967. Course addresses and redresses this glaring imbalance by considering new cultural material—literary, critical, philosophical, artistic, and journalistic—produced before and after al-Nahda but mostly before and after 1967 and fosters insightful approaches to unlikely coexistence in Arab contemporaneity of ever-deepening and generalized crisis and of steady and consolidated development (if not effervescence) of cultural and artistic production. S/U or letter grading.

**496. Arabic Language Pedagogy Course. (2)** Seminar, three hours. Taught in English and Arabic. Discussion of multiple topics pertaining to Arabic language teaching and learning. Content designed to address Arabic language pedagogy, with emphasis on practical issues and applications of different language teaching methodologies. Activities include lectures, classroom observations, and teaching demonstrations. Participants collaborate on projects that investigate issues related to teaching different language skills, such as listening, speaking, reading, and writing. S/U grading.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Armenian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and en-

rolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101A-101B-101C. Elementary Modern Western Armenian. (5-5-5)** Lecture, five hours. Course 101A is recommended requisite to 101B, which is recommended requisite to 101C. Students with knowledge of Armenian should contact instructor to determine appropriate enrollment level. Armenian grammar, conversation, and exercises. P/NP or letter grading.

**102A-102B-102C. Intermediate Modern Western Armenian. (5-5-5)** Lecture, five hours. Recommended requisite: course 1C. Students with knowledge of Eastern or Western Armenian (from elementary or high school) should contact instructor to determine appropriate enrollment level. Reading of selected texts, composition, and conversation. Each course may be taken independently for credit. P/NP or letter grading.

**103A-103B-103C. Advanced Modern Western Armenian. (4-4-4)** Lecture, four hours. Recommended requisite: course 102C. Course 103A is recommended requisite to 103B, which is recommended requisite to 103C. Students with knowledge of Eastern or Western Armenian (from elementary or high school) should contact instructor to determine appropriate enrollment level. Designed for students with advanced speaking fluency and reading abilities in Armenian. Exploration of advanced Western Armenian in following areas of competency: fluency, literacy, accuracy, and proficiency. Use of language to engage literary themes and cultural issues of historical and contemporary significance for Armenian speakers. P/NP or letter grading.

**104A-104B-104C. Elementary Modern Eastern Armenian. (5-5-5)** Lecture, five hours. Course 104A is recommended requisite to 104B, which is recommended requisite to 104C. Students with knowledge of Western Armenian should contact instructor to determine appropriate enrollment level. Designed for students with little or no prior knowledge of Eastern Armenian, official idiom of Republic of Armenia. Introduction to basics of grammar and conversation. P/NP or letter grading.

**105A-105B-105C. Intermediate Modern Eastern Armenian. (5-5-5)** Lecture, five hours. Recommended requisite: course 4C. Students with knowledge of Eastern or Western Armenian (from elementary or high school) should contact instructor to determine appropriate enrollment level. Continuing introduction to Armenian grammar, with greater attention to readings from short stories and simple newspaper articles and film viewing on video. Emphasis on improving students' self expression in idiom, both orally and in written form. Each course may be taken independently for credit. P/NP or letter grading.

**106A-106B-106C. Armenian Society and Culture. (4-4-4)** Lecture, four hours. Recommended requisite: course 105C. Students with knowledge of Eastern or Western Armenian (from elementary or high school) should contact instructor to determine appropriate enrollment level. Designed for students with advanced speaking fluency and reading abilities in Armenian. Discussion of contemporary Armenian social and cultural issues through readings from critical essays, editorials, short stories, and poems written since World War II and film showings. Emphasis on enhancing students' self expression orally and in written form. Each course may be taken independently for credit. Letter grading.

**110. History of Armenian Language. (4)** Lecture, three hours. Requisite: course 1C or 4C. Exploration of history of Armenian language as reflected in literature created in Armenian throughout written period (5th through 20th centuries). Use of top-down approach beginning with modern state of Armenian language in its two standard versions (Western and Eastern), then retracing of historical development through formation of New Armenian (17th century), Middle Armenian (17th through 12th centuries), and earliest attested form, Grabar, literary version of ancient Armenian (11th through 5th centuries). Discus-

sion of attempts at reconstructing major features of Armenian phonology and morphology in preliterary period. P/NP or letter grading.

**120. Language in Diaspora: Armenian as a Heritage Language. (4)** Lecture, three hours. Comprehensive examination of status of Armenian as heritage language in diasporic context. Introduction to diaspora, particularly in Armenian context, and to heritage languages and heritage learners. Review of development of modern standards of Armenian (Eastern and Western) and special circumstances for each variety in order to position Armenian on sociolinguistic map of heritage languages. Exploration of issues such as linguistic features of heritage speakers, patterns and domains of language use, psychological restraints (i.e., anxiety, fear, etc.) connected with speaking heritage languages, language attitudes with ideologies, and role of language in Armenian identity construction. P/NP or letter grading.

**130. Armenian Civilization under Bagratid Dynasty, 884 to 1064. (4)** Lecture, four hours. Interdisciplinary investigation of interface between sociopolitical and economic factors in creation of works of art (literature, art, architecture, etc.) and social function these works performed in this important period of Armenian history. Letter grading.

**131. Armenian Civilization in Cilician Period, 1080 to 1375. (4)** Lecture, four hours. Interdisciplinary investigation of rise and fall of unique form of Armenian polity established outside homeland and examination of degree to which its social structure and cultural and aesthetic norms were impacted by those of West (Byzantium, Western Europe) and East (Crusader states, Seljuqs, Mamluks, Mongols). Letter grading.

**M134. Introduction to Armenian Music. (4)** (Same as Ethnomusicology M134 and Music M134.) Lecture, three hours. Some amount of formal music study and experience as vocalist or instrumentalist desirable but not essential. Introduction to history, tradition, and scope of music of Armenia. Focus on number of different genres and approaches, and interactions between music and culture, society, and history. P/NP or letter grading.

**150A. Survey of Armenian Literature in English. (4)** Lecture, three hours. Knowledge of Armenian not required. P/NP or letter grading.

**C151. Armenian Literature and Canon Formation. (4)** Lecture, four hours. Discussion of fundamental themes and genres around which Armenian literary tradition evolved and modalities by which this has been transformed in course of last two centuries as result of exposure to European thought and expressive forms. Concurrently scheduled with course C251. P/NP or letter grading.

**C152. Modern Armenian Drama as Vehicle for Social Critique. (4)** Lecture, four hours. Readings of selected plays from 1668 to 1992 from three main genres of tragedy, comedy, and serious drama and featuring works by most significant Armenian playwrights, with focus on their role as commentators on contemporary mores and as agents for social reform. Concurrently scheduled with course C252. Letter grading.

**C153. Art, Politics, and Nationalism in Modern Armenian Literature. (4)** Lecture, four hours. Examination of role of literature in modern Armenian society in service to cause or causes, as propaganda for various ideologies, as art for art's sake, etc. Exploration of contrasting aesthetics implicit in these differing interpretations. Concurrently scheduled with course C253. P/NP or letter grading.

**C155. Issues in Armenian American Literature and Culture. (4)** Lecture, four hours. Preparation: reading knowledge of modern Eastern and Western Armenian. Theoretically informed exploration of some of most salient questions related to Armenian American community as reflected in its literature and other cultural artifacts in interaction with its pluralistic American ambience. Concurrently scheduled with course C255. Letter grading.

**160A-160B. Armenian Literature of 19th and 20th Centuries. (4-4)** Lecture, three hours. Requisites: courses 102A, 102B, 102C. Reading of texts and discussion of various genres of modern Armenian literature within context of Armenian cultural renaissance. P/NP or letter grading.

**C166. Armenian Film and Culture. (5)** Lecture, six hours. Requisite: course 1C or 4C. Overview of development of Armenian cinematography from first talkie to present, with focus on work of most seminal directors from Armenian Republic, as well as various voices from worldwide diaspora. Concurrently scheduled with course C266. P/NP or letter grading.

**170. Armenian Poetry, 1880 to 1930. (4)** Lecture, three hours. Requisite: course 1C or 4C. Examination of process behind creation of range and variety of poetic expression that developed in new literary formats and genres of what became standard modern Eastern and Western Armenian language in second half of 19th century. Special attention to crafting of central practitioners' individual voice, with particular consideration to poetics and aesthetics, continuity and innovation under impact of modernism, and employment of poetic structure as medium for expression of deeper philosophical values. All texts read in original language. P/NP or letter grading.

**171. Variable Topics in Armenian Studies. (4)** Lecture, three hours. Examination of major issues in Armenian studies. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**M172. Medieval Armenian Art. (4)** (Same as Art History M118A.) Lecture, three hours. Examination of cultural and historical impact of Armenian miniature paintings. P/NP or letter grading.

**M173. Armenian Painting, 17th to 20th Century. (4)** (Same as Art History M118B.) Lecture, three hours. Overview of development of modern Armenian painting out of its matrix in 17th and 18th centuries. P/NP or letter grading.

**188. Variable Topics in Armenian. (4)** Lecture, four hours. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Armenian. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Armenian. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**230A-230B-230C. Elementary Classical Armenian. (4-4-4)** Lecture, three hours. Course 230A is requisite to 230B, which is requisite to 230C. Introduction to grammar of classical literary language (5th to mid-19th century) and guided readings in narrative prose texts. Letter grading.

**231A-231B-231C. Intermediate Classical Armenian. (4-4-4)** Lecture, three hours. Requisite: course 230C. Intensive review of grammar and reading of select prose and poetic texts. Each course may be taken independently for credit. Letter grading.

**232A-232B-232C. Advanced Classical Armenian. (4-4-4)** Lecture, three hours. Requisite: course 231A or 231B or 231C. In-depth reading and linguistic analysis of texts related to Philhellene School of 6th to 8th century and related works up to 19th century. Each course may be taken independently for credit. Letter grading.

**250A-250B. Seminars: Armenian Literature. (4-4)** Seminar, three hours. Selected topics from various periods of Armenian literature. May be repeated for credit. S/U or letter grading.

**C251. Armenian Literature and Canon Formation. (4)** Lecture, four hours. Discussion of fundamental themes and genres around which Armenian literary tradition evolved and modalities by which this has been transformed in course of last two centuries as result of exposure to European thought and expressive forms. Concurrently scheduled with course C151. S/U or letter grading.

**C252. Modern Armenian Drama as Vehicle for Social Critique. (4)** Lecture, four hours. Readings of selected plays from 1668 to 1992 from three main genres of tragedy, comedy, and serious drama and featuring works by most significant Armenian playwrights, with focus on their role as commentators on contemporary mores and as agents for social reform. Concurrently scheduled with course C152. Letter grading.

**C253. Art, Politics, and Nationalism in Modern Armenian Literature. (4)** Lecture, four hours. Examination of role of literature in modern Armenian society in service to cause or causes, as propaganda for various ideologies, as art for art's sake, etc. Exploration of contrasting aesthetics implicit in these differing interpretations. Concurrently scheduled with course C153. P/NP or letter grading.

**C255. Issues in Armenian American Literature and Culture. (4)** Lecture, four hours. Preparation: reading knowledge of modern Eastern and Western Armenian. Theoretically informed exploration of some of most salient questions related to Armenian American community as reflected in its literature and other cultural artifacts in interaction with its pluralistic American ambience. Concurrently scheduled with course C155. Letter grading.

**C266. Armenian Film and Culture. (5)** Lecture, six hours. Requisite: course 1C or 4C. Overview of development of Armenian cinematography from first talkie to present, with focus on work of most seminal directors from Armenian Republic, as well as various voices from worldwide diaspora. Concurrently scheduled with course C166. S/U or letter grading.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Hebrew

### Lower-Division Courses

**1A-1B-1C. Elementary Hebrew. (5-5-5)** Lecture, four hours; laboratory, one hour. Enforced preparation: Hebrew placement test. Course 1A is enforced requisite to 1B, which is enforced requisite to 1C. Not open to native speakers. Introduction to modern Hebrew, including listening, speaking, reading, and writing. P/NP or letter grading.

**8. Elementary Hebrew: Intensive. (12)** Lecture, 10 hours; discussion, 10 hours. Intensive course equivalent to courses 1A, 1B, and 1C. Introduction to modern Hebrew, including listening, speaking, reading, and writing. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**102A-102B-102C. Intermediate Hebrew. (5-5-5)** Lecture, five hours. Enforced requisite: course 1C or Hebrew placement test. Course 102A is enforced requisite to 102B, which is enforced requisite to 102C. Not open to native speakers. Amplification of grammar; reading of texts from modern literature. P/NP or letter grading.

**103A-103B-103C. Advanced Hebrew. (4-4-4)** Lecture, five hours. Enforced requisites: courses 102A, 102B, and 102C, or Hebrew placement test. Students with prior knowledge of Hebrew who did not take courses 102A, 102B, and 102C should contact instructor to determine appropriate enrollment level. Not open to native speakers. Designed for students with intermediate speaking fluency and reading abilities in Hebrew. Introduction to modern Hebrew literary texts. P/NP or letter grading.

**110A-110B. Introduction to Biblical Hebrew. (4-4)** Lecture, three hours. P/NP or letter grading. **110A.** Phonology, morphology, and structure of biblical Hebrew. **110B.** Requisite: course 110A. Continuation of course 110A. Readings of biblical prose texts.

**110C. Readings in Biblical Hebrew. (4)** Lecture, three hours. Requisites: courses 110A, 110B. Continuation of course 110B. Reading of prose texts from Hebrew Bible, particularly from Former Prophets (Joshua-Kings). Introduction to certain aspects of historical grammar of biblical Hebrew. Reading and translation of variety of texts from different historical periods of Hebrew language, including texts from Archaic, Standard, and Late periods. Increased understanding of Hebrew verbal system, including different verbal patterns, their morphology, and syntactic function in biblical Hebrew prose. P/NP or letter grading.

**111A. Israeli Society through Hebrew Song and Video. (4)** Lecture, three hours; laboratory, one hour. Requisite: course 1C. Use of contemporary Israeli song and video to explore Israeli collective imagination and various Israeli sociocultural issues to familiarize students with different aspects of Israeli daily life and popular culture, while teaching them multiple speech acts in both formal and informal contexts and enriching their Hebrew vocabulary and its retention. P/NP or letter grading.

**111B-111C. Conversational Hebrew. (3-3)** Lecture, two hours; laboratory, one hour. Requisite: course 111A. Course 111B is requisite to 111C. Vocabulary used in daily life, different speech acts in both formal and informal contexts, and various Israeli sociocultural issues using different kinds of media, such as video, Internet, and newspapers. P/NP or letter grading.

**112. Readings in Modern Scholarly Hebrew. (2)** Seminar, two hours. Prerequisite: course 102C. In-depth reading and discussion of selected scholarly articles in modern Hebrew for various disciplines: Bible study, Jewish history and folklore, sociology, and literary criticism. Development of student proficiency in vocabulary, terminology, and ideas in these fields while enhancing comprehension of complex syntactical structures in Hebrew. May be repeated for credit. P/NP or letter grading.

**M113. Contemporary Israeli Short Stories/Novellas and Films in English. (5)** (Same as Jewish Studies M113.) Lecture, three hours; laboratory, two hours. Exploration of Israeli short stories/novellas and films (translated into English) written since mid-1980s that use, each to varying degree, postmodernist techniques to undermine predominance of modernist-Zionist narrative. Recycling and reexamination of Israeli condition and Zionist condition and skepticism about legitimacy of meta-narratives to redefine blurred outline of Israeli identity and subvert its underpinning formative myths. They simultaneously display loss of faith in representative dimension of language, including ability of texts to penetrate to its hidden meaning. Using periphery discourses, these texts strive to change modernist aesthetic and power paradigm. P/NP or letter grading.

**120. Biblical Texts. (4)** Lecture, three hours. Prerequisites: courses 102A, 102B, 102C. Translation and analysis of biblical texts, with attention to aspects of grammar, style, and interpretation.

**125. Hebrew Bible with Medieval Commentaries. (4)** Lecture, three hours. Prerequisite: course 103C. Hebrew Bible with the commentaries of Rashi, Ibn Ezra, and/or Nahmanides. May be repeated for maximum of 16 units. Letter grading.

**130. Rabbinic Texts. (4)** Lecture, three hours. Prerequisites: courses 103A, 103B, 103C. Readings in Mishnah, Talmud, and/or Midrash. May be repeated for credit.

**135. Medieval Hebrew Texts. (4)** Lecture, three hours. Prerequisites: courses 103A, 103B, 103C. Readings in medieval Hebrew prose and poetry. May be repeated for maximum of 16 units. P/NP or letter grading.

**C140. Modern Hebrew Poetry and Prose. (4)** Lecture, three hours. Prerequisites: courses 103A, 103B, and 103C, or equivalent knowledge of Hebrew. Study of major Hebrew writers of past 100 years. May be repeated for credit. Concurrently scheduled with course C240. Letter grading.

**170. Dead Sea Scrolls. (4)** Lecture, three hours. Prerequisite: course 110C. Readings in Hebrew scrolls from Dead Sea, with focus on grammar, paleography, and biblical interpretation in Dead Sea Scrolls. May be repeated for credit. P/NP or letter grading.

**180A-180B. Survey of Hebrew Grammar. (4-4)** Lecture, three hours. Prerequisites: courses 102A, 102B, 102C. Descriptive and comparative study of Hebrew grammar: phonology and morphology. Topics include development of Hebrew language from biblical times to present day, its relation to Arabic and other Semitic languages, methods of language expansion in Israeli Hebrew, traditional pronunciation of Hebrew by various Jewish communities, Hebrew contribution to other Jewish languages (Yiddish, Ladino, Judeo-Arabic). P/NP or letter grading.

**188FL. Special Studies: Readings in Hebrew. (2)** Seminar, two hours. Prerequisite: course 102C. Students must be concurrently enrolled in an affiliated main course. Primary readings and advanced training in Hebrew. Additional work in Hebrew to enrich and augment work assigned in main course, including reading, writing, and other exercises in Hebrew. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Hebrew. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Hebrew. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**210. History of Hebrew Language. (4)** Seminar, three hours. Development of Hebrew language in its classical period from archaic poetry through rabbinic Hebrew. Special attention to sociology of Hebrew: literacy, language ideology, register, dialect. S/U or letter grading.

**220. Studies in Hebrew Biblical Literature. (4)** Seminar, three hours. Critical study of Hebrew texts in relation to major versions; philological, comparative, literary, and historical study of various biblical books. May be repeated for credit. S/U or letter grading.

**225. Studies in Dead Sea Scrolls. (2 or 4)** Seminar, three hours. Prerequisite: course 120. Critical study of Dead Sea Scrolls, with attention to history of biblical interpretation and role of Dead Sea Scrolls in formative Judaism. Reading in original manuscripts from Dead Sea Scrolls. May be repeated for credit. S/U or letter grading.

**230. Rabbinic Hebrew Literature. (4)** Seminar, three hours. May be repeated for credit. S/U or letter grading.

**M231. Texts in Judeo-Arabic. (4)** (Same as Arabic M231.) Lecture, three hours. Prerequisites: course 102C, Arabic 102C. Reading of Judeo-Arabic texts by Maimonides (medieval religion, medicine, philosophy) and more recent texts in Judeo-Arabic dialects of Iraq and Egypt, with discussion of grammar and deviations from norms of classical Arabic. S/U or letter grading.

**235. Hebrew Literature of Second Temple Period. (4)** Seminar, three hours. Designed for students who have basic language skills and capacities necessary for reading Biblical Hebrew or Rabbinic Hebrew. Reading, analysis, and interpretation of Hebrew literature composed during Second Temple period. Relevant sources include Chronicles, Ezra-Nehemiah, Ecclesiastes, Ben Sira, Daniel, Dead Sea Scrolls, and other documents from Judean desert, and various apocrypha and pseudepigrapha. Special attention to historical development of Hebrew language and literature in relation to both earlier biblical sources, styles, grammar, and syntax and to subsequent Rabbinic writings. Course builds following skills: reading unpointed texts, mastering distinctive elements of vocabulary, idiom, and syntax of Second Temple Hebrew, and analyzing relationships between biblical and postbiblical sources. May be repeated for credit. S/U or letter grading.

**C240. Modern Hebrew Poetry and Prose. (4)** Lecture, three hours. Prerequisites: courses 103A, 103B, and 103C, or equivalent knowledge of Hebrew. Study of major Hebrew writers of past 100 years. May be repeated for credit. Concurrently scheduled with course C140. Letter grading.

**241. Studies in Modern Hebrew Prose Fiction. (4)** Studies in specific problems and trends in Hebrew prose fiction of the last two centuries. May be repeated for credit.

**242. Studies in Modern Hebrew Poetry. (4)** Studies in specific problems and trends in Hebrew poetry of the last two centuries.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Iranian

### Lower-Division Courses

**1A-1B-1C. Elementary Persian. (5-5-5)** Lecture, six hours. Course 1A is enforced requisite to 1B, which is enforced requisite to 1C. Not open to students with prior knowledge of Persian. P/NP or letter grading.

**8. Elementary Persian: Intensive. (15)** Lecture, 10 hours; discussion, 10 hours. Not open to students who have learned, from whatever source, enough Persian to qualify for more advanced courses. Intensive course equivalent to courses 1A, 1B, and 1C. Introduction to fundamentals of Persian, including pronunciation, grammar, and Persian script, with emphasis on all four basic language skills—speaking, listening comprehension, reading, and writing. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A-20B-20C. Accelerated Elementary Persian. (6-6-6)** Lecture, four hours; discussion two hours; laboratory, 30 minutes per day. Preparation: some knowledge of spoken Persian. Course 20A is enforced requisite to 20B, which is enforced requisite to 20C. Intensive and thorough study of fundamental structure of Persian grammar; reading from a wide range of classical and modern poetry and prose compositions. P/NP or letter grading.

**55. Gender and Sexuality in Arts and Literatures of Iran and Middle East. (5)** Lecture, three hours; discussion, one hour. Multifaceted introduction to Persian poetry, recognized as jewel of Persian culture, and to pictorial, architectural, performative, cinematographic, and photographic dimensions of artistic milieu spanning between Balkans, India, and Central Asia from 10th century CE to present. With consideration of centrality of discourses on identity, desire, and spirituality to core of Persian aesthetics, study of broad variety of socioanthropological, ethical, and historiographical issues stemming from both mainstream topics characterizing extensive field of Iranian studies and most controversial conversations on nature of sexuality, ethnicity, and religion. P/NP or letter grading.

**M60. Achaemenid Civilization and Empire of Alexander. (5)** (Same as Ancient Near East M60 and History M60.) Lecture, three hours; discussion, one hour. Survey of period from circa 600 to 300 BCE, rise and fall of Achaemenid Persia, first world empire of antiquity, which was ended by Alexander the Great, whose campaigns were as transformative as they were violent. Alexander connected ancient Mediterranean and Near East as never before, ushering in new era and forever changing cultural landscape of ancient world. Focus on themes of ancient kingship and political ideology; comparative study of empires; administration and institutions; and religious and ethnic diversity in large, heterogeneous states. Emphasis on diversity critical to understanding political nuances of ancient world. Students gain broad knowledge of Achaemenid and Macedonian empires, facility with ancient primary sources, and development of analytical skills central to discipline of history that allow conceptualizing issues of diversity and othering in ancient world. P/NP or letter grading.

**M60W. Achaemenid Civilization and Empire of Alexander. (5)** (Same as Ancient Near East M60W and History M60W.) Lecture, three hours; discussion, one hour. Prerequisite: English Composition 3. Not open for



credit to students with credit for course M60. Survey of period from circa 600 to 300 BCE, rise and fall of Achaemenid Persia, first world empire of antiquity, which was ended by Alexander the Great, whose campaigns were as transformative as they were violent. Alexander connected ancient Mediterranean and Near East as never before, ushering in new era and forever changing cultural landscape of ancient world. Focus on themes of ancient kingship and political ideology; comparative study of empires; administration and institutions; and religious and ethnic diversity in large, heterogeneous states. Emphasis on diversity critical to understanding political nuances of ancient world. Students gain broad knowledge of Achaemenid and Macedonian empires, facility with ancient primary sources, and development of analytical skills central to discipline of history that allow conceptualizing issues of diversity and othering in ancient world. Satisfies Writing II requirement. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**102A-102B-102C. Intermediate Persian. (5-5-5)** Lecture, six hours. Prerequisite: course 1C or 20C. Course 102A is requisite to 102B, which is requisite to 102C. P/NP or letter grading.

**103A-103B-103C. Advanced Persian. (4-4-4)** Lecture, three hours. Prerequisite: course 102C. Students who do exceptionally well in course 20C may be permitted to enroll with consent of instructor. Each course may be taken independently for credit. P/NP or letter grading. **103A.** Introduction to Classical Persian Poetry; **103B.** Introduction to Classical Persian Prose; **103C.** Introduction to Contemporary Persian Poetry and Prose.

**104. Philosophical Texts. (4)** Lecture, three hours. Readings in English. Introduction to wide selection of philosophical texts in translation. Identification of major philosophical themes in ontology, epistemology, psychology, and cosmology through texts, with study in detail. P/NP or letter grading.

**M105A. Bahá'í Faith in Iran: Historical and Sociological Survey. (4)** (Same as Religion M105A.) Lecture, three hours. Readings in English. Rise and development of Bábí and Bahá'í religions in context of 19th century Iran. Focus on personalities of Báb, Bahá'u'lláh, and 'Abdu'l-Bahá. May be taken independently for credit. P/NP or letter grading.

**M105B. Bahá'í Faith in Iran: Survey of Bahá'í Scriptures and Thought. (4)** (Same as Religion M105B.) Lecture, three hours. Readings in English. Analysis of major writings by Báb, Bahá'u'lláh, and 'Abdu'l-Bahá. Emphasis on mystical and social principles. May be taken independently for credit. P/NP or letter grading.

**M105C. Bahá'í Faith in Iran: 20th-Century Iran and the Bahá'ís. (4)** (Same as Religion M105C.) Lecture, three hours. Readings in English. Focus on history of 20th-century Iran beginning with constitutional revolution, development and persecution of Bahá'í commu-

nity, and latter's relation to reform movements in Iran. May be taken independently for credit. P/NP or letter grading.

**M110A-M110B-M110C. Iranian Civilization. (4-4-4)** (Same as Ancient Near East M110A-M110B-M110C and History M110A-M110B-M110C.) Lecture, three hours; discussion, one hour (when scheduled). P/NP or letter grading. **M110A.** History of Achaemenid Empire. From end of Elam and rise of Medes to Macedonian conquest of Achaemenid Persia. Emphasis on political history, state structure, empire's religions, and Greco-Persian interactions. Further accents on Cyrus' empire and Darius' world order, age of Persian Wars, Cyrus the Younger, Achaemenid Egypt, Alexander's conquest. **M110B.** History of Arsacid (Parthian) Empire. From Hellenistic rule in Persia to Sasanian conquest. Emphasis on political history, state structure, empire's religions, interactions with Hellenistic and Roman worlds. Further accent on Parthian conquest of Iran and Mesopotamia, Seleucid demise and Arsacid hegemony in East, Arsacid-Roman wars, rise of Sasanians. **M110C.** History of Early Sasanian Empire—From Ardashir I to Rise of Peroz (circa 224-459 CE) From fall of Arsacids to Muslim conquest of Iran. Emphasis on political and economic history, evolution of state structure, empire's religious landscape (Mazdism, Manicheism, Exilarchate, Church of Persia, Mazdakism), Persian and Roman/Byzantine interactions, Persia and East. Further accent on Persian-Roman conflicts and cooperation, Persia and Huns.

**M115A-M115B-M115C. Elementary Azeri. (4-4-4)** (Same as Turkic Languages M115A-M115B-M115C.) Lecture, five hours. Knowledge of Russian, Turkish, and Iranian helpful. Grammatical competence at elementary level; knowledge of basic facts of Azeri grammar; reading competence with help of dictionary; ability to write simple compositions; basic conversational skill. P/NP or letter grading.

**120. Comparative Study of Six Major Persian Poets. (4)** Lecture, two hours; discussion, one hour. Preparation: knowledge of Persian. Lectures in Persian, readings in English and Persian. Comparative study of six major Persian poets from 10th to 14th century who shaped sense of Persian identity and delineated chief distinguishing characteristics of Persian thought and culture. May be repeated for credit with consent of instructor. P/NP or letter grading.

**130. Intellectual History of Jews of Persia. (4)** Lecture, three hours. Readings in English. Introduction to intellectual history of Jews in Persia by highlighting select areas of Judeo-Persian studies and focusing on various authors and their work. P/NP or letter grading.

**131. Introduction to Judeo-Persian: Language and Culture. (4)** Lecture, three hours. Preparation: knowledge of Persian equivalent to course 102C. Introduction to history of Judeo-Persian literature and culture to prepare students to read Judeo-Persian texts. P/NP or letter grading.

**132. Intermediate Judeo-Persian Literature and Culture. (4)** Lecture, three hours. Enforced prerequisites: courses 102C, 131. Literary study of Judeo-Persian literature, as segment of Iranian classical literature. Judeo-Persian literary genres, in forms of prose and verse, compared with their parallel genres in context of Iranian literature. Textual study of Judeo-Persian manuscripts, both print and cursive, and their variations depending on time period or locality. P/NP or letter grading.

**140. Persian Belles Lettres (*Adabiyât*). (4)** Lecture, three hours. Prerequisite: course 102C. Study of major Persian poets and prose writers: prose—Sohravardi, Hamadani, Nasafi, Irâqi, and others; poetry—Hâfez, Sa'di, Rûmi, Bahâr, Dehkoda, and others. May be repeated for credit with consent of instructor. P/NP or letter grading.

**141. Persian Analytical Prose. (4)** Lecture, three hours. Prerequisite: course 102C. Study of selected analytical and expository prose texts, with emphasis on philosophy, sciences, literary criticism, and history. May be repeated for credit with consent of instructor. P/NP or letter grading.

**142. Persian Popular Ethics. (4)** Lecture, three hours. Prerequisite: course 102C. Study of major Persian works on popular ethics that have helped shape normative

social, cultural, and political values in Iranian civilization. May be repeated for credit with consent of instructor. P/NP or letter grading.

**150A-150B. Survey of Persian Literature in English. (4-4)** Lecture, three hours. Knowledge of Persian not required. Each course may be taken independently for credit.

**161A-161B-161C. Elementary Middle Iranian. (4-4-4)** Lecture, three hours. Preparation: knowledge of Persian desirable. Course 161A is requisite to 161B, which is requisite to 161C. Studies in grammars and texts of Middle Iranian languages (e.g., Middle Persian, Parthian, Sogdian, Khotanese, Bactrian). May be repeated for credit with consent of instructor. P/NP or letter grading.

**CM163. Archaeology of Iran. (4)** (Same as Ancient Near East CM163.) Lecture, three hours. Designed to introduce students to Iranian archaeology from prehistoric through Achaemenid times. Concurrently scheduled with course CM259. P/NP or letter grading.

**164. Ancient Cities of Iran: Archaeological Survey of Historic Cities and Sites of Iran from 4000 BC to 1900 AD. (4)** Lecture, four hours. Introduction to archaeological and historical monuments and sites of Iran from earliest periods to early 20th century. Examination of emergence of early Iranian villages, formation of cities and their development and expansion throughout late Sasanian and early Islamic periods to preindustrial era in early years of past century. Study of selection of ancient Iranian sites and cities, from fifth millennium BC to Qajar period, based on relevant archaeological, historical, and geographical sources. Study of archaeology and historical geography of each site or city with aerial views, which reveal rich array of architecture and town planning—from ordinary settlements and vernacular constructions to worldly-known royal and religious monuments. P/NP or letter grading.

**169. Civilization of Pre-Islamic Iran. (4)** Survey of Iranian culture from the beginning through Sasanian period.

**170. Religion in Ancient Iran. (4)** History of religion in Iran from the beginning to the Mohammedan conquest; Indo-Iranian background, Zoroastrianism, Manichaeism, Mazdakism.

**M178. Introduction to History and Culture of Iranian Jews. (4)** (Same as History M178 and Jewish Studies M178.) Lecture, three hours. Introduction to political, intellectual, cultural, and socioeconomic status of Iranian Jews. Exploration of history of Iranian Jews from ancient period throughout history, with focus on post-Middle Ages to present time. Topics, studied from perspective of Iranian cultural and intellectual history, include identity and status, religious tolerance versus forced conversion, Iranian Jewish emancipation, and dynamic symbiosis between Iranian Jews and other Iranians. P/NP or letter grading.

**187. Variable Topics in Iranian Studies. (4)** Lecture, three hours. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit. P/NP or letter grading.

**188FL. Special Studies: Readings in Iranian. (2)** Seminar, two hours. Prerequisite: course 102C. Students must be concurrently enrolled in affiliated main course. Primary readings and advanced training in Iranian. Additional work in Iranian to enrich and augment work assigned in main course, including reading, writing, and other exercises in Iranian. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for

maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Iranian. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Iranian. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M210. Topics in Ancient Iranian History. (4)** (Same as Ancient Near East M208 and History M210.) Seminar, three hours. Varying topics on Elamite, Achaemenid, Arsacid, and Sasanian history. May be repeated for credit. S/U or letter grading.

**220A-220B. Classical Persian Texts. (4)** Lecture, three hours. Prerequisites: courses 103A, 103B, 103C. Study of selected classical Persian texts. Each course may be taken independently for credit.

**221. Rumi, Mystic Poet of Islam. (4)** Seminar, three hours. Prerequisite: course 220A or 220B. Study of life and works of Rumi in context of interaction of Sufism and poetic creativity. May be repeated twice for credit.

**M222A-M222B. Vedic. (4-4)** (Same as Indo-European Studies M222A-M222B and South Asian M222A-M222B.) Lecture, three hours. Preparation: knowledge of Sanskrit equivalent to South Asian 110C. Characteristics of Vedic dialect and readings in Rig-Vedic hymns. Only course M222B may be repeated for credit. S/U or letter grading.

**M230A-M230B. Old Iranian. (4-4)** (Same as Indo-European Studies M230A-M230B.) Lecture, four hours. Studies in grammars and texts of Old Persian and Avestan. Comparative considerations. Only course M230B may be repeated for credit. S/U or letter grading.

**231A-231B-231C. Advanced Middle Iranian. (4-4-4)** Lecture, three hours. Prerequisite: course 161C. Course 231A is requisite to 231B, which is requisite to 231C. Further studies in grammars and texts of Middle Iranian languages (e.g., Middle Persian, Parthian, Sogdian, Khotanese, Bactrian). May be repeated for credit with consent of instructor. S/U or letter grading.

**250. Seminar: Classical Persian Literature. (4)** Seminar, three hours. Prerequisites: courses 103A, 103B, 103C, 199. May be repeated twice for credit.

**251. Seminar: Contemporary Persian Literature. (4)** Seminar, three hours. Prerequisite: course 140. Studies in specific problems and trends in Persian poetry and prose in the 20th century. May be repeated twice for credit.

**CM259. Archaeology of Iran. (4)** (Same as Ancient Near East CM259.) Lecture, three hours. Designed to introduce students to Iranian archaeology from prehistoric through Achaemenid times. Concurrently scheduled with course CM163. S/U or letter grading.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Islamic Studies

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Introduction to Islam. (5)** (Same as Religion M20.) Lecture, three hours; discussion, one hour. Genesis of Islam, its doctrines, and practices, with readings from Qur'an and Hadith; schools of law and theology; piety and Sufism; reform and modernism. P/NP or letter grading.

**M27A-M27B-M27CW. Global Islam. (6-6-6)** (Same as Clusters M27A-M27B-M27CW.) Course M27A is enforced requisite to M27B, which is enforced requisite to M27CW. Introduction to Islam, immensely diverse global tradition which is second largest religion. Study of Islam and Muslims within framework of study of global religious traditions and emphasis on profound diversity of localized belief and practice found across world. Examination of Islam's evolution across 15 centuries, from late antiquity—when it emerged as localized religion in Central Arabia—to modern era where it is practiced from U.S. to Indonesia. Concentration on broad analytical categories in study of religion such as text, culture, history, and prophecy. Students transition to more complex analyses through chronological overview of Islamic history. Study also of case studies of Muslim global networks in arenas such as art, music, literature, and political thought. **M27A-M27B.** Lecture, three hours; discussion, one hour. P/NP or letter grading. **M27CW.** Special Topics. Seminar, three hours. Satisfies Writing II requirement. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**CM107. Islam in West. (5)** (Formerly numbered M107.) (Same as Arabic M107 and Religion M107.) Lecture, three hours; discussion, one hour. Acquisition of understanding of basic doctrines and practices of Islam. Survey of history of Islam in West, with focus on U.S. and France. Analysis of issues relevant to growth and development of selected Muslim communities in West. Exposure to diverse expressions of Islam through independent research on Muslim communities and institutions in U.S. Development of strong analytical writing and speaking skills. Concurrently scheduled with course C207. P/NP or letter grading.

**M111. Introduction to Islamic Archaeology. (4)** (Same as Art History M119C and Middle Eastern Studies M111.) Lecture, three hours. From earliest monuments of Islam in Arabia and Jerusalem to humble remains of small Egyptian port, broad focus on archaeological and standing remains in central Islamic lands (primarily Syria, Egypt, and Iraq), Turkey, Iran, North Africa, and Spain. Profound cultural transformations occurred from birth of Islam in 7th century to early Ottoman period in 16th and 17th centuries, which are traceable in material records. Assessment of effectiveness of tools afforded by historical archaeology to aid understanding of past societies. P/NP or letter grading.

**M112. Archaeology and Art of Christian and Islamic Egypt. (4)** (Same as Archaeology M112, Art History M119D, and Middle Eastern Studies M112.) Lecture, three hours. Culture of Egypt transformed gradually after Muslim conquest in mid-7th century CE. According to material evidence such as ceramics, textiles, architectural forms, and building techniques, it is functionally impossible to separate pre-Islamic Christian Egypt from early Islamic Egypt. Although population may have become largely Muslim by 10th century, Egypt remained Coptic in many senses even to 14th century and retains sizeable Christian minority to present. Survey of archaeological remains and standing architecture of Egypt from 6th to 19th century, charting changes and continuities in material culture and shifts in human geography and land use. P/NP or letter grading.

**CM115. Islam and Other Religions. (5)** (Formerly numbered M115.) (Same as Religion M115.) Lecture, three hours; discussion, one hour. Students gain familiarity with historical cases and modes of interaction between Muslims and non-Muslims in plural societies. Consideration of axis questions such as how does Qur'an reflect religious plurality; how does it situate Islam vis-à-vis its alternatives; what encounters did rapid expansion of Islam bring about in diverse societies; how did Islam and other religions change through debate, war, and exchange of ideas; what roles has political power played in conditioning interreligious interaction; how have conversion and hybridity affected what it means to be Muslim; what is different about interreligious interactions in secular states and societies; and how is past invoked to justify opinions and policies today. Investigation of these questions by conducting microstudies: close readings of sources through theoretical lens. Concurrently scheduled with course C215. P/NP or letter grading.

**130. Shi'a in Islamic History. (4)** Seminar, three hours; discussion, one hour. Rise and development of Shi'a Islam, its doctrines, and practices; major branches: Twelvers, Ismailis, Zaydis; their contribution to Islamic thought and civilization; modern trends of reinterpretation and reform. Letter grading.

**C151. Islamic Thought. (4)** (Formerly numbered 151.) Lecture, three hours. Recommended prerequisite: introductory course on Islam or instructor consent. Introduction to major fields of inquiry and debate in Islamic studies (e.g., exegesis, Hadith, law, theology, Sufism). Focus on selected topics of debate such as nature of God, jihad, hijab, or pilgrimage. Concurrently scheduled with course C251. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Islamic Studies. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Islamic Studies. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Introduction to Islamic Studies. (4)** Seminar, three hours. Introduction to various disciplines and methods employed in study of Islamic histories, cultures, and societies, with special emphasis on methodologies and current theories and how they may be used and combined by Islamic studies students. Content varies each year. Letter grading.

**201. Arabo-Islamic Sciences. (4)** Seminar, three hours. Preparation: good reading knowledge of Arabic, English, and one other Western language. Comprehensive coverage of Arabo-Islamic sciences that formed matrix of Islamic education. Survey of most recent developments in following disciplines: Arabic language and literature, Qur'anic sciences, traditions, jurisprudence, theology, and Sufism. Letter grading.

**C207. Islam in West. (5)** Lecture, three hours; discussion, one hour. Acquisition of understanding of basic doctrines and practices of Islam. Survey of history of Islam in West, with focus on U.S. and France. Analysis of issues relevant to growth and development of selected Muslim communities in West. Exposure to diverse expressions of Islam through independent research on Muslim communities and institutions in U.S. Development of strong analytical writing and speaking skills. Concurrently scheduled with course CM107. S/U or letter grading.

**C215. Islam and Other Religions. (5)** Lecture, three hours; discussion, one hour. Students gain familiarity with historical cases and modes of interaction between Muslims and non-Muslims in plural societies. Consideration of axis questions such as how does Qur'an reflect religious plurality; how does it situate Islam vis-à-vis its alternatives; what encounters did rapid expansion of Islam bring about in diverse societies; how did Islam and other religions change through debate, war, and exchange of ideas; what roles has political power played in conditioning interreligious interaction; how have conversion and hybridity affected what it means to be Muslim; what is different about interreligious interactions in secular states and societies; and how is past invoked to justify opinions and policies today. Investigation of these questions by conducting microstudies: close readings of sources through theoretical lens. Concurrently scheduled with course CM115. S/U or letter grading.

**C251. Islamic Thought. (4)** Lecture, three hours. Recommended requisite: introductory course on Islam or instructor consent. Introduction to major fields of inquiry and debate in Islamic studies (e.g., exegesis, Hadith, law, theology, Sufism). Focus on selected topics of debate such as nature of God, jihad, hijab, or pilgrimage. Concurrently scheduled with course C151. Letter grading.

**291A. Variable Topics in Islamic Studies. (4)** Seminar, three hours. Selected topics on Islam. May be repeated for credit with topic change. S/U or letter grading.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**598. MA Thesis Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U or letter grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Jewish Studies

### Lower-Division Courses

**M10. Introduction to Judaism. (5)** (Same as Religion M10.) Lecture, three hours; discussion, one hour. Judaism's basic beliefs, institutions, and practices. Topics include development of biblical and rabbinic Judaism; concepts of god, sin, repentance, prayer, and the messiah; history of Talmud and synagogue; evolution of folk beliefs and year-cycle and life-cycle practices. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about myths of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M67. Popular Jewish and Israeli Music. (5)** (Same as Musicology M67.) Lecture, four hours; discussion, one hour. Music of Jews is diverse. With history of several thousand years and series of developments in modernity, music in Jewish life covers variety of styles found in many contexts. Exploration of music of Jews within last 100 years, with focus on popular music of Jews in America and Israel. Examination of music in Israel, with focus on songs of land of Israel, Israeli rock, and Muzika Mizrachit (Middle Eastern popular music). P/NP or letter grading.

**M80. Jewish American Experience through Music. (5)** (Same as Ethnomusicology M80 and Musicology M80.) Lecture, four hours; discussion, one hour. In synagogue and on stage, and from LP recordings to YouTube, Jews in America have varied musical experiences. Music of synagogue, celebrations at home, in community, and theater are all interesting developments of Jewish music. New Opportunities in entertainment industry brought new possibilities for Jews in popular music, rock, and film scores. Exploration of various examples of Jews responding and adapting to their American context and becoming American through music. Exploration of different music genres and contexts. Presentations by guest composers and performers. Letter grading.

**M82. Music and Holocaust: Individual Experience. (5)** (Same as Musicology M82.) Lecture, three hours; discussion, one hour. Roles of music during Holocaust are as varied as people who experienced it. Music was composed and performed by prisoners in almost every concentration camp; music was means for some individuals to gain favorable treatment, while others weaponized it. Traces development of European musical culture under Nazi regime (1933-45), focusing on how individuals interacted with music throughout Holocaust. Study of some of newest developments in Holocaust music research, including role American and European non-governmental organizations played in creation of artistic hubs in campus of southern France. Exploration also of cultural representations of Holocaust, and role of music in society's collective memory. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M113. Contemporary Israeli Short Stories/Novellas and Films in English. (5)** (Same as Hebrew M113.) Lecture, three hours; laboratory, two hours. Exploration of Israeli short stories/novellas and films (translated into English) written since mid-1980s that use, each to varying degree, postmodernist techniques to undermine predominance of modernist-Zionist narrative. Recycling and reexamination of Israeli condition and Zionist condition and skepticism about legitimacy

of meta-narratives to redefine blurred outline of Israeli identity and subvert its underpinning formative myths. They simultaneously display loss of faith in representative dimension of language, including ability of texts to penetrate to its hidden meaning. Using periphery discourses, these texts strive to change modernist aesthetic and power paradigm. P/NP or letter grading.

**135. Jewish Law. (5)** Lecture, three hours. Introduction to Jewish law from biblical literature to modern legal systems. Comparison of Jewish legal systems to modern secular systems and discussion of ethical dimensions of legal systems. P/NP or letter grading.

**140A-140B. American Jewish History. (4-4)** Lecture, three hours. Examination of social and cultural history of American Jewish community from its inception to the present, with emphasis on integration of successive immigrants and development of institutions. P/NP or letter grading. **140A.** 1654 to 1914; **140B.** 1914 to the Present.

**M142. Modern Israel: Politics, Society, Culture. (4)** (Same as Middle Eastern Studies M142.) Lecture, three hours. Examination of evolution of Israel—its changing society, volatile domestic and foreign politics, and dynamic culture—from its foundation in 1948 to present, in context of global political and cultural change and changing Jewish world. Tension between Israel's conception of itself as Jewish state and fact that it is home to wide variety of ethnic and religious groups and to great diversity of cultures; that it was envisaged as safe haven for Jewish people but has been characterized by insecurity and ongoing war; that, founded as democracy, it contends with multiple strains on its democratic system, such as tensions between Jews and Arabs, secular and religious Jews, and disparate ethnic groups. P/NP or letter grading.

**143. Introduction to Jewish Folklore. (4)** Lecture, three hours. Nature of Jewish folklore; narrative, folk song, folk art, folk religion, and methods and perspectives used in their analysis. P/NP or letter grading.

**M144. Zionism: Ideology and Practice in Making of Jewish State. (4)** (Same as Middle Eastern Studies M144.) Lecture, three hours; discussion, one hour. History of Zionism on backdrop of European, world, and Jewish histories from ideological origins to political, cultural, and social foundations of State of Israel. P/NP or letter grading.

**M150A-150B. Hebrew Literature in English. (4-4)** Lecture, three hours. Each course may be taken independently for credit. **M150A.** Literary Traditions of Ancient Israel: Bible and Apocrypha. (Same as Comparative Literature M101.) Study of literary culture of ancient Israel through examination of principal compositional strategies of Hebrew Bible and Apocrypha (read in translation). P/NP or letter grading. **150B.** Rabbinic Judaism. Topics include emergence of rabbinic Judaism; its original literary forms; rabbinic worldview; forms of medieval rabbinic literature; modern Jewish religious movements and their attitude to rabbinic Judaism.

**M151A-151B. Modern Jewish Literature in English. (4-4)** Lecture, three hours. Each course may be taken independently for credit. P/NP or letter grading. **M151A.** Diaspora Literature. (Same as Comparative Literature M166.) Study of literary responses of Jews to modernity, its challenges, and threats. Readings in texts originally written in English or translated from Hebrew, Yiddish, German, Russian, French, and Italian. Analysis of formal aspects of each work. **151B.** Israeli Literature. Study of translations from Hebrew literature written in Israel and reflecting cardinal facets of Israeli life: social issues, security problems, identity of the state, role of individual. Analysis of formal aspects of each work.

**M155. Angels, Demons, and End of World: Magic, Mysticism, and Apocalypse in Jewish Traditions. (4)** (Same as Religion M155.) Lecture, three hours. Focus on popular Jewish traditions of magic, mysticism, apocalypse, and various contours of Judaism's textual and material traditions in antiquity. Examination of texts and objects from Hebrew Bible to modern discussions of Kabbalah and end of world, concentrating on Jewish antiquity. Discussion of texts, including Hebrew Bible, Dead Sea Scrolls, extra-biblical Jewish texts, New Testament, and rabbinic and later Jewish literature. Discussion of sociohistorical context in

order to decipher features and functions of magic, mysticism, and apocalypse in antiquity and modernity. P/NP or letter grading.

**M162. Israel Seen through Its Literature. (4)** (Same as Comparative Literature M162.) Lecture, three hours. Attempt to impart profound understanding of Israel as seen through its literature. Examination of variety of literary texts—stories, novels, and poems—and reading of them in context of their historical backgrounds. P/NP or letter grading.

**170. Dead Sea Scrolls and Early Judaism. (4)** Lecture, three hours. Introduction to Dead Sea Scrolls in English translation. Survey of literature, community of Khirbet Qumran, and their place in early Judaism. P/NP or letter grading.

**175. Modern Israeli Literature Made into Films. (5)** Lecture, four hours; discussion, one hour. Reading, analysis, and discussion of modern Israeli literature that was made into films, including literary works of prominent Israeli authors (S. Yizhar, A.B. Yehoshua, Amos Oz, and Yitzhak Ben Ner) that were translated to English and had filmic adaptations. Letter grading.

**177. Variable Topics in Jewish Studies. (4)** Lecture, three hours. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit. P/NP or letter grading.

**M178. Introduction to History and Culture of Iranian Jews. (4)** (Same as History M178 and Iranian M178.) Lecture, three hours. Introduction to political, intellectual, cultural, and socioeconomic status of Iranian Jews. Exploration of history of Iranian Jews from ancient period throughout history, with focus on post-Middle Ages to present time. Topics, studied from perspective of Iranian cultural and intellectual history, include identity and status, religious tolerance versus forced conversion, Iranian Jewish emancipation, and dynamic symbiosis between Iranian Jews and other Iranians. P/NP or letter grading.

**M181. Topics in Jewish History. (4)** (Same as History M181.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of major issues in Jewish history. May be repeated for maximum of 16 units with topic and/or instructor change. P/NP or letter grading.

**M181SL. Jewish Thought, Politics, and Ethics: From Theory to Practice. (4)** (Same as History M181SL.) Lecture, three hours; fieldwork, two hours. Designed for juniors/seniors. History of Los Angeles, with special emphasis on pivotal roles Jews have played in shaping Los Angeles and role that Los Angeles has played in reshaping of Jewish identities, communities, and cultures. Exploration of themes related to regionalism in American Jewish history, comparative immigration and migration patterns, and frontiers and borderlands, while providing overview of historical methodologies and interpretation. Examination of ethical and methodological implications of writing history in digital age and learning how to read and analyze these new media works as primary and secondary historical texts. Opportunity to contribute to body of historical work related to Los Angeles Jewish history through required service work with community partners and development of digital public history projects. P/NP or letter grading.

**M182A. Ancient Jewish History. (4)** (Same as History M182A and Religion M182A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of social, political, and religious developments. P/NP or letter grading.

**M182B. Medieval Jewish History. (4)** (Same as History M182B and Religion M182B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of unfolding of Jewish history from rise of Christianity to expulsion of Jews from Spain in 1492. P/NP or letter grading.

**M182C. Modern Jewish History. (4)** (Same as History M182C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of early modern Jewish history beginning with enormously repercussive expulsion of Jews from Spain in 1492, followed by transformations in Jewish society and identity over five centuries in Europe and Middle East, and concluding with nationalism. P/NP or letter grading.

**M184A. Jewish Civilization: Encounter with Great World Cultures. (4)** (Same as History M184A and Religion M184A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of dynamic and millennia-old interaction of Jews with great world cultures. Creative adaptations that have lent Jewish culture its distinct and various forms. P/NP or letter grading.

**M184B. History of Anti-Semitism. (4)** (Same as History M184B.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of origins and historical development of anti-Semitism. P/NP or letter grading.

**M184C. American Jewish Experience. (4)** (Same as History M184C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Experience of Jews in America, both historical and contemporary. P/NP or letter grading.

**M184D. History of Zionism and State of Israel. (4)** (Same as History M184D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of history of State of Israel from 1948 to present. P/NP or letter grading.

**M187. Holocaust in Literature. (4)** (Same as Comparative Literature M165.) Lecture, three hours. Investigation of how Holocaust informs variety of literary and cinema works and raises wide range of aesthetic and moral questions. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Jewish Studies. (4)** Seminar, three hours. Research seminar on selected topics. Reading, discussion, and development of culminating project. May be repeated for credit. P/NP or letter grading.

**197. Individual Studies in Jewish Studies. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Jewish Studies. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Course

**202. Colonization and Nationalism: Jewish Settlement in Palestine-Israel, 1882 to 1948. (4)** Seminar, three hours. Zionist settlement policy and practice, engaging perspectives concerning colonialism, socialism, and national conflict over Palestine. S/U or letter grading.

## Middle Eastern Studies

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M50A. First Civilizations. (5)** (Same as Ancient Near East M50A.) Lecture, three hours; discussion, one hour. Survey of great civilizations of ancient Near East—Egypt, Israel, and Mesopotamia—with attention to emergence of writing, monotheism, and urban societies. Letter grading.

**M50B. Origins of Judaism, Christianity, and Islam. (5)** (Same as Ancient Near East M50B and Religion M50.) Lecture, three hours; discussion, one hour. Examination of three major monotheisms of Western cultures—Judaism, Christianity, and Islam—historically and comparatively. Development, teachings, and ritual practices of each tradition up to and including medieval period. Composition and development of various sacred texts, highlighting key themes and ideas within different historical and literary strata of traditions, such as mechanisms of revelation, struggle for religious authority, and common theological issues such as origin of evil and status of nonbelievers. Letter grading.

**M50CW. Making and Studying Modern Middle East. (5)** (Same as Anthropology M67W.) Lecture, three hours; discussion, one hour. Requisite: English Composition 3. Survey of modern Middle Eastern cultures through readings and films from Middle East and North Africa. Satisfies Writing II requirement. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M111. Introduction to Islamic Archaeology. (4)** (Same as Art History M119C and Islamic Studies M111.) Lecture, three hours. From earliest monuments of Islam in Arabia and Jerusalem to humble remains of small Egyptian port, broad focus on archaeological and standing remains in central Islamic lands (primarily Syria, Egypt, and Iraq), Turkey, Iran, North Africa, and Spain. Profound cultural transformations occurred from birth of Islam in 7th century to early Ottoman period in 16th and 17th centuries, which are traceable in material records. Assessment of effectiveness of tools afforded by historical archaeology to aid understanding of past societies. P/NP or letter grading.

**M112. Archaeology and Art of Christian and Islamic Egypt. (4)** (Same as Archaeology M112, Art History M119D, and Islamic Studies M112.) Lecture, three hours. Culture of Egypt transformed gradually after Muslim conquest in mid-7th century CE. According to material evidence such as ceramics, textiles, architectural forms, and building techniques, it is functionally impossible to separate pre-Islamic Christian Egypt from early Islamic Egypt. Although population may have become largely Muslim by 10th century, Egypt remained Coptic in many senses even to 14th century and retains sizeable Christian minority to present. Survey of archaeological remains and standing architecture of Egypt from 6th to 19th century, charting changes and continuities in material culture and shifts in human geography and land use. P/NP or letter grading.



**C122. History, Memory, and Identity in Israel. (4)** Seminar, three hours. Israeli society was born in effort to reshape images of Jewish past and has been shaken by many debates over history, recent and ancient events, and how these are represented by historical scholarship as well as in popular media and public spaces. Struggles over image of past have become central (as in many other societies) to debates about identity in present and directions, goals, and hopes for future. Exploration of ways in which struggles over past have shaped Israeli present. Examination of historiographical debates and their reflections in range of media to make some sense of ever-changing past, ways in which it shapes political, ideological, and cultural identities in present, and where meeting points are between popular discourse and work historians do. Examination of conflicting readings of past and its representation in Israeli historiography and in shaping of Israeli collective memory and identity. Concurrently scheduled with course C222. P/NP or letter grading.

**M133. Bible and Qur'an. (4)** (Same as Religion M133.) Lecture, three hours. Survey of Hebrew Bible/Old Testament, New Testament, and Qur'an to familiarize students with content of scriptures of Judaism, Christianity, and Islam, and sociocultural background from which these multifarious texts emerged, and to explore major themes and consider variety of approaches to scripture. Development of appreciation for role scripture plays in these religious systems and in American culture and society. P/NP or letter grading.

**M142. Modern Israel: Politics, Society, Culture. (4)** (Same as Jewish Studies M142.) Lecture, three hours. Examination of evolution of Israel—its changing society, volatile domestic and foreign politics, and dynamic culture—from its foundation in 1948 to present, in context of global political and cultural change and changing Jewish world. Tension between Israel's conception of itself as Jewish state and fact that it is home to wide variety of ethnic and religious groups and to great diversity of cultures; that it was envisaged as safe haven for Jewish people but has been characterized by insecurity and ongoing war; that, founded as democracy, it contends with multiple strains on its democratic system, such as tensions between Jews and Arabs, secular and religious Jews, and disparate ethnic groups. P/NP or letter grading.

**M144. Zionism: Ideology and Practice in Making of Jewish State. (4)** (Same as Jewish Studies M144.) Lecture, three hours; discussion, one hour. History of Zionism on backdrop of European, world, and Jewish histories from ideological origins to political, cultural, and social foundations of State of Israel. P/NP or letter grading.

**177. Variable Topics in Middle Eastern Studies. (4)** Lecture, three hours. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit. P/NP or letter grading.

**M178. Variable Topics. (4)** (Same as Religion M178.) Seminar, three hours. Interdisciplinary approach to some major topics in study of religion and Middle Eastern studies. May be repeated for credit with topic change. P/NP or letter grading.

**M179SL. Movement in Art, Philosophy, and Daily Life. (5)** (Same as Comparative Literature M179SL.) Seminar, three hours; fieldwork, three hours. Exploration of relation between humans and world. Only relevant output of brain, irrespective of what may or may not go on inside it, is control over movements. In living animals, sentience or consciousness exists to integrate often complex input and decide on course of action. Similarly, ownership and agency are inseparably associated with biological systems that control our movements. Movements play vital part in constructing psychosocial environment that permeates and surrounds us. Exploration of how humans and animals move, and how movement, as well as limitations of mobility, relate to personal and community identity. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor.

May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Graduate Courses

**200. Bibliography and Method of Near Eastern Languages and Literatures. (4)** Lecture, two hours. Required for MA degree. Introduction to bibliographical resources and training in methods of research in various areas of specialization offered by department. May be repeated for credit. S/U or letter grading.

**201. Study of Religion: Theory and Method. (4)** Seminar, three hours. Preparation: familiarity with at least two major world religions. Designed for advanced undergraduate and graduate students. Introduction to variety of theories and methods used in academic study of religion. In attempt to demonstrate importance that historical, cultural, and social exigencies play in development of religious traditions, discussion of theories comparatively and in their historical context, with focus on presuppositions and core concepts and implications of each theory. Letter grading.

**210. Survey of Afro-Asiatic Languages. (4)** Lecture, three hours. Survey of structures of number of representative languages from various major branches of Hamito-Semitic (Afro-Asiatic) language family. S/U or letter grading.

**C222. History, Memory, and Identity in Israel. (4)** Seminar, three hours. Israeli society was born in effort to reshape images of Jewish past and has been shaken by many debates over history, recent and ancient events, and how these are represented by historical scholarship as well as in popular media and public spaces. Struggles over image of past have become central (as in many other societies) to debates about identity in present and directions, goals, and hopes for future. Exploration of ways in which struggles over past have shaped Israeli present. Examination of historiographical debates and their reflections in range of media to make some sense of ever-changing past, ways in which it shapes political, ideological, and cultural identities in present, and where meeting points are between popular discourse and work historians do. Examination of conflicting readings of past and its representation in Israeli historiography and in shaping of Israeli collective memory and identity. Concurrently scheduled with course C122. S/U or letter grading.

**241. Folklore and Mythology of Near East. (4)** Lecture, three hours. Exploration of variety of traditions in ancient Near Eastern literature concerning creation of cosmos, origins of mankind, and boundaries between divine and human realms. Answers to questions concerning origins of evil, pursuit of wisdom, expectations for life beyond death, and quest for immortality are all sought in folklore of ancient religions. Directed readings of ancient literatures. S/U or letter grading.

**290. Seminar: Paleography. (4)** Seminar, three hours. Provides students with ability to cope with varieties of manuscripts. S/U or letter grading.

## Near Eastern Languages

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Visible Language: Study of Writing. (5)** (Same as Asian M20, Indo-European Studies M20, Slavic M20, and Southeast Asian M20.) Lecture, three hours; discussion, one hour. Consideration of concrete

means of language representation in writing systems. Earliest representations of language known are those of Near East dating to end of 4th millennium BC. While literate civilizations of Egypt, Indus Valley, China, and Mesoamerica left little evidence of corresponding earliest developments, their antiquity and, in case of China and Mesoamerica, their evident isolation mark these centers as loci of independent developments in writing. Basic characteristics of early scripts, assessment of modern alphabetic writing systems, and presentation of conceptual basis of semiotic language representation. Origins and development of early non-Western writing systems. How Greco-Roman alphabet arose in 1st millennium BC and how it compares to other modern writing systems. P/NP or letter grading.

**65. Global Time Travel. (5)** Lecture, three hours; discussion, one hour. Time travel is our most effective fictional device for asking what past was like, what future will bring, and how our present might look when viewed from other times. Though often associated with Euro-American genre of hard science fiction, time travel is global genre. Study of time travel stories, novels, television productions, and films from variety of periods, regions, and languages in order to explore anxieties genre responds to and other worlds it helps us imagine. Examination of theorists and critics whose work helps explain how time travel interacts with history, narrative, and visuality. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**CM114. Teaching and Learning of Heritage Languages. (4)** (Same as Asian CM124 and Slavic CM114.) Lecture, three hours. Consideration of issues relevant to heritage language learners (HLL) and to heritage language (HL) instruction. Readings and discussion on such topics as definitions of HLLs and HLLs; linguistic, demographic, sociolinguistic, and sociocultural profile of HLLs, particularly HL groups most represented among UCLA students; institutional and instructor attitudes toward HLLs; impact of student motivation and expectations on HL curriculum and teaching approaches; similarities and differences between HLLs and foreign language learners (FLLs) regarding teaching methods and materials; diagnostic testing and needs analysis; use of oral/aural proficiency as springboard for literacy instruction; optimization of instruction of mixed HL and FL classes. Action research component included. Concurrently scheduled with course CM214. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Graduate Courses

**CM214. Teaching and Learning of Heritage Languages. (4)** (Same as Asian CM224 and Slavic CM214.) Lecture, three hours. Consideration of issues relevant to heritage language learners (HLL) and to heritage language (HL) instruction. Readings and discussion on such topics as definitions of HLLs and HLLs; linguistic, demographic, sociolinguistic, and sociocultural profile of HLLs, particularly HL groups most represented among UCLA students; institutional and instructor attitudes toward HLLs; impact of student motivation and expectations on HL curriculum and teaching approaches; similarities and differences between HLLs and foreign language learners (FLLs) regarding teaching methods and materials; diagnostic testing and needs analysis; use of oral/aural proficiency as springboard for literacy instruction; optimization of instruction of mixed HL and FL classes. Action research component included. Concurrently scheduled with course CM114. S/U or letter grading.

**M248. Anthropology and History of Mediterranean. (4)** (Same as Anthropology M248 and History M248.) Seminar, three hours. Introduction to historical and anthropological writings about Mediterranean. Draws on variety of classic and contemporary theories, histories, and ethnographies about Mediterranean Sea. Topics include geographical and imaginary boundaries, Mediterranean honor/shame concepts, colonial and post-colonial Mediterranean, Levantinism, thalassology, Mediterraneanism, French Mediterraneans, Jewish Mediterranean, colonial and post-colonial sea and migrants and mobilities. Focus on critical history of anthropological study of Mediterranean and scholarly literature that emphasizes southern shores of Mediterranean. Letter grading.

**M287. Central Asian Studies: Discipline, Methods, Debates. (2)** (Same as Anthropology M247Q and History M287.) Seminar, two hours. Introduction to study of central Asia as practiced in humanities and social sciences disciplines. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Preparation for Teaching Language and Literature in Near Eastern Languages and Cultures. (2)** Seminar, two hours. Problems and methods of presenting literary texts as exemplary materials in teaching of language and literature in Near Eastern Languages and Cultures. Theory and classroom practice, with individual counseling and faculty evaluation of teaching assistant performances. May not be applied toward MA degree requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Semitics

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**110. Neo-Aramaic. (4)** Lecture, three hours. Grammar and reading of selected texts (folktales, homilies, songs) in modern Aramaic dialects of the Jews and Christians of Kurdistan.

**115. Syriac. (4)** Lecture, two hours. Morphology and syntax of Syriac language, introductory reading.

**130. Biblical Aramaic. (4)** Lecture, three hours. Requisites: Hebrew 102A, 102B, 102C. Grammar of biblical Aramaic and reading of texts.

**M140A. Elementary Akkadian. (4)** (Formerly numbered 140A.) (Same as Ancient Near East M141.) Lecture, three hours. Elementary grammar and reading of texts in standard Babylonian. P/NP or letter grading.

**140B. Elementary Akkadian. (4)** Lecture, three hours. Elementary grammar and reading of texts in standard Babylonian.

**141. Advanced Akkadian. (4)** Lecture, three hours. Advanced Akkadian syntax and grammar; reading of Akkadian historical and literary texts. May be repeated for credit. P/NP or letter grading.

**142. Akkadian Literary Texts. (4)** Lecture, three hours. Selected readings from Akkadian myths and epics, with introduction to historical tradition of works and their literary structure. May be repeated for credit. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Semitics. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged

between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Semitics. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**210. Ancient Aramaic Dialects. (4)** Lecture, three hours. Requisite: course 130. Reading of surviving inscriptions and papyri. Texts include Old Aramaic inscriptions, Egyptian Aramaic texts, Qumran Aramaic, and Targumic Aramaic. May be repeated for credit. S/U or letter grading.

**215B. Syriac. (4)** Lecture, two hours. Morphology and syntax of Syriac language; readings in Syriac translation of Bible and Syriac literature. May be repeated for credit. S/U or letter grading.

**220A-220B. Ugaritic. (4-4)** Lecture, two hours. Requisites: Hebrew 102A, 102B, 102C. Study of Ugaritic language and literature. Only course 220B may be repeated for credit. S/U or letter grading.

**225. Phoenician. (4)** Lecture, two hours. Requisites: Hebrew 102A, 102B, 102C. Study of Phoenician language and inscriptions. May be repeated for credit. S/U or letter grading.

**230. Seminar: Northwest Semitic Languages and Literatures. (4)** Seminar, two hours. May be repeated for credit. S/U or letter grading.

**240. Seminar: Akkadian Language. (4)** Seminar, two hours. Readings of texts from various dialects of Akkadian; selected problems in linguistic analysis of Akkadian dialects. May be repeated for credit. S/U or letter grading.

**240X. Seminar: Akkadian Language. (1)** Seminar, two hours. Readings of texts from various dialects of Akkadian; selected problems in linguistic analysis of Akkadian dialects. Course for students who participate regularly in class meetings but without the homework required in course 240. May be repeated for credit. S/U grading.

**241. Seminar: Akkadian Literature. (4)** Seminar, two hours. Readings of texts from various Akkadian literary genres; selected problems in literary history and stylistic analysis. May be repeated for credit. S/U or letter grading.

**241X. Seminar: Akkadian Literature. (1)** Seminar, two hours. Readings of texts from various Akkadian literary genres; selected problems in literary history and stylistic analysis. Course for students who participate regularly in class meetings but without the homework required in course 241. May be repeated for credit. S/U grading.

**280A. Seminar: Comparative Semitics. (4)** Seminar, two hours. S/U or letter grading.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

## Turkic Languages

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor.

May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101A-101B-101C. Elementary Turkish. (5-5-5)** Lecture, five hours. Course 101A is requisite to 101B, which is requisite to 101C. Grammar, reading, conversation, and elementary composition drills. P/NP or letter grading.

**102A-102B-102C. Advanced Turkish. (4-4-4)** Lecture, five hours. Requisites: courses 101A, 101B, 101C. Continuing study of grammar, conversation, and composition. Readings in modern literature and social science texts. May be repeated for credit. P/NP or letter grading.

**111A-111B-111C. Elementary Uzbek. (4-4-4)** Lecture, three hours; laboratory, two hours. Elementary grammar, reading, and composition exercises; elementary conversation.

**112A-112B-112C. Advanced Uzbek. (4-4-4)** Lecture, three hours; laboratory, two hours. Descriptive Uzbek grammar, reading, and analysis of Uzbek literary and folkloric texts. High-style composition and conversation.

**M115A-M115B-M115C. Elementary Azeri. (4-4-4)** (Same as Iranian M115A-M115B-M115C.) Lecture, five hours. Knowledge of Russian, Turkish, and Iranian helpful. Grammatical competence at elementary level; knowledge of basic facts of Azeri grammar; reading competence with help of dictionary; ability to write simple compositions; basic conversational skill. P/NP or letter grading.

**116A-116B-116C. Advanced Azeri. (4-4-4)** Lecture, three hours; discussion, one hour; laboratory, one hour. Preparation: placement test. Proficiency-based course in descriptive Azeri grammar. Reading and analysis of Azeri literary and folkloric texts in new writing system. High-style composition and conversation. May be repeated for credit. Letter grading.

**160. Turkish Tradition. (4)** Lecture/discussion. Preparation: entrance examination. Survey of cultural history of the Turks, as seen primarily through their literature, from their early history to the present.

**165. Islamic Literary Heritage of Central Asia. (4)** Lecture, two hours; discussion, one hour. Systematic survey of Islamic documents produced in Turkish and Persian in Central Asia, with reading of primary sources in English translation. Study of special characteristics of Central Asian Islam.

**170. Turco-Mongolian Nomadic Empires. (4)** Lecture, three hours. Required of students in Turkic program. Survey of history of Turkic and Mongolian dominions from the 3rd century BC to AD 19th century (Hsiung-nu, Hsien-pi, Juan-Juan, T'u-Chueh, Uyghur, Khitan, Karakhanid, Seljuq, Kara-Khitay, Khorazmian, Jengiz-Khanite).

**180. Modern Turkic Languages and Peoples. (4)** Lecture, three hours. Required of students in Turkic program and recommended for students in Soviet studies. Ethnic and linguistic survey of the Turkic peoples.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers,

or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Turkic. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Turkic. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**210A. Readings in Ottoman I. (4)** Lecture, three hours. Examination of printed texts in Ottoman from 19th and 20th centuries to improve student competence to read, transliterate, and translate Ottoman texts. Readings include selections from newspapers, almanacs, travel books, and literary and historical texts. S/U or letter grading.

**211. Ottoman Diplomats. (4)** Lecture, three hours. Requisites: courses 210A, 210B, 210C. Organization and contents of Ottoman archives; reading and discussion of documents and registers. Introduction to use of Ottoman archive materials as a source for historical research.

**596. Directed Individual Study. (2 to 8)** Tutorial, to be arranged. May be repeated for credit. S/U or letter grading.

**597. Examination Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. PhD Dissertation Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

# NEUROBIOLOGY

*David Geffen School of Medicine*

73-235 Center for Health Sciences  
Box 951763  
Los Angeles, CA 90095-1763

**Neurobiology**

310-825-8153

**Department e-mail**

**Paul E. Micevych, PhD, Chair**

**James W. Bisley, PhD, Vice Chair**

**Samantha J. Butler, PhD, Vice Chair,  
Equity, Diversity, and Inclusion**

**Felix E. Schweizer, PhD, Vice Chair,  
Education**

## Overview

The Department of Neurobiology is a premier research department and a leading force in neuroscience discovery and education at UCLA and worldwide. Department faculty with diverse research backgrounds in cellular and molecular biology, psychology, and engineer-

ing; utilize the most sophisticated technologies available to work in concert with colleagues throughout UCLA and the world to enhance the understanding of the brain and its role in health and disease.

**Neurobiology faculty** information is available from the department.

## Medical History

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**107A-107B. Historical Development of Medical Sciences. (4-4)** Lecture, three hours. Major contributions of medicine and medical personalities from earliest times. P/NP or letter grading. **107A.** Contributions of medicine and medical personalities from earliest times through 1650. **107B.** Subject in the period from 1650 through the 19th century. Illustrated lectures, class discussion, and required readings from selected texts.

**M169. History of Neurosciences. (4)** (Same as Neurobiology M169.) Lecture, one hour; discussion, two hours. Development of neurosciences, especially neuroanatomy and neurophysiology, from Enlightenment era through latter 20th century. Emphasis on fundamental nerve functions, cell communication, and technological, conceptual, and cultural influences that have shaped understanding of brain and nervous system. P/NP or letter grading.

### Graduate Course

**596. Directed Individual Studies in Medical History. (2 to 12)** Tutorial, to be arranged. Investigation of subjects in medical history selected by students with advice and direction of instructor. Individual reports and conferences. S/U or letter grading.

## Neurobiology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M169. History of Neurosciences. (4)** (Same as Medical History M169.) Lecture, one hour; discussion, two hours. Development of neurosciences, especially neuroanatomy and neurophysiology, from Enlightenment era through latter 20th century. Emphasis on fundamental nerve functions, cell communication, and tech-

nological, conceptual, and cultural influences that have shaped understanding of brain and nervous system. P/NP or letter grading.

**M171. Variable Topics Research Seminars: Contemporary Biology. (2)** (Same as Physiological Science M171.) Seminar, two hours. Limited to undergraduate fellows in Integrated and Interdisciplinary Undergraduate Research Program. Presentations of scientific data from primary research articles and from students' own research. May be repeated for credit. P/NP grading.

**197. Individual Studies in Neurobiology. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned readings and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research in Neurobiology. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Studies in neuroscience and related subject areas appropriate for training of particular students, which includes reading assignments or laboratory work leading to final oral or written report. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M200F. Cellular Neurophysiology. (4)** (Same as Neuroscience M202 and Physiological Science M202.) Lecture, three hours; discussion, two hours. Prerequisites: Physiological Science 111A (or M180A or Physics 5C), 166. Advanced course in cellular physiology of neurons. Action and membrane potentials, channels and channel blockers, gates, ion pumps and neuronal homeostasis, synaptic receptors, drug-receptor interactions, transmitter release, modulation by second messengers, and sensory transduction. Letter grading.

**M200G. Biology of Learning and Memory. (4)** (Same as Neuroscience M220 and Psychology M208.) Lecture, four hours. Molecular, cellular, circuit, systems, neuroanatomy, theory, and models of learning and memory. Cross-disciplinary focus on learning and memory to provide integrative view of subject that emphasizes emerging findings that take advantage of novel groundbreaking models. Letter grading.

**225. Functional Organization of Visual System. (2)** Seminar, three hours. Preparation: basic neuroscience course. Recommended: neuroanatomy, neurophysiology, and/or neural systems courses. Designed for neuroscientists, cell biologists, and psychologists. Basic organizational, physiological, and functional principles of visual system and how visual information is processed at different levels of nervous system. Structure, microcircuitry organization and function of retina, central visual nuclei, and primary cortical areas mediating visual behavior. S/U or letter grading.

**M255. Seminar: Neural and Behavioral Endocrinology. (2)** (Same as Physiological Science M255 and Psychology M294.) Seminar, one hour; discussion, one hour. Topics include hormonal biochemistry and pharmacology. Hypothalamic/hypophyseal interactions, both hormonal and neural. Structure and function of hypothalamus. Hormonal control of reproductive and other behaviors. Sexual differentiation of brain and behavior. Stress: hormonal, behavioral, and neural aspects. Aging of reproductive behaviors and function. Letter grading.

**270. Joint Seminar: Neuroscience Lectures. (1)** Seminar, one hour. Formal lectures on current research topics in neuroscience by speakers from national, international, and local neuroscience communities. S/U grading.

## NEUROLOGY

David Geffen School of Medicine

C-153 Reed Neurological Research Center  
Box 951769  
Los Angeles, CA 90095-1769

### Neurology

310-825-5521

S. Thomas Carmichael, Jr., MD, PhD,  
*Chair*

Christopher DeGiorgio, MD, *Vice Chair*,  
*Olive View-UCLA*

Charles C. Flippen II, MD, *Vice Chair*,  
*Education*

Jason D. Hinman, MD, PhD, *Vice Chair*,  
*Research*

Mario F. Mendez, MD, PhD, *Vice Chair*,  
*VA Greater Los Angeles Healthcare System*

P. Leia Nghiemphu, MD, *Vice Chair*,  
*Academic Affairs*

Martina H. Wiedau, MD, *Vice Chair*,  
*Clinical Affairs*

Jeffrey L. Saver, MD, *Senior Associate Vice Chair*,  
*Clinical Research*

## Overview

Neurology is the medical science dealing with the normal and diseased nervous system. Neurological disorders are often associated with significant disability, morbidity, and mortality. Their higher incidence in association with greater longevity of the population, increased awareness, improved diagnostic methods, and other factors place neurological disorders among the major medical problems today. The Department of Neurology and the Reed Neurological Research Center provide means for a coordinated basic science and clinical research approach to neurological disorders, patient care, and neurological education.

The department instructs medical students throughout the four years. Emphasis in the first year is on basic aspects of neuroanatomy, chemistry, and physiology; in the second year, neurological history taking and neurological examination of afflicted patients are stressed. The third year consists of a clerkship, and the fourth year provides electives in neurology, including an advanced clinical clerkship.

Graduate students and postdoctoral candidates are trained in both the basic and clinical laboratories.

For more details on the Department of **Neurology** and courses offered, see the department website.

**Neurology faculty** information is available from the department.

## Neurology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**199. Directed Research in Neurology. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## NEUROSCIENCE, UNDERGRADUATE

*Interdepartmental Program  
College of Letters and Science*

1321 Gonda Center  
Box 951761  
Los Angeles, CA 90095-1761

### Neuroscience Undergraduate IDP

310-206-2349

### E-mail contact

Stephanie A. White, PhD, *Chair*  
Kate M. Wassum, PhD, *Vice Chair*

## Faculty Committee

Scott H. Chandler, PhD (*Integrative Biology and Physiology*)

David L. Glanzman, PhD (*Integrative Biology and Physiology, Neurobiology*)

Paul E. Micevych, PhD (*Neurobiology*)

Patricia E. Phelps, PhD (*Integrative Biology and Physiology*)



Mayumi L. Prins, PhD (*Neurosurgery*)  
 Kate M. Wassum, PhD (*Psychology*)  
 Stephanie A. White, PhD (*Integrative Biology  
 and Physiology*)

## Overview

Neuroscience seeks to understand the brain in health and in disease. Topics of fundamental interest include perception, cognition, learning, memory, motor control, and regulation of body function. The undergraduate interdepartmental program seeks to explore the principles and concepts of this broad range of nervous system function at many levels of analysis, including molecular, cellular, synaptic, network, computational, and behavioral.

Information on the graduate program in this discipline can be found in the [Neuroscience graduate interdepartmental program](#) section.

## Undergraduate Major

### Neuroscience BS

#### Capstone Major

The Neuroscience major is a designated capstone major. Undergraduate students have the option of conducting two terms of independent research within a faculty laboratory, applying to participate in Project Brainstorm or DOPA-Team, or completing an advanced laboratory methods course with a series of research modules. Through their capstone work, students demonstrate ability to generate testable scientific hypotheses and develop a research plan to test such hypotheses; work on research projects independently and in small groups; evaluate and discuss primary literature and the validity of hypotheses generated by others; communicate effectively orally and in writing; and demonstrate creative thinking.

#### Learning Outcomes

The Neuroscience major has the following learning outcomes:

- Generation of testable scientific hypotheses and development of a research plan to test such hypotheses
- Work on research projects independently and in small group settings
- Evaluation and discussion of primary literature
- Evaluation of the validity of hypotheses
- Effective written and oral communication
- Demonstrated creative thinking

#### Entry to the Major

##### Transfer Students

Transfer applicants to the Neuroscience major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, one semester of organic chemistry

with laboratory, and one statistics course. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

#### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, 14CL, and 14D, or 20A, 20B, 20L, 30A, 30AL, 30B, and 30BL; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Statistics 10 or 13, or Mathematics 31A or 31AL, 31B, 32A, and Statistics 10 or 13; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

#### The Major

The Neuroscience major consists of 10 courses (approximately 43 units). Consult respective department or program sections for course descriptions.

*Required Core:* Neuroscience M101A (with grade of C– or better), M101B, M101C, 102, Chemistry and Biochemistry 153A. Physiological Science 111A and Psychology 115 cannot be substituted for Neuroscience M101A.

*Elective Options:* One course from each of the following three options:

*Behavioral and Cognitive Neuroscience:* Disability Studies M139, Music Industry M103, Neuroscience M119L, CM123, 140, 142, M161, M170, C172, M176, C177, 178, 179, M187, 191A, Physiological Science M106, CM123, C130, C144, 175, M176, Psychiatry 174, 176, M182, Psychology 110, 112A, 112B, 112C, 112E, 118, 119A through 119F, 119I, 119J, M119L, 119M, M119O, 119U, M119X, 120A, 120B, 124A, 124B, 124C, 124D, 124K, 127B, 137A, M139, 161, 164, or M166.

*Molecular, Cell, and Developmental Neuroscience:* Neuroscience M145, C177, 180, 181, 182, 186, M187, 191C, Physics C186, Physiological Science M106, 121, C126, C127, M145, 146, 147, 174, 175, Psychology 119A, 162, or M166.

*Systems and Integrative Neuroscience:* Neuroscience M119N, CM123, M145, C151, M176, C177, M187, 191B, Physics C186, Physiological Science M106, CM123, C126, C127, C130, M135, 138, C144, M145, 146, 147, 173, M176, 177, Psychology 112B, 112C, 119A, 119I, 119J, 119M, M119N, 119Q, M119X, 119Y, 120B, 124C, 137A, 162, 164, or M166.

*Capstone Research Options:* (1) Neuroscience 101L, M116A, Psychology M116A, or 116B, (2) Neuroscience C177 and 192CX (for DOPA-Team) or two quarters of Neuroscience 192BX (for Project Brainstorm), or (3) Neuroscience 198A and 198B, or 199A and 199B.

#### Honors Program

The honors program provides exceptional Neuroscience majors with the opportunity to do research culminating in an honors thesis.

## Policies

### Preparation for the Major

Each core curriculum course must be passed with a grade of C– or better, and all courses must be completed with an overall grade-point average of 2.0 or better. Students receiving grades below C– in two core curriculum courses, either in separate courses or repetitions of the same course, are subject to dismissal from the major.

### The Major

No more than eight courses may be from any one department. A maximum of 8 units of Neuroscience 198 or 199 in any combination) may be applied toward the major. Each course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in all upper-division courses taken for the major.

### Capstone

Students who select the Neuroscience 101L, M116A, Psychology M116A, or 116B capstone research option must take four upper-division electives, with at least one from each of the three elective options. Students who select the Neuroscience C177 and 192CX, two quarters of 192BX, 198A and 198B, or 199A and 199B options must take three upper-division electives, one from each elective option.

### Honors Program

Majors who have completed all preparation courses with a grade-point average of 3.0 or better and an overall GPA of 3.2 or better may apply for admission to the honors program. Applications and program requirements are available in the Neuroscience Undergraduate Office. Students must submit the application before beginning their upper-division honors requirements. After completion of all requirements and with the recommendation of the faculty sponsor and a second reader of the thesis, the chair confers honors at graduation.

## Undergraduate Minor

### Neuroscience Minor

The Neuroscience minor is designed to allow students in other majors an opportunity to explore the interdisciplinary field of neuroscience in a structured and rigorous way, while pursuing a major field of study in another discipline at the same time.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and a 2.5 GPA in the requisite courses for Neuroscience M101A and M101B.

### The Minor

Non-science majors wishing to minor in Neuroscience should be aware that preparation courses in chemistry, life sciences, and physics are requisites to the upper-division course requirements.

*Required Upper-Division Courses (approximately 31 units):* Neuroscience M101A (with grade of C– or better), M101B, M101C (5 units each) and four elective courses selected from 101L, 102, 199A and 199B, and from any of the three elective options listed under the Neuroscience major.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Neuroscience

See the [Neuroscience graduate interdepartmental program](#) for graduate courses.

### Lower-Division Courses

**10. Brain Made Simple: Neuroscience for 21st Century. (4)** Lecture, four hours. Preparation: high school background in either biology or chemistry. Not open for credit to students with credit for course M101A (or Molecular, Cell, and Developmental Biology M175A or Physiological Science M180A or Psychology M117A) or Physiological Science 111A or Psychology 115. General overview and introduction to most exciting and fundamental topics encompassing field of neuroscience. P/NP or letter grading.

**17. Science of Music. (4)** Lecture, three hours; discussion, one hour. General overview of basic principles of neuroscience, cognitive psychology, and psychoacoustics to relation of music perception. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to Neuroscience Methods: Art and Science of Studying Brain. (4)** Lecture, four hours; discussion, 90 minutes. Preparation: high school background in either biology or chemistry. General overview of field of neuroscience to serve as introduction to Neuroscience major. Topics covered include brief history of field, basic neurophysiology and neuroanatomy, research methods, experimental design, data analysis, and career prospects. May not be applied toward elective requirements for major. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and en-

rolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M101A. Neuroscience: From Molecules to Mind—Cellular and Systems Neuroscience. (5)** (Same as Molecular, Cell, and Developmental Biology M175A, Physiological Science M180A, and Psychology M117A.) Lecture, four hours; discussion, 90 minutes. Requisites: Chemistry 14C or 30A (14C may be taken concurrently), Life Sciences 7C, Physics 1B or 1BH or 5C or 6B. Students must receive grade of C– or better to proceed to next course in series. Cellular neurophysiology, membrane potential, action potentials, and synaptic transmission. Sensory systems and motor system; how assemblies of neurons process complex information and control movement. P/NP or letter grading.

**M101B. Neuroscience: From Molecules to Mind—Molecular and Developmental Neuroscience. (5)** (Same as Molecular, Cell, and Developmental Biology M175B, Physiological Science M180B, and Psychology M117B.) Lecture, four hours; discussion, 90 minutes. Requisites: course M101A (with grade of C– or better), Life Sciences 7C. Molecular biology of channels and receptors: focus on voltage dependent channels and neurotransmitter receptors. Molecular biology of supramolecular mechanisms: synaptic transmission, axonal transport, cytoskeleton, and muscle. Classical experiments and modern molecular approaches in developmental neurobiology. P/NP or letter grading.

**M101C. Neuroscience: From Molecules to Mind—Behavioral and Cognitive Neuroscience. (5)** (Same as Molecular, Cell, and Developmental Biology M175C, Physiological Science M180C, and Psychology M117C.) Lecture, four hours; discussion, 90 minutes. Requisite: course M101A with grade of C– or better. Neural mechanisms underlying motivation, learning, and cognition. P/NP or letter grading.

**101L. Neuroscience Laboratory. (4)** Lecture, two hours; laboratory, three hours. Requisites: courses M101A, M101B (M101B may be taken concurrently). Not open for credit to students with credit for Psychology 116. Introduction to laboratory methods in neuroscience. Laboratory exercises range from molecular and cell biological to behavioral. Hands-on experience with important methodology and experimental approaches in neuroscience. Letter grading.

**102. Introduction to Functional Anatomy of Central Nervous System. (4)** Lecture, three hours; laboratory, 90 minutes. Requisite: Life Sciences 2 or 7C. Corequisite: course M101A. Not open to freshmen. Overview of human nervous system, brain development, anatomy and function, pathology. Introduction to brain circuits involved in fear and anxiety, memory, sensory, motor activities. P/NP or letter grading.

**M116A. Behavioral Neuroscience Laboratory. (4)** (Same as Psychology M116A.) Lecture, one hour; laboratory, three hours. Requisites: courses M101A and M101B (M101B may be taken concurrently), or Psychology 10, 100A, 100B, and 115. Not open for credit to students with credit for Psychology 116B. Designed for Psychobiology, Psychology, and Neuroscience majors. Laboratory experience with various topics in behavioral neuroscience. Hands-on experience with important methodology and experimental approaches in neuroscience. P/NP or letter grading.

**M119L. Human Neuropsychology. (4)** (Same as Psychology M119L.) Lecture, three hours. Recommended requisites: courses M101A and M101C (or Psychology 115), Psychology 120A or 120B. Designed for juniors/seniors. Survey of experimental and clinical human neuropsychology; neural basis of higher cognitive functions. P/NP or letter grading.

**M119N. Visual System. (4)** (Same as Psychology M119N.) Lecture, three hours. Requisite: course M101A or Physiological Science 111A or Psychology 115. Ability to image and analyze visual world is truly remarkable feat. Coverage of anatomy and physiology of visual processing from retina to visual cortex through lectures, extensive reading, and discussions. P/NP or letter grading.

**CM123. Neurobiology of Sleep. (4)** (Same as Physiological Science CM123.) Lecture, three hours; discussion, one hour. Requisites: courses M101A and M101B or Physiological Science 111A and 111B or consent of instructor. Detailed look into science of sleep. Cellular and molecular mechanisms of falling asleep, many discrete brain structures involved in control of sleep wakefulness, and homeostatic regulation of sleep. How our sleep needs shaped by our evolutionary history, age, and gender. Latest insights into question of function of sleep, critical role sleep plays in memory formation and, close association between sleep and metabolism. Sleep disorders are considered as they provide insights into mechanisms underlying sleep. For background on science of sleep and circadian rhythms, completion of Physiological Science C126 is highly recommended. Concurrently scheduled with course CM223. Letter grading.

**M135. Dynamical Systems Modeling of Physiological Processes. (5)** (Same as Physiological Science M135.) Lecture, four hours; laboratory, two hours. Examination of art of making and evaluating dynamical models of physiological systems and of dynamical principles inherent in physiological systems. Letter grading.

**140. Brain Injury and Recovery of Function. (4)** Seminar, four hours. Requisite: course 102 or Psychology 116A or 116B. Inquiry into what recovery from brain injury specifically means, and if all recovery is same. Addresses history of how science evolved from basic localization of function to understanding more about brain functional recovery. Increases awareness of limitations and surprising potential of brain to adapt to adverse stimuli of brain injury. Discussion of interesting cases and experiments that have molded current understanding of brain's potential for recovery. P/NP or letter grading.

**142. Neurophilosophy: Introduction and Assessment from Neuroscience Perspective. (4)** Lecture, three hours. Requisite: course M101A. Overview of philosophical issues and theories surrounding nature of mind and its relationship with body. Examination of case for relevance of current theoretical and experimental results in neuroscience and cognitive science to philosophy of mind. In particular, focus on variety of approaches to understanding and explaining human consciousness and current lively debate about whether scientific understanding of it is possible. Neurophilosophy is relatively new interdisciplinary subject. Study is approached as two-way flow of information, from neuroscience to philosophy and vice versa. Examination of traditional philosophical problems given input of recent neuroscience findings as well as applying philosophical problem-solving approaches to determine which scientific projects related to human consciousness are genuinely new and interesting and which have potential to yield conceptually novel answers. P/NP or letter grading.

**M145. Neural Mechanisms Controlling Movement. (5)** (Same as Physiological Science M145.) Lecture, four hours. Requisite: course M101A or Physiological Science 111A or M180A. Examination of central nervous system organization required for production of complex movements such as locomotion, mastication, and swallowing. Letter grading.

**150. Biotechnology in Neuroscience. (4)** Lecture, two and one half hours. Requisites: courses M101A, M101B. Preparation: background in biology and biochemistry. Designed for third- and fourth-year Neuroscience majors. Science advances through development and adaptation of new tools and technologies. Covers commonly used techniques in neuroscience research, from classic RT-PCR, immunohistochemistry to newly emerged optogenetics, single cell RNAseq, and CRISPR. Students gain better understanding of various methods in field today and tools to advance their own potential research in future. Letter grading.

**C151. Computational Neuroscience for Interdisciplinary Scientists. (4)** Lecture, two hours; laboratory, one hour. Requisites: course M101A or Psychology 115; Life Sciences 30A and 30B, or Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Life Sciences 40 or Psychology 100A or Statistics 10 or 13. Designed for students in both experimental and computational tracks to acquire significant breadth and depth in

computational neuroscience. Highly interdisciplinary study in computational neuroscience. Integrates data-driven modeling, simulations, and analyses of neural dynamics to train students in hypothesis-driven approach to computational modeling. Students can immediately apply acquired knowledge and skills in research or industry settings. Concurrently scheduled with course C251. P/NP or letter grading.

**M161. Personal Brain Management. (4)** (Same as Psychiatry M182.) Seminar, four hours. Basic overview of brain function and consideration of some management methods that exist already, and what future may hold. New methods for predicting our own futures and modeling what if scenarios that might alter risks and benefits of different courses of action, based on individual genetic background and other elements of personal history and environmental exposures. Introduction to key principles from science of behavior change, illustrating how important health-related behavioral habits are and how difficult these can be to change and why. Coverage of series of topics that center on personal enhancement of well-being through consideration of stress management, long-term goal and value identification, mapping of long-term goals onto immediate actions, reinforcement learning, meditation, neurofeedback, and time management. Critical appraisal of tools to help students distinguish scientifically validated procedures. Offered in summer only. Letter grading.

**M170. Music, Mind, and Brain. (4)** (Same as Music Industry M103.) Seminar, three hours; outside study, nine hours. Multidisciplinary approach to understanding brain mechanisms mediating music perception, performance, and cognition. Students' natural interest in music serves as springboard for learning basic concepts about theories of mind, and how brain works to determine perception of harmony and rhythm, emotion and meaning in music, and musical creativity. Designed to help students understand methodologies currently used to investigate brain-behavior correlates. Broad understanding of research topics in cognitive neuroscience; introduction to fundamental principles in neurophysiology, psychophysiology, and neuroanatomy. Letter grading.

**C172. Neuroimaging and Brain Mapping. (4)** Lecture, three hours. Requisite: course M101A (or Molecular, Cell, and Developmental Biology M175A or Physiological Science M180A or Psychology M117A) or Physiological Science 111A or Psychology 115. Strongly recommended: course 102. Theory, methods, applications, assumptions, and limitations of neuroimaging. Techniques, biological questions, and results. Brain structure, brain function, and their relationship discussed with regard to imaging. Concurrently scheduled with course CM272. Letter grading.

**M176. Auditory Neuroscience of Speech Perception and Vocal Communication. (4)** (Same as Physiological Science M176.) Lecture, two and one half hours; discussion, 90 minutes. Requisite: course M101A or Physiological Science 107. Interdisciplinary approach to understanding how humans and other animals communicate emotion and meaning using sound. Weekly research topics in disciplines of systems neuroscience, cognitive neuroscience, psychophysics, and psycholinguistics. Emphasis on fundamental principles in neurophysiology, neuroanatomy, neuroimaging, psychology, and neurology. Letter grading.

**C177. Drugs of Abuse: Translational Neurobiology. (4)** Lecture, four hours. Requisite: course M101A. Course ranges from synapse to society. Provides intensive didactic on current neuroscientific basis for understanding substance abuse and blends that material with relevant topics such as epidemiology, co-occurring disorders, treatment options, prevention, and public policies, with emphasis on communication of course materials to general public. Concurrently scheduled with course C277. Letter grading.

**178. Human Electroencephalography and Evoked Potentials in Research and Clinical Diagnosis. (4)** Seminar, four hours. Enforced prerequisite: course M101A. Not open for credit to students with credit for course 191A, seminar 1. Emphasis on human electroencephalogram (EEG) and various forms of sensory-

evoked potentials. Introduction to number of experimental paradigms that allow for recording of different brain signals from brainstem to cortex. Letter grading.

**179. Clinical Neuroscience: New Concepts in Neurological Disorders. (4)** Lecture, four hours. Enforced prerequisite: course M101A. Introduction to neurological diseases. Description of diseases from clinical perspective, description of disorder, dealing with clinical population, and discussion of treatments and underlying causes. Mechanisms and new treatments. Letter grading.

**180. Genetic, Molecular, and Genomic Approaches to Neural Development and Disease. (4)** Seminar, three hours. Enforced prerequisites: courses M101A, M101B. Not open for credit to students with credit for course 191C, seminar 1. In-depth study of genetic, molecular, and genomic approaches to studying nervous system development and disease. Overview of current technologies used to generate mouse models for genetic and phenotypic analysis. Review of techniques for studying development and disease. Integrative genomic approaches for identifying and characterizing gene(s) involved in these processes. Emphasis on mouse models, but other model organisms considered as well. Letter grading.

**181. Cellular and Molecular Mechanisms of Learning and Memory. (4)** Seminar, four hours. Enforced prerequisite: course M101A. Cellular models of learning and memory. Genetic and molecular approaches to learning and memory. Learning and memory deficits in neuropsychiatric diseases. LTP and LTD models. Letter grading.

**182. Pharmacology of Drugs of Abuse. (4)** Seminar, four hours. Enforced prerequisite: course M101A. Not open for credit to students with credit for course 191A, seminar 3. Pharmacology of stimulants, depressants, hallucinogens, and opioids. Discussion of how drugs interact with central nervous system and produce dependence, addiction, and chronic toxic affects. Letter grading.

**186. Neural Stem Cells: Biology, Diseases, and Therapies. (4)** Lecture, two and one half hours. Preparation: background in biology and biochemistry. Enforced prerequisites: courses M101A, M101B. Designed for third- and fourth-year Neuroscience majors. Comprehensive coverage of stem cells of nervous system during development and adulthood, involvement of stem cells in diseases (e.g., brain tumors, Alzheimer's, Parkinson's), and use of stem cells for therapy. P/NP or letter grading.

**M187. Neurobiology of Bias and Discrimination. (4)** (Same as Physiological Science M106 and Psychology M166.) Lecture, four hours. Limited to junior/senior neuroscience, physiological science, and psychology students. Exploration of aspects of mammalian brain function that generate preference, bias, and discrimination. Consideration of research at multiple levels of analysis from genetics to neural circuits to behavior. Discussion of societal implications of these research findings, including their relevance to public policies and criminal justice system. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A-191B-191C. Variable Topics Research Seminars: Neuroscience. (4-4-4)** Seminar, three hours. Topics on one or more aspects of neuroscience. Reading, discussion, and development of culminating project. May be applied as elective only in specific area of group 2. Each course may be repeated once for credit. P/NP or letter grading. **191A.** Behavioral and Cognitive Neuroscience. Requisite: course M101A or Physiological Science 111A. **191B.** Systems and Integrative Neuroscience. Requisite: course M101A or Physiological Science 111A. **191C.** Molecular, Cell, and Developmental Neuroscience. Enforced prerequisite: course M101B.

**191H. Honors Seminars: Neuroscience. (4)** Seminar, four hours. Preparation: one statistics course (Statistics 10 or equivalent). Limited to neuroscience honors program students. Instruction in principles of scientific method, ethics, and written and oral communication; critique of current journal articles and research projects. Presentation of individual research. May not be applied toward elective requirements for major. Must be taken during Winter Quarter of academic year that students enroll in courses 198A and 198B. Letter grading.

**192A. Practicum in Neuroanatomy for Undergraduate Assistants. (2)** Seminar, three hours; laboratory, one hour. Requisites: courses M101A and 102, with grades of A. Limited to senior Neuroscience majors. Training and supervised practicum in neuroanatomy for undergraduate assistants. Students assist faculty members and graduate teaching assistants in laboratory only. May not be applied toward elective requirements and may not be repeated for credit. P/NP or letter grading.

**192BX. Project Brainstorm: Neuroscience K-12 Outreach. (4)** (Formerly numbered 192B.) Seminar, one hour; fieldwork, three hours. Limited to juniors/senior Neuroscience majors selected for Project Brainstorm Capstone. Completion of this course in winter and spring quarters is required for successful completion of Project Brainstorm Capstone. Course to be supervised by faculty and teaching assistant advisers. Project Brainstorm is K-12 science education outreach program of Brain Research Institute (BRI) and Neuroscience PhD and undergraduate programs that stimulates interest in science for children and young adults in grades K-12 by providing hands-on learning experiences that emphasize function and importance of brain. Students are expected to prepare age-appropriate lesson plans to be used in Project Brainstorm classroom visits. Students meet on regular basis with supervisors and provide periodic reports of their experience. May be repeated once for credit. Letter grading.

**192CX. Drug Abuse and Society: Conveying Concepts to High School Students. (4)** (Formerly numbered 192C.) Seminar, four hours (seven weeks); fieldwork, four hours (three weeks). Enforced prerequisites: courses M101A, C177. Limited to junior/senior Neuroscience majors selected for DOPA Team capstone option. Preparation of students to give accurate, knowledgeable, and age-appropriate lectures in area of drug abuse to students at local high schools. Designed as followup to course C177 where students learned didactic material on mechanisms of action and translational aspects of drugs of abuse. Students meet on regular basis with supervisors and provide periodic reports of their experience. Letter grading.



**193. Journal Club Seminars: Current Research in Brain Development and Regeneration.** (1) Seminar, one hour. Requisite: course M101B. Limited to undergraduate students. Review and discussion of recent research papers that make potential breakthroughs in understanding of brain development and regeneration. May be repeated for credit. P/NP grading.

**198A. Honors Research in Neuroscience.** (4) Tutorial, 12 hours minimum. Requisites: courses 99, M101A. Limited to neuroscience honors program students. Directed independent research involving extensive reading and development of honors thesis or comprehensive project under direct supervision of faculty member. For departmental honors, students must also take course 191H. Maximum of 8 units of courses 198A, 198B, 199 may be applied toward major. Individual contract required. In Progress grading (credit to be given only on completion of course 198B).

**198B. Honors Research in Neuroscience.** (4) Tutorial, 12 hours minimum in laboratory. Requisite: course 198A. Continued reading and research that culminate in honors thesis under direct supervision of faculty member. For departmental honors, students must also take course 191H. Maximum of 8 units of courses 198A, 198B, 199 may be applied toward major. Individual contract required. Letter grading.

**199A. Directed Research in Neuroscience.** (4) Tutorial, 12 hours minimum. Enforced requisites: courses 99, M101A. Limited to junior/senior Neuroscience majors and minors with grades of B (3.0) or better. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. Maximum of 8 units of courses 198A, 198B, 199A, 199B may be applied toward major. Individual contract required. In Progress grading (credit to be given only on completion of course 199B).

**199B. Directed Research in Neuroscience.** (4) Tutorial, 12 hours minimum. Enforced requisite: course 199A. Limited to junior/senior Neuroscience majors and minors with grades of B (3.0) or better. Continued supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. Maximum of 8 units of courses 198A, 198B, 199A, 199B may be applied toward major. Individual contract required. Letter grading.

**199C. Continued Directed Research in Neuroscience.** (4) Tutorial, 12 hours minimum in laboratory. Enforced requisite: course 198B or 199B. Limited to junior/senior Neuroscience majors and minors with grades of B (3.0) or better. Continued reading and research that culminate in report under direct supervision of faculty mentor. May not be applied toward major. May be repeated for credit. Individual contract required. Letter grading.

## NEUROSCIENCE, GRADUATE

Interdepartmental Program  
David Geffen School of Medicine

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Box 951761  
Los Angeles, CA 90095-1761

Neuroscience Graduate IDP  
310-825-8153

Program e-mail

Felix E. Schweizer, PhD, *Chair*  
Thomas J. O'Dell, PhD, *Vice Chair*

## Faculty Committee

Hugh T. Blair, PhD (*Psychology*)  
Dean V. Buonamano, PhD (*Neurobiology,  
Psychology*)

S. Thomas Carmichael, Jr., MD, PhD  
(*Neurology*)

Mirella Dapretto, PhD (*Psychiatry and  
Biobehavioral Sciences*)

David L. Glanzman, PhD (*Integrative Biology  
and Physiology, Neurobiology*)

Ming Guo, MD, PhD (*Molecular and Medical  
Pharmacology, Neurology*)

Paul E. Micevych, PhD (*Neurobiology*)

Thomas J. O'Dell, PhD (*Physiology*)

Alvaro Sagasti, PhD (*Molecular, Cell, and  
Developmental Biology*)

Felix E. Schweizer, PhD (*Neurobiology*)

Stephanie A. White, PhD (*Integrative Biology  
and Physiology*)

## Overview

The interdepartmental Neuroscience PhD program prepares students for careers in neuroscience research and education. The hallmark of the program is an integrated approach to study of the nervous system, using the multilevel analytical tools of molecular, cellular, systems, and/or behavioral biology, as well as quantitative approaches from the fields of mathematics, physics, and engineering. Students working at one or two analytical levels nevertheless learn to appreciate the methods and advantages of other levels of analysis. Emphasis is both on mechanisms of neural function and the biological basis of disease. Students select their research mentor from the list of all neuroscience faculty at UCLA.

Information on the undergraduate program in this discipline can be found in the [Neuroscience undergraduate interdepartmental program](#) section.

## Graduate Major

### Neuroscience PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Neuroscience

See the [Neuroscience undergraduate interdepartmental program](#) for more undergraduate courses.

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Graduate Courses

**201. Cell, Developmental, and Molecular Neurobiology.** (6) (Formerly numbered M201.) Lecture, six hours. Fundamental topics concerning cellular, developmental, and molecular neurobiology, including intracellular signaling, cell-cell communication, neurogenesis and migration, synapse formation and elimination, programmed neuronal death, and neurotropic factors. S/U or letter grading.

**M202. Cellular Neurophysiology.** (4) (Same as Neurobiology M200F and Physiological Science M202.) Lecture, three hours; discussion, two hours. Requisites: Physiological Science 111A (or M180A or Physics 5C), 166. Advanced course in cellular physiology of neurons. Action and membrane potentials, channels and channel blockers, gates, ion pumps and neuronal homeostasis, synaptic receptors, drug-receptor interactions, transmitter release, modulation by second messengers, and sensory transduction. Letter grading.

**M203. Anatomy of Central Nervous System.** (4) (Same as Bioengineering M263.) Lecture, 75 minutes; discussion/laboratory, two hours. Prior to first laboratory meeting, students must complete Bloodborne Pathogens training course through UCLA Environment, Health and Safety. Study of anatomical locations of and relationships between ascending and descending sensory and motor systems from spinal cord to cerebral cortex. Covers cranial nerves and brainstem anatomy along with anatomy of ventricular and vascular systems of brain. Subcortical forebrain areas covered in detail. Integrated anatomy laboratory includes brain dissections and overview of tools for MRI analysis. Letter grading.

**205. Systems Neuroscience.** (4) Lecture/discussion, four hours. Introduction to fundamentals of systems neuroscience, with emphasis on integration of molecular mechanisms, cellular processes, anatomical circuits, and behavioral analysis to understand function of neural systems. Letter grading.

**M206. Neuroengineering.** (4) (Same as Bioengineering M260 and Electrical and Computer Engineering M255.) Lecture, four hours; laboratory, three hours; outside study, five hours. Requisites: Mathematics 32A, Physics 1B or 5C. Introduction to principles and technologies of bioelectricity and neural signal recording, processing, and stimulation. Topics include bioelectricity, electrophysiology (action potentials, local field potentials, EEG, ECG), intracellular and extracellular recording, microelectrode technology, neural signal processing (neural signal frequency bands, filtering, spike detection, spike sorting, stimulation artifact removal), brain-computer interfaces, deep-brain stimulation, and prosthetics. Letter grading.

**207. Integrity of Scientific Investigation: Education, Research, and Career Implications.** (2) Discussion, two hours. Designed for graduate students. Debate on topics related to ethical conduct of scientific investigation, with emphasis on critical thinking. Topics include scientific misconduct, mentoring, data ownership, authorship, peer review, use of animals and humans in biomedical research, conflicts of interest, technology, and scientific integrity. S/U grading.

**210A-210B-210C. Introduction to Current Literature in Neuroscience.** (2-2-2) Discussion, two hours. Critical discussion of current research literature related to topics of the five core courses in neuroscience graduate curriculum. S/U grading.

**211A-211B-211C. Evaluation of Research Literature in Neuroscience.** (2-2-2) Discussion, two hours. Advanced critical analysis of current research in neuroscience. S/U grading.

**M212A-M212B-M212C. Evaluation of Research Literature in Neuroengineering.** (2-2-2) (Same as Bioengineering M261A-M261B-M261C and Electrical and Computer Engineering M256A-M256B-M256C.) Discussion, two hours. Critical discussion and analysis of current literature related to neuroengineering research. S/U grading.



**215. Variable Topics Research Literature Seminars: Neuroscience.** (1) Seminar, two hours. Critical discussion and analysis of current literature for various neuroscience research topics. Only one topic may be taken twice for credit and applied toward neuroscience graduate requirements. S/U grading.

**M220. Biology of Learning and Memory.** (4) (Same as Neurobiology M200G and Psychology M208.) Lecture, four hours. Molecular, cellular, circuit, systems, neuroanatomy, theory, and models of learning and memory. Cross-disciplinary focus on learning and memory to provide integrative view of subject that emphasizes emerging findings that take advantage of novel groundbreaking models. Letter grading.

**222. Brain Imaging and Brain Stimulation.** (4) Lecture, four hours. Limited to graduate students in neuroscience, bioengineering, psychology, and School of Medicine. Introduction to fields of brain imaging and brain stimulation, including various imaging modalities and neurostimulation strategies. Introduction to use of brain imaging in isolation or in combination with brain stimulation to understand neural circuitry, systems, and networks in health and disease. Encourages critical thinking about opportunities and limitations of two fields, and how to overcome them by combining two approaches for investigation of brain systems and functions. S/U or letter grading.

**CM223. Neurobiology of Sleep.** (4) (Same as Physiological Science CM223.) Lecture, three hours; discussion, one hour. Detailed look into science of sleep. Cellular and molecular mechanisms of falling asleep, many discrete brain structures involved in control of sleep wakefulness, and homeostatic regulation of sleep. How our sleep needs shaped by our evolutionary history, age, and gender. Latest insights into question of function of sleep, critical role sleep plays in memory formation and, close association between sleep and metabolism. Sleep disorders are considered as they provide insights into mechanisms underlying sleep. For background on science of sleep and circadian rhythms, completion of Physiological Science C126 is highly recommended. Concurrently scheduled with course CM123. Letter grading.

**M230. Molecular and Cellular Mechanisms of Neural Integration.** (5) (Same as Physiological Science M210 and Physiology M210.) Lecture, four hours; discussion, one hour. Requisite: course M202. Introduction to mechanisms of synaptic processing. Selected problems of current interest, including regulation and modulation of transmitter release, molecular biology and physiology of receptors, cellular basis of integration in sensory perception and learning, neural nets and oscillators, and molecular events in development and sexual differentiation. Letter grading.

**M233. Mechanisms and Relief of Pain.** (2) (Same as Oral Biology M204.) Lecture, two hours. Advanced treatment of neuroanatomical, neurophysiological, and biochemical bases of pain perception. Topics include classical pain theories, pain receptors and pathways, endogenous mechanisms of pain modulation, and pharmacological basis for treatment of pain disorders. Letter grading.

**240. Phenotypic Measurement of Complex Traits.** (4) Lecture, three hours. Preparation: background in human genetics helpful. Integrative approach to understanding gene to behavior pathways by examination of levels of phenotype expression across systems (cell, brain, organism), across species (invertebrate, fly, mouse, human), and throughout development across varying environmental milieus. Using examples from human disorders such as schizophrenia and Alzheimer's disease, linking of these diverse approaches in genetic research to map out integrative system of understanding basis of complex human behavior. Emphasis on basic understanding of methods used at each level of phenotype analysis, along with major resources that can be accessed to gain insight to gene-behavioral links. Letter grading.

**245. Optical Approaches in Neuroscience.** (4) Lecture, four hours. State-of-art, light-microscopy-based approaches in neuroscience. Background material on basic optical principles and microscope design, as well as certification in use of lasers. Technical approaches commonly used in study of nervous system, including imaging modalities such as two-photon mi-

croscopy, methods for imaging and stimulating neuronal activity, and advanced microscopy approaches such as FRET and FLIM. Letter grading.

**M248. Brain and Behavioral Development during Adolescence.** (4) (Same as Psychology M248.) Seminar, three hours. Foundational and emerging work on adolescent brain and behavioral development. Topics include cognition, risk taking, emotion, identity, stress, relationships, and population diversity. Discussions of assigned readings and presentations by guest faculty and scientists. S/U or letter grading.

**250. Neural Development and Repair.** (4) Lecture, four hours. Specific training in neural development and repair. Each module offers different research topic and provides perspective on its relevance to human diseases, treatments, and unmet needs for future research. Letter grading.

**C251. Computational Neuroscience for Interdisciplinary Scientists.** (4) Lecture, two hours; laboratory, one hour. Requisites: course M101A or Psychology 115; Life Sciences 30A and 30B, or Mathematics 3A, 3B, and 3C, or 31A, 31B, and 32A; Life Sciences 40 or Psychology 100A or Statistics 10 or 13. Designed for students in both experimental and computational tracks to acquire significant breadth and depth in computational neuroscience. Highly interdisciplinary study in computational neuroscience. Integrates data-driven modeling, simulations, and analyses of neural dynamics to train students in hypothesis-driven approach to computational modeling. Students can immediately apply acquired knowledge and skills in research or industry settings. Concurrently scheduled with course C151. S/U or letter grading.

**255. Functional Organization of Behavior.** (2) Lecture, two hours. Changes in neuronal properties supporting changes in learned behavior. Different types of learning. Role of neurotransmitters and second messengers in changing ion channels of neurons to support associative learning versus long-term potentiation of neurotransmission. S/U or letter grading.

**259. Introduction to Dynamical Systems.** (4) Lecture, two hours; discussion, one hour. Introduction to essential concepts of modeling and dynamics, with applications at various levels of physiology and neuroscience. S/U grading.

**260. Introduction to Signal Processing for Neuroscientists.** (4) Lecture, four hours. Limited to Neuroscience graduate students. Introductory principles for handling some common types of time-varying data used to measure brain activity (spikes, local field potentials, calcium transients). Analysis of data with simple computer scripts for team-based projects. May not be repeated for credit. Letter grading.

**265. Essentials of Neuro-Oncology.** (4) Lecture, 90 minutes; discussion, 90 minutes. Preparation: competence in general statistics, neurobiology, and neuroanatomy. Introduction to essential topics in clinical neuro-oncology and neuro-oncology research. Exposure to multidisciplinary field of neuro-oncology through weekly meetings consisting of lectures from expert faculty and in-depth journal club or topical discussions on both fundamental and contemporary topics in neuro-oncology. Students learn various types of central nervous system tumors, and how they are diagnosed, treated, and monitored. Unique aspects of treating neuro-oncology patients, including issues associated with changes in quality of life, neurocognition, and psychological concerns. Discussion of current and new approaches to neuro-oncology. Letter grading.

**270. Brain Architecture.** (4) Lecture, two hours; discussion, one hour. Preparation: first-year neuroscience graduate core courses. Overview of brain architecture including theoretical and methodological approaches for brain connectomic research. Evolution and development of nervous system, comparative neuroanatomy and behavioral neuroanatomy as well as classical and modern data collection methods, image processing pipelines for neuroanatomic data, and neuroinformatics principles. S/U or letter grading.

**CM272. Neuroimaging and Brain Mapping.** (4) (Same as Physiological Science M272 and Psychology M213.) Lecture, three hours. Requisites: courses M201, M202. Theory, methods, applications,

assumptions, and limitations of neuroimaging. Techniques, biological questions, and results. Brain structure, brain function, and their relationship discussed with regard to imaging. Concurrently scheduled with course C172. Letter grading.

**M273. Neural Basis of Memory.** (4) (Same as Psychiatry M270.) Lecture, two hours; discussion, one hour. Anatomical, physiological, and neurological data integrated into models for how behavioral phenomena of memory arise. Discussion of invertebrate memory, cortical conditioning, hippocampus and declarative memory, and frontal lobes and primary memory.

**275. Advanced Techniques in Neurobiology.** (2) Lecture, one hour; laboratory, one hour. Preparation: basic biology and chemistry. Designed to provide introduction and, when possible, practical demonstration of a number of techniques used in neurochemical research, with emphasis on techniques used for identification, measurement, and visualization of compounds thought to be important as mediators of intercellular communication in central nervous system. S/U or letter grading.

**C277. Drugs of Abuse: Translational Neurobiology.** (4) Lecture, four hours. Requisite: Neuroscience M101A. Course ranges from synapse to society. Provides intensive didactic on current neuroscientific basis for understanding substance abuse and blends that material with relevant topics such as epidemiology, co-occurring disorders, treatment options, prevention, and public policies, with emphasis on communication of course materials to general public. Concurrently scheduled with course C177. Letter grading.

**M284A-M284B. Principles of Neuroimaging I, II.** (4-4) (Same as Psychiatry M284A-M284B and Psychology M288A-M288B.) Lecture, four and one half hours. Preparation: competence in integral calculus, electricity and magnetism, computer programming (any language), general statistics. Requisite: Psychiatry 292. Course M284A is requisite to M284B. Instrumental imaging methods for study of nervous system, with emphasis on quantitative understanding and data interpretation and features common to modalities. X-ray computed tomography, magnetic resonance imaging, positron emission tomography, magnetoencephalography, transcranial magnetic stimulation, near infrared imaging. Letter grading.

**M285. Functional Neuroimaging: Techniques and Applications.** (3) (Same as Bioengineering M284, Physics and Biology in Medicine M285, Psychiatry M285, and Psychology M278.) Lecture, three hours. In-depth examination of activation imaging, including MRI and electrophysiological methods, data acquisition and analysis, experimental design, and results obtained thus far in human systems. Strong focus on understanding technologies, how to design activation imaging paradigms, and how to interpret results. Laboratory visits and design and implementation of functional MRI experiment. S/U or letter grading.

**286A. Electroencephalography Methods and Analysis I.** (4) Lecture, three hours. Recommended preparation: one term of graduate level statistics, biostatistics. Understanding of neural origins of electroencephalography (EEG), common and advanced methods for experiment designs, EEG recording and noise reduction, data processing, feature extractions, and biomarker development. Students design simple experimental paradigms to answer some fundamental perceptual and cognitive questions, de-noise already recorded EEG and extract useful information using popular EEG processing interfaces such as EEGLAB and BrainStorm, perform some common statistical tests on the extracted features and explain achieved results, and navigate through state-of-the-art analyses and applications of EEG. Letter grading.

**286B. Electroencephalography Methods and Analysis II.** (4) Lecture, three hours. Requisite: course 286A. Recommended preparation: one term of graduate level statistics, biostatistics. Development of expertise in interpretation of electroencephalographic (EEG) signals in context of current issues. Students identify neural and non-neural sources of EEG signals, understand use of EEG in research and applications, explain current limitations and controversies of EEG, and navigate through state-of-the-art analyses and applications of EEG. Letter grading.

**287. Dynamics of Neural Microcircuits. (4)** (Formerly numbered M287.) Lecture, two hours; discussion, two hours. Development of integrative understanding of neural microcircuits that underlie specific functions of sensory processing, generation, and coordination of motor activity, as well as generation and modulation of neural rhythms. Letter grading.

**M297. Methods in Developmental Cognitive Neuroscience. (4)** (Same as Psychology M297.) Seminar, three hours. Survey of methods and tools used to address developmental cognitive neuroscience questions. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (2 to 12)** Tutorial, to be arranged. S/U grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. S/U grading.

**599. Dissertation Research for PhD Candidates. (2 to 12)** Tutorial, to be arranged. Designed for students requiring special instruction or time to work on dissertation. S/U grading.

## NEUROSURGERY

David Geffen School of Medicine

562 Wasserman Building  
Box 956901

Los Angeles, CA 90095-6901

### Neurosurgery

310-267-9449

Linda M. Liau, MD, MBA, PhD, *Chair*

## Overview

Neurosurgery is a discipline of medicine that provides operative and nonoperative management (i.e., critical care, prevention, diagnosis, evaluation, treatment, and rehabilitation) of disorders of the central, peripheral, and autonomic nervous systems, including their supporting structures and vascular supply; the evaluation and treatment of pathological processes that modify the function or activity of the nervous system, including the hypophysics; and the operative and nonoperative management of pain.

As such, neurosurgery encompasses treatment of adult and pediatric patients with disorders of the nervous system—disorders of the brain, meninges, and skull and their blood supply, including the extracranial carotid and vertebral arteries, disorders of the pituitary gland, disorders of the spinal cord, meninges, and vertebral column, including those that may require treatment by spinal fusion or instrumentation, and disorders of the cranial and spinal nerves throughout their distribution.

For more details on the Department of **Neurosurgery**, see the department website.

**Neurosurgery faculty** information is available from the department.

## Neurosurgery

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Course

**199. Directed Research in Neurosurgery. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## NURSING

School of Nursing

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### Nursing

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### Department e-mail

Lin Zhan, RN, PhD, FAAN, *Dean*

Lauren Clark, RN, PhD, FAAN, *Associate Dean, Academic Affairs*

Holli A. DeVon, RN, PhD, FAHA, FAAN, *Associate Dean, Research*

Robert J. Lucero, RN, MPH, PhD, FAAN, *Associate Dean, Diversity, Equity, and Inclusion*

Elizabeth Yzquierdo, MPH, EdD, *Associate Dean, Student Affairs*

## Faculty Roster

### Professors

Dong Sung An, MD, PhD

Barbara M. Bates-Jensen, RN, PhD, WOCN, FAAN

Sarah E. Choi, RN, PhD, FNP

Lauren Clark, RN, PhD, FAAN (*Shapiro Family Endowed Professor of Developmental Disability Studies*)

Holli A. DeVon, RN, PhD, FAHA, FAAN (*Audrienne H. Moseley Professor of Community Health Research*)

MarySue V. Heilemann, RN, PhD, FAAN

Felicia S. Hodge, DrPH

Jian Li, MD, PhD

Robert J. Lucero, RN, MPH, PhD, FAAN (*Audrienne H. Moseley Endowed Professor of Equity, Diversity, and Inclusion*)

Paul M. Macey, PhD

Nancy A. Pike, RN, PhD, CPNP-AC, FAAN

Wendie A. Robbins, RN, PhD, NP, FAAN, FAAOHN (*Audrienne H. Moseley Professor of Biological Nursing Science*)

Dorothy J. Wiley, RN, PhD, FAAN

Lin Zhan, RN, PhD, FAAN

### Professors Emeriti

Nancy L.R. Anderson, RN, PhD, NP-C, AOCN, FAAN

Lina K. Badr, RN, DNSc, PNP-C, FAAN  
Mary P. Cadogan, DrPH, GNP-BC, FAAN, FGSA

Betty L. Chang, RN, DNSc, FNP-C, FAAN

Peggy A. Compton, RN, PhD, FAAN

Lynn V. Doering, PhD, FAHA, FAAN (*Audrienne H. Moseley Professor Emerita of Nursing*)

Jo-Ann O. Eastwood, RN, PhD, CNS, ACNP-BC, FAHA, FAAN

Jacquelyn H. Flaskerud, RN, PhD, FAAN

Anna F. Gawlinski, RN, PhD, ACNP-BC, CNS-BC, FAAN

Deborah Koniak-Griffin, RNC, EdD, FAAN (*Audrienne H. Moseley Professor Emerita of Women's Health Research*)

Mary A. Lewis, RN, DrPH, FAAN

Sally L. Maliski, RN, PhD

Donna K. McNeese-Smith, RN, EdD, CNA

Janet C. Menten, PhD, APRN, FAAN, FGSA

Joyce A. Newman Giger, RN, EdD, FAAN

Carol L. Pavlish, RN, PhD, ONC, FAAN

Linda R. Phillips, RN, PhD, FGSA, FAAN

(*Audrienne H. Moseley Professor Emerita of Nursing*)

Huibrie C. Pieters, RN, MSN, DPhil, PhD

Sharon J. Reeder, RN, PhD, FAAN

Linda P. Sarna, RN, PhD, FAAN (*Lulu Wolf Hassenplug Professor Emerita of Nursing*)

Gwen M. Van Servellen, RN, PhD, FAAN

Frances M. Wiley, RN, MN

Ann B. Williams, RNC, EdD, FAAN

Mary A. Woo, RN, PhD, FAAN

### Associate Professors

Wei-Ti Chen, RN, PhD, CNM, FAAN

Nalo M. Hamilton, PhD, MSN, APRN-BC

Su Yon Jung, PhD

Sophie Sokolow, MPharm, PhD

### Assistant Professors

Dana C. Beck, MSN, PhD, FNP-BC

Eden R. Brauer, RN, PhD

Kristen R. Choi, RN, MS, PhD

Rosario B. Jaime-Lara, RN, FNP, PhD

Charlene A. Niemi, RN, MSN, PhD, PHN, SNSC, CNE

Mary Rezk-Hanna, NP, PhD

Christine Samuel-Nakamura, RN, PhD, FNP-BC

Kia Skrine Jeffers, RN, PhD, PHN

Yeonsu Song, RN, PhD, FNP-C

Kristi K. Westphal, RN, PhD, CPNP-PC

### Lecturers

Carol L. Cunningham, RNFA, PHN, MSN, FNP-C

Barbara L. Demman, RN, MSN, CNS, ACNP

Stacey D. Green, RN, MSN, DNP, GNP-BC, PHN, NPNP, AOCNP

Amy S. Lohmann, RN, DNP, CNS, CPNP

Laurie A. Love-Bibbero, RN, DNP, FNP-BC

Young Kee Markham, RN, MN, GNP-C

Nancy E. McGrath, RN, MN, CPNP-AC/PC

Silvia L. Mieure, RN, MSN, CCRN, CNL

## Adjunct Professors

Mary Lynn Brecht, PhD  
Nancy Jo Bush, RN, MN, MA, AOCN, ONP,  
FAAN  
Catherine L. Carpenter, PhD

## Adjunct Associate Professors

Nancy T. Blake, RN, PhD, CCRN-K, NHDP-  
BC, NEA-BC, FAAN  
Anita R. Bralock, RN, PhD, CNM  
Denice Economou, PhD, CNS, CHPN  
Kathleen McDermott, RN, APRN, MSN, DNP,  
PMHNNP-BC  
Benissa E. Salem, RN, MSN, PhD, CNL, PHN  
Rita L. Secola, RN, PhD  
Ali Tayyab, RN, PhD, NPD-BC, PHN  
Elizabeth Anne Thomas, RN, PhD, ANP-BC,  
COHN-S, FAAOHN

## Adjunct Assistant Professors

Theresa A. Brown, RN, DNP, MSN, ACNP-BC,  
AACC, FAAN  
Emma Lyn M. Cuenca, RN, DNP, CCRN, CSC,  
CNS

## Overview

A strong scientific basis underlies the teaching of nursing practice, leadership, and research. Related clinical experiences are arranged within the Reagan UCLA Medical Center, its affiliates, other major medical centers, or in selected community sites.

At the bachelor's level, nurses are prepared as generalists with special skills in primary, secondary, and tertiary prevention and care within a population-based context, leadership, and evidence-based practice. At the master's level, nurses are prepared as generalists in hospital-based care or for advanced nursing practice as nurse practitioners, or clinical specialists, or administrators in a variety of settings and specialized areas of healthcare. The Doctor of Philosophy (PhD) program prepares scholars who do original research, generate new theories, and build the scientific basis for professional nursing practice. Research is both basic and applied.

## Undergraduate Major

### Nursing BS Prelicensure

The focus of the prelicensure program is on the preparation of nurse generalists with special skills in primary, secondary, and tertiary prevention and care within an individual- and population-based context while developing the basics for a strong leadership role. Students learn the art and science of nursing using the latest research findings to guide their practice.

### Capstone Major

The Nursing (Prelicensure) major is a designated capstone major. Students complete a clinically based scholarly project that is approved by a designated faculty member. In completing the capstone course, students should select, evaluate, and apply appropriate theory and research findings concerning individual- and population-based health promotion

and disease prevention, biobehavioral and health systems, and social environmental, cultural, and human diversity to the nursing process. They should utilize the nursing process to promote biopsychosocial health and disease prevention and to support the resources of culturally diverse clients and families in community- and/or hospital-based settings.

Through their work, students should demonstrate effective communication and collaboration skills with clients and their families, research participants, other health professionals, colleagues, and policymakers. They also should identify practice-based problems and hypotheses and critique research on issues of importance to nursing and health care delivery; participate effectively in relevant professional and community organizations and/or interest groups; demonstrate leadership as a member of the health team to plan, manage, and evaluate care of individuals, families, and communities for culturally diverse populations; and practice their work based on the principles of ethics, social justice, and law.

## Learning Outcomes

The Nursing major has the following learning outcomes:

- Selection, evaluation, and application of appropriate theory and research findings concerning individual- and population-based health promotion and disease prevention, biobehavioral and health systems, social environmental, and cultural and human diversity to the nursing process with a variety of clients, families, and communities from diverse cultural backgrounds
- Use of the nursing process to promote biopsychosocial health and disease prevention, and to support client resources in community and hospital settings
- Demonstrated effective communication and collaboration skills with clients, families, research participants, health professionals, and policymakers
- Identification of practice-based problems and hypotheses, and critique research on issues of importance to nursing and health care delivery within hospital and community settings
- Effective participation in professional and community organizations and interest groups relevant to health care delivery and modification of nursing standards and practices in keeping with current trends
- Demonstrated leadership as a health team member to plan, manage, and evaluate care of individuals, families, and communities
- Practice of hospital- and community-based nursing using principles of ethics, social justice, and law

## Entry to the Major

### Admission

The School of Nursing strives to attract a culturally and ethnically diverse student population. Admission is designed for first-year students and transfer students at the junior level. First-year applicants are expected to fulfill the University of California admission requirements. Transfer applicants are expected to fulfill the Intersegmental General Education Trans-

fer Curriculum (IGETC). Students must have a grade of C or better in each requisite course and an overall grade-point average of 3.5 or better.

Two recommendation forms and a written statement of purpose are also required. Diverse life experiences, including previous employment, volunteer work, and community service that reflect leadership, responsibility, multicultural involvement, multilingual abilities, and other unusual skills and knowledge are evaluated for all applicants. Consideration is also given to students who are socially, economically, and educationally disadvantaged. Completed applications should reflect clearly identified career goals and documentation of potential for nursing practice.

## Transfer Students

Transfer applicants to the Nursing major with 90 or more units must complete the following introductory courses prior to admission to UCLA: calculus, communications, human anatomy, human physiology, inorganic and organic chemistry, cells, tissues, and organs, microbiology, molecular biology, and introductory or general psychology.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Biostatistics 100A, Chemistry and Biochemistry 14A, 14B, 14C, Communication 1 or 10, Life Sciences 7A, 7C, Mathematics 3A or 31A, Microbiology, Immunology, and Molecular Genetics 10, Nursing 3, 10, 13, 20, 50, 54A, 54B, 173W, Psychology 10.

### The Major

*Required:* Nursing 115, 150A, 150B, 152A, 152B, 160, 161, 162A through 162C, 163, 164, 165, 168, 171, 174, and completion of a capstone senior scholarly project (course 169).

## Policies

### The Major

Transfer students must complete Biostatistics 100A, Nursing 10, 20, 50, 54A, and 173W on entry.

Students may request to pursue a minor in a related field if the coursework can be completed within the 216-unit limit.

The curriculum at UCLA must be completed with a minimum overall grade-point average of 2.0 (C) or better in all courses taken while a student in the School of Nursing.

Each required nursing course in the school must be completed with a grade of C or better (C- grade is not acceptable).



## Graduate Majors

### Doctor of Nursing Practice

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Science in Nursing

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Science in Nursing/Master of Business Administration

### Nursing MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Nursing

#### Lower-Division Courses

**3. Human Physiology for Healthcare Providers. (5)** Lecture, three hours; laboratory, two hours. Basic understanding of human physiological processes, with emphasis on applications to patient evaluation and care. Concepts underlying normal function and how alterations in these normal functions can affect body systems. Knowledge and understanding of these normal human processes is basic to providing quality nursing care. Examination of system variations across lifespan. Letter grading.

**10. Introduction to Nursing and Social Justice I. (2)** Lecture, two hours. Within context of history of nursing, introduction to practice of nurses, including role of advocacy. Discussion of effective use of self as professional nurse in relation to ethics, cultural competence, and human diversity. Introduction to ethical principles (justice, autonomy, veracity, beneficence, confidentiality) and professional values (altruism, autonomy, human dignity, integrity, and social justice) in relation to nursing practice throughout history in health/illness and end-of-life contexts. Letter grading.

**13. Introduction to Human Anatomy. (5)** Lecture, three hours; laboratory, two hours. Structural presentation of human body, including musculoskeletal, nervous, circulatory, respiratory, digestive, renal, and reproductive systems. Laboratory uses virtual cadaver dissection and examination. Letter grading.

**15. Social Determinants of Health and Social Justice: Introduction to Professional Nursing Roles. (4)** Lecture, three hours; discussion, two hours. International and domestic nursing practice provides rich history of changing roles within context of ethics, and social justice. Analysis of ethical principles of justice, autonomy, veracity, beneficence, and confidentiality and professional values of altruism, autonomy, human dignity, integrity, and social justice in relation to (nursing) practice across lifespan development and across health-illness continuum. Exploration of social determinants of health within context of social, cultural, legal, and political forces and traditions of paternalism affecting professional nursing in diverse populations. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to Nursing and Social Justice II. (2)** Lecture, two hours. Requisite: course 10. Advanced discussion on history of nursing, with focus on role of contemporary nursing in relation to ethics and social justice. Analysis of ethical principles (justice, autonomy, veracity, beneficence, confidentiality) and professional values (altruism, autonomy, human dignity, integrity, and social justice) in relation to nursing practice throughout history in health/illness and end-of-life contexts. Evaluation of social, cultural, legal, and political forces in relation to paternalism for professional nurses working with diverse patient populations in the 21st century. Letter grading.

**50. Fundamentals of Epidemiology. (4)** Lecture, three hours; laboratory, three hours. Epidemiology focuses on distribution and determinants of health-related states or events in specified populations. Fundamentally, epidemiology seeks to control health problems in communities and institutions. Letter grading.

**54A. Pathophysiology I. (3)** Lecture, three hours. Requisites: courses 3, 13 taken within past three years. Designed to provide students with basic understanding of pathophysiological changes that occur within internal environment of individual. Concepts underlying pathologic changes across all body systems are presented. Understanding these alterations is basic to providing quality nursing care. System variations across lifespan are addressed. Letter grading.

**54B. Pathophysiology II. (2)** Lecture, two hours. Requisite: course 54A. Designed to provide students with understanding of pathophysiological changes that occur at cellular, tissue, and organ level across selected body systems within internal environment of individual. Presence of dysfunction or disease of selected systems is provided as rationale for nursing diagnosis and therapeutic interventions. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

#### Upper-Division Courses

**115. Pharmacology and Therapeutics. (5)** Lecture, four hours. Requisites: courses 54A, 54B. Clinical pharmacology for undergraduate nursing students, beginning with emphasis on basic pharmacological principles. Focus on major drug classes and their mechanism of action, pharmacokinetics, adverse effects, and clinical issues. Letter grading.

**140. Advanced Growth and Development in Culturally Diverse Populations. (5)** Lecture, five hours. Introduction of primary prevention strategies as they pertain to health and wellness across lifespan, using population-based approach to nursing care of diverse

populations. Includes priorities in reproductive health including issues related to contraception and parenting, well child care, school-age health, and chronic illness prevention strategies for young and middle-aged adults and elderly who live independently in communities or within institutions. Letter grading.

**141. Nutrition for Health Care Providers. (5)** Lecture, four hours; laboratory, three hours. Critical analysis of nutrition prevention strategies using population-based, scientific, and clinical approaches to care of diverse populations. Consideration of nutrition in relation to prevention of disease and recovery from disease. Covers biological, chemical, public health, and clinical aspects of major macronutrients and micronutrients, digestion, energy assessment, obesity, malnutrition, dietary assessment, nutritional therapies, and exercise using candidate diseases approach. Examination of influence of overarching political, societal, and governmental systems within U.S. on observed nutritional patterns. Exploration of food production in relation to climate change. Inequality of food choice and availability as well as consumption are linked to health disparities. Letter grading.

**150A. Fundamentals of Professional Nursing I. (4)** Lecture, three hours; laboratory, three hours. Requisites: courses 10, 20, 54A. Focuses on theoretical foundations of primary, secondary, and tertiary prevention as they relate to nursing care management in acute care settings for Nursing BS students. Emphasis is on application of relevant theories to Nursing BS practice roles in health care systems through case study examples, with focus on application to clinical practice settings that include culturally diverse populations. Concepts of communication, nursing process as clinical decision-making strategy, and critical thinking skills are introduced as essential to practice of professional nursing. Learning experiences in nursing skills laboratory and in clinical settings are integral components. Introduction to mathematics calculations and terminology used in clinical setting. Letter grading.

**150B. Fundamentals of Professional Nursing II. (4)** Lecture, three hours; laboratory, three hours. Requisites: courses 150A, 152A, 152B, 174. Continuation of course 150A. Expansion of student knowledge on practice of professional nursing as theory-based goal-directed method for assisting patients to meet basic human needs at various levels of health continua. Concepts of communication, interdisciplinary communication and collaboration, interpersonal relationships, cultural competence, and nursing process with critical thinking skills as clinical decision-making strategies essential to practice of professional nursing. Characteristics and roles of professional nursing. Development of caregiver, teacher, and collaborator roles in learning experiences in nursing skills laboratory and clinical settings. Continued work on mathematical calculations and terminology with addition of intravenous (IV) drip medication calculations used in clinical setting. Letter grading.

**152A. Health Promotion: Growth and Development in Culturally Diverse Populations. (2)** Lecture, two hours. Introduction to primary prevention strategies as they pertain to health and wellness across lifespan, using population-based approach to nursing care of diverse populations. Priorities in growth and development and reproductive health, including issues related to contraception and parenting; well-child care, school-age health, and chronic illness-prevention strategies for young- and middle-aged adults; elderly who live independently in communities or within institutions. Analysis of influence of overarching political, societal, and governmental systems within U.S. Letter grading.

**152B. Health Promotion: Nutrition in Culturally Diverse Populations. (2)** Lecture, two hours. Examination of primary prevention strategies involving nutrition using population-based and clinical approaches to nursing care of diverse populations. Investigation of nutrition in relation to prevention of disease and recovery from disease. Covers biological, public health, and clinical aspects of major macro- and micronutrients, obesity, malnutrition, dietary assessment, nutritional therapies, and exercise using candidate disease approach. Examination of influences of overarching



political, societal, and governmental systems within U.S. and outside U.S. on observed nutritional patterns. Letter grading.

**C155. Global Health Elective: Globalization, Social Justice, and Human Rights. (3)** Seminar, two hours. Exploration of theories, issues, debates, and pedagogy associated with globalization, social justice, and human rights and how these perspectives influence human health and well-being. Provides students with unique opportunity to explore these topics within classroom, via Internet and other technologies, and in other classrooms located around globe. Students, through collaborative projects with peers around world, reflect on how globalization shapes and transforms local communities and national cultures. Concurrently scheduled with course C255. Letter grading.

**160. Secondary Prevention. (4)** Lecture, four hours. Requisites: courses 150A, 150B, 152A, 152B. Screening and early detection of illness to prevent chronic or acutely deteriorating illness. Expanding on concepts of health and human development and using nursing process, application of nursing role in providing care to individuals and their families to screen, diagnose, and treat illness at earliest possible time to prevent disability or premature mortality. Examination of health problems of individuals within context of family, social and community systems, and interdisciplinary healthcare systems. Emphasis on differences in developmental stages in response to screening for early and late signs and symptoms of illness in ambulatory and acute care settings, community agencies, rehabilitation units, outpatient specialty clinics and surgical units, and home and community settings. Letter grading.

**161. Psychiatric Mental Health Nursing. (5)** Lecture, three hours; clinical, six hours. Requisites: courses 160, 162B. Knowledge development and skill assessment to promote mental health of individuals. Exploration of research underlying assessment, diagnosis, and pharmacotherapeutic and psychological treatment of individuals with psychiatric disorders. Application of theory in clinical interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating course of care for patients. Letter grading.

**162A. Foundational Concepts for Tertiary Prevention and Care of Medical-Surgical Patients and Families. (4)** Lecture, three hours; clinical, three hours. Requisites: courses 54A, 54B, 150A. Corequisites: courses 115, 150B. Examination of nursing assessment and management of common health problems that adults experience. Theory content in basic assessment, health history, and diagnostic reasoning for selected health problems, with emphasis on social, cultural, and developmental influences. Integration of basic knowledge of pathophysiology, stress and adaptation, adult development theory, therapeutic interventions, and communication concepts as applied to care of medical and surgical clients and their families. Introduction to concept of nurses as bedside scientists, with emphasis on critical and contextual thinking skills and diagnostic reasoning. Nursing process, ethical principles, clinical research, evidence-based practice, and clinical thinking that maximize patient safety and quality care used during clinical experiences. Letter grading.

**162B. Tertiary Prevention and Care of Medical-Surgical Patients and Families. (6)** Lecture, four hours; clinical, six hours. Requisite: course 162A. Pathophysiological and psychosocial aspects of assessment and management for selected acute and emergent problems of adult patients with complex illness, including multifaceted assessment, health history, and diagnostic reasoning skills, and emphasis on social, cultural, and developmental influences. Integration of knowledge of pathophysiology, diagnostics, pharmacology, therapeutic interventions, evidence-based practice, patient safety, and communication concepts as applied to care of medical and surgical patients. Supervised practicum experience within settings of multidisciplinary teams directing care of medical-surgical clinical units, with focus on clinical interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating course of care for patients, both as individuals and cohorts. Interme-

diate-level assessment, health maintenance, and management of symptoms across lifespan. Letter grading.

**162C. Tertiary Prevention and Care of Complex Medical-Surgical Patients and Families. (8)** Lecture, four hours (10 weeks); clinical, 24 hours (five weeks). Requisite: course 162B. Nursing assessment and management of acute and chronic health problems of acutely ill adults. Content in assessment, health history, and diagnostic reasoning with emphasis on social, cultural, and developmental influences. Integration of pathophysiology, pharmacology, stress and adaptation, adult development theory, therapeutic interventions, evidence-based practice, patient safety, and communication concepts as applied to care of acutely ill medical surgical patients, with complex and comorbid conditions, and their families. Emphasis on critical and contextual thinking skills and diagnostic reasoning. Nursing process, ethical principles, clinical research, evidence-based practice, and clinical thinking that maximize patient safety and quality care. Diagnosis and management of health care problems managed by master's-level clinical nurses in acute care settings. Letter grading.

**163. Nursing Care of Geriatric Patients and Families. (3)** Lecture, two hours; clinical, one hour. Requisite: course 162A. Addresses prevention and management of acute and chronic health problems of older adults. Theory content emphasizes assessment, goal setting, treatment planning, and evaluation of nursing care of older adults and their families with emphasis on psychosocial, cultural, and developmental influences. Students integrate knowledge of pathophysiology, pharmacology, stress and adaptation, adult development theory, therapeutic interventions, and communication concepts as applied to care of older adult patients and their families. Emphasis on concept of nurse as nurse scientist with critical and contextual thinking skills and diagnostic reasoning. Nursing process, ethical principles, clinical research, evidenced-based practice, and clinical thinking that maximize patient safety and quality care for older adults are employed during clinical experiences. Letter grading.

**164. Maternity Nursing. (5)** Lecture, three hours; clinical, six hours. Requisites: courses 160, 160B. Nursing assessment and management for selected acute and emergent problems in maternity/newborn patients, with emphasis on social, cultural, and developmental influences. Integration of basic knowledge of pathophysiology, diagnostics, pharmacology, therapeutic interventions, and communication concepts as applied to childbearing families, with application of nursing process, evidenced-based practice, problem-solving strategies, and critical thinking. Supervised clinical practicum experience within setting of multidimensional team, with focus on application of theory in clinical interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating nursing care for maternity/newborn patients. Intermediate-level assessment, health maintenance, and management of symptoms in this population. Letter grading.

**165. Pediatric Nursing. (5)** Lecture, three hours; clinical, six hours. Requisites: courses 160, 162B. Nursing assessment and management of acute, chronic, critical, and emergent illnesses in infants, children, and adolescents with emphasis on social, cultural, and developmental influences. Integration of basic knowledge of pathophysiology, diagnostics, pharmacology, therapeutic interventions, and family-centered care concepts as applied to care of infants, children, and adolescents. Application of nursing process, evidence-based practice, and problem-solving and critical-thinking strategies to improve patient safety, care quality, and health outcomes. Supervised practicum experience within setting of multidimensional team in clinical interpretation, assessment, and diagnostic data for purpose of planning, implementing, and evaluating nursing care for infants, children, and adolescents. Letter grading.

**168. Advanced Leadership and Role Integration. (5)** Lecture, five hours. Requisites: courses 161, 162C, 163, 164, 165. Leadership and management theories and models, resource allocation and management, delegation and teamwork, conflict resolution, healthy

work environments, legal and ethical aspects of professional practice, evaluation of professional practice, patient safety and quality improvement, accreditation process for health care systems, and contemporary issues in workplace. Emphasis placed on integration of all professional role behaviors, application of research, evidence-based practice, and leadership-management of patient-centered care as transition is made from student role to that of practicing professional nurse. Focus placed on preparation for National Council Licensure Examination (NCLEX). Letter grading.

**169. Clinical Internship: Integration. (12)** Clinical, 36 hours. Requisites: courses 161, 162C, 163, 164, 165. Supervised practicum experience within clinical setting as part of interdisciplinary health care team. Focus on application of theory in clinical setting and interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating course of care for patients, both as individuals and cohorts. Students design and complete quality improvement project that contributes to unit's goals and objectives. Students implement advanced-level assessment, health maintenance, and management of symptomatology across lifespan. P/NP grading.

**171. Public Health Nursing. (6)** Lecture, three hours; clinical, nine hours. Requisites: courses 161, 162C, 163, 164, 165. Theoretical content focuses on population-based approach to public health nursing in relation to health promotion and disease prevention at level of individuals, families, communities, and systems. Clinical practicum concentrates on population-based public health nursing in culturally diverse settings including health departments, health policy institutions, and public service agencies. Clinical practicum activities include health promotion and disease prevention at level of communities, populations, and systems, both domestically and globally. Letter grading.

**M172. Care Work: Disability Justice and Health Care. (2)** (Same as Disability Studies M172.) Lecture, one hour; discussion, one hour. Exploration of nature, history, models, and propositions of care, care work, disability, disability justice movement, and health care. Consideration of intersections, interdependence, and complexities of formal and informal care webs and care economies between caregivers and receivers, which includes kin, advocates, disability communities, and health professionals. Use of multi-media, scholarly texts, and theoretical frameworks from disability justice, disability studies, film, gender studies, health, labor studies, law, nursing, and public policy to investigate the concepts of care and care work. Letter grading.

**M172XP. Care Work: Disability Justice and Health Care. (3)** (Same as Disability Studies M172XP) Seminar, one hour. Corequisite: course M172. Exploration of nature, history, models, and propositions of care, care work, disability, disability justice movement, and health care. Consideration of intersections, interdependence, and complexities of formal and informal care webs and care economies between caregivers and receivers, which includes kin, advocates, disability communities, and health professionals. Use of multi-media, scholarly texts, and theoretical frameworks from disability justice, disability studies, film, gender studies, health, labor studies, law, nursing, and public policy to investigate the concepts of care and care work. Emphasis on community engagement with observational and collaborative interaction and learning in governmental, non-profit, community-based organizations, or health-care networks of disability care. Letter grading.

**173W. Introduction to Nursing Research and Writing II. (5)** Lecture, five hours. Requisite: English Composition 3. Introduction to planning research project based on simple question. Review of components of research activities: specific aims and study purposes, variable definition, sample selection, data collection tools, data analyses, and ethical conduct in research studies. Examples of research used as models to demonstrate steps of research process as related to nursing practice. Emphasis on comprehension of research terminology and concepts that are part of each step of research process. Students critique published

research. Study by example of relationship between theory and nursing research. Satisfies Writing II requirement. Letter grading.

**174. Physical Assessment. (4)** Lecture, three hours; laboratory, three hours. Prerequisites: courses 3, 13. Designed to provide in-depth review and synthesis of physical assessment skills and knowledge covering lifespan. Individual study, use of audiovisual aids, physical assessment skills practice in laboratory, and required text are mandatory. Letter grading.

**177. Public Health Nursing. (6)** Lecture, three hours; clinical, three hours. Theoretical content focuses on population-based approach to public health nursing in relation to health promotion and disease prevention at level of individuals, families, communities, and systems. Designed for health workers licensed as licensed practical nurses, licensed vocational nurses, and registered nurses holding Associate Degree in Nursing (ADN) or Diploma in Nursing and licensed as registered nurse. Clinical practicum concentrates on population-based public health nursing in culturally diverse settings including health departments, health policy institutions, and public service agencies. Clinical practicum activities include health promotion and disease prevention at level of communities, populations, and systems, both domestically and globally. Letter grading.

**175. Physical Assessment for Advanced Practice. (4)** Lecture, three hours; laboratory, three hours. Comprehensive review and synthesis of physical assessment skills and knowledge covering lifespan and in diverse populations. Emphasis on history-taking related to general health status and specific complaints, as well as detailed physical examination techniques. Individual study, use of audiovisual aids, physical assessment skills practice in laboratory, and required text are mandatory. Letter grading.

**188. Special Topics in Nursing. (4)** Lecture, three hours; discussion, one hour. Limited to junior/senior Nursing majors. Departmentally sponsored experimental or temporary courses, such as those taught by visiting faculty members. May be repeated for credit. P/NP or letter grading.

**196. Research Apprenticeship in Nursing. (2 to 4)** Tutorial, four hours per week per unit. Limited to juniors/seniors. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP grading.

**197. Individual Studies in Nursing. (2 to 4)** Tutorial, one hour. Limited to junior/senior Nursing majors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**199. Directed Research or Senior Project in Nursing. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Health Promotion and Assessment across Lifespan. (4)** Lecture, four hours. Review and discussion of research, theories, clinical practice guidelines, healthcare systems, and policies that influence assessment of health and health behaviors, health promotion, and screening of disease across lifespan among diverse populations in multiple settings in communities for advanced practice nurse (clinical nurse specialist and nurse practitioner). Letter grading.

**202. Philosophy of Nursing Science. (4)** Lecture, four hours. Focus on philosophy of nursing science by exploring genealogies of thought that underpin epistemological assumptions about knowledge. Examination of philosophical concepts that shape discipline of nursing in relation to their influence on scientific reasoning and methods of inquiry, both quantitative and qualitative, used by nurse scientist to create new knowledge. Analysis of contemporary schools of thought (modern and postmodern) in relation to

nursing scholarship as well as role of nurse scientist as leader in policy development in greater health care milieu. Letter grading.

**204. Research Design and Critique. (4)** Lecture, 90 minutes; discussion, 90 minutes. Complex research designs and analysis of multiple variables and research utilization. Emphasis on techniques for control of variables, data analysis, and interpretation of results. Focus on in-depth analysis of interrelationship of theoretical frameworks, design, sample selection, data collection instruments, and data analysis techniques. Content discussed in terms of clinical nursing research problems and application to clinical settings. Letter grading.

**205A. Introduction to Qualitative Methods in Research. (4)** Lecture, four hours. Prerequisite: course 202. Introduction to qualitative research design in nursing science. Examination of major methodologies that guide qualitative research in relation to various strategies for data collection (interviews, participant observation, focus groups), data analysis, and data interpretation. Scientific rigor and ethical concerns for research with human participants critically examined. Letter grading.

**205B. Advanced Qualitative Research: Grounded Theory Methodology I. (4)** Lecture, four hours. Prerequisite: course 205A or equivalent approved by instructor. Students design and implement qualitative project study based on grounded theory methodology. Symbolic interactionism and constructivism as foundation with grounded theory as guide to recruit small sample, collect data through interviews and observations, and simultaneously analyze data through inductive coding and memoranda writing. Employment of constant comparison and examination of key elements of self-reflexivity and research ethics. Letter grading.

**205C. Advanced Qualitative Research: Grounded Theory Methodology II. (4)** Lecture, four hours. Prerequisites: courses 205A, 205B, or equivalent as approved by instructor. Advanced techniques for simultaneous collection and analysis of qualitative data. Employment of advanced levels of coding based on constructivist grounded theory methodology and situational analysis. Development of conceptual formulation (or grounded theory) based on pilot project data collected and analyzed as part of course. Letter grading.

**206A. Nursing Concept Development. (2)** Lecture, two hours. Prerequisites: course 202 or philosophy of science (may be taken concurrently), four units of nursing theory. Examination of history of conceptual and theoretical thinking in nursing and contextual issues that continue to influence development of nursing knowledge and nursing science. Application of skills fundamental to concept analysis and development in nursing and integral to use in nursing theory and research. Letter grading.

**206B. Nursing Theory Development. (2)** Lecture, two hours. Prerequisites: courses 202 or philosophy of science (may be taken concurrently), 206A. Preparation: 4 units of nursing theory. Critical analysis of role of theory and theoretical frameworks in developing nursing research. Application of skills fundamental to development of theory in nursing and integral to use of theory in nursing research. Letter grading.

**207. Quantitative Research Designs of Clinical Phenomena. (3)** Lecture, two hours; discussion, one hour. Prerequisites: courses 202, 206A, 210A, 210B, Biostatistics 100B. Introduction to wide array of quantitative research study designs. In-depth examination of dynamic interaction between research question and process and theoretical approaches to experimental- and many quasi-experimental- and non-experimental-study designs. Examination of potential threats to validity of and other design characteristics that are associated with research-study designs. Letter grading.

**208. Research in Nursing: Measurement of Outcomes. (3)** Lecture/discussion, three hours. Prerequisites: courses 202, 205A, 206A, 206B, 207, 210A, 210B, Biostatistics 100A, 201A. Advanced discussions of psychosocial, behavioral, and biophysical measurement and analysis in nursing research. Analysis of psychometrics, reliability, and internal validity of research instruments in relation to outcomes in nursing research. Letter grading.

**209. Human Diversity in Health and Illness. (4)** Lecture, four hours. Human diversity in response to illness that nurses diagnose and treat, centering on culture and human belief systems associated with diverse orientations related to ethnicity and gender. Provides conceptual base that nurses can use in clinical practice, research, teaching, and administration. Letter grading.

**210A. Critical Review of State of Science in Nursing Research. (3)** Lecture, three hours. Prerequisite: doctoral standing or consent of instructor. In-depth exploration of state of science for health service, biological, vulnerable populations, and biobehavioral research topics. Students explore research on particular phenomena, analyze current and historical scholarly findings in literature, critique significance of focus on this phenomenon for nursing science, identify crucial and meaningful gaps in knowledge through systematic review of research literature, and provide recommendations for future nursing research in biologic, biobehavioral, vulnerable populations, and health services research. Letter grading.

**210B. State of Science in Nursing: Critical Synthesis of Literature. (3)** Lecture, three hours. Prerequisite: doctoral standing or consent of instructor. In-depth analysis of published research relevant for health service, biological, vulnerable populations, and biobehavioral topics. Students deepen and refine understanding of state of science and scholarship relevant to research area. Students broaden exploration and analysis of identified gaps in current knowledge through advancing systematic review, critique, and synthesis of research literature. Letter grading.

**211. Women's Health Primary Care. (2 to 4)** Lecture, three hours; discussion, one hour. Theory and research on assessment and management of women's health issues during reproductive years. Clinical topics include gynecology, family planning, pregnancy, and postpartum care, with emphasis on health promotion of women during reproductive years in primary care settings. Letter grading.

**212. Family Healthcare Perspectives. (2)** Lecture, two hours. Overview of conceptual frameworks related to contemporary family structure and functioning, with particular emphasis on health. Family is defined broadly to include nontraditional families; consideration of cross-cultural views of families as well. Identification of limitations of current theory and research related to family study and applicability of current knowledge to various problems encountered in care of families. Letter grading.

**213. Worker Health and Safety: Role and Theory. (4)** Lecture, four hours. Occupational and environmental health nursing practice and research related to workplace health and safety, work/family life, environment, and health. Letter grading.

**214. Seminar: Advanced Concepts in Oncology Nursing. (4)** Seminar, four hours. Designed for adult/gerontology acute care, gerontologic, and family nurse practitioners and clinical nurse specialists. Comprehensive overview of oncologic care. Advanced practice nursing, with emphasis on theories and research related to prevention, detection, health history/risk assessment, cancer diagnosis and staging, treatment, rehabilitation, oncologic emergencies, genetics, and psychosocial issues to provide emotional and family-focused care related to solid tumors and hematologic malignancies. In-depth investigation of symptom management (nausea and vomiting, dyspnea, fatigue, cognitive dysfunction, anemia, immunosuppression, anxiety, depression). Evidence-based practice guidelines provide comprehensive review of health promotion, acute, chronic, and late effects, and psychological concepts in long-term survivorship. Letter grading.

**216A-216B-216C. Adult/Gerontology Concepts for Advanced Practice Registered Nurses in Acute Care I, II, III. (4-4-4)** Lecture, four hours. Prerequisites: courses 200, 231. Corequisite for course 216A: course 224. Course 216A is requisite to 216B, which is requisite to 216C. Assessment and management of health problems affecting adult/gerontology population from late adolescence to senescence in acute care settings. Synthesis of knowledge from advanced courses

in pathophysiology, pharmacotherapeutics, health promotion, and evidence-based psychosocial care and cultural constraints. Letter grading.

**220. Theories of Instruction and Learning in Nursing. (3)** Lecture, two hours. Theories of learning, curriculum and program development, and principles and techniques of evaluation. Examination of educator role of advanced practice nurse in variety of settings and with diverse cultural and socioeconomic groups. Opportunities provided for skill development in use of computer-based information systems and development of instructional aids. Letter grading.

**223. Childhood Development: Research and Application to Nursing. (3)** Lecture, three hours. Critique and evaluation of current research and theory in child development and their application to care of children. Provides scientific basis for understanding human growth and development, anticipating problems, and managing barriers to growth and development throughout childhood. Letter grading.

**224. Advanced Pharmacology for Advanced Practice Registered Nurses. (5)** Lecture, five hours. Requisite: course 231. In preparation for prescriptive authority, focus on major drug classes and their mechanisms of action, pharmacokinetics, adverse effects, and clinical uses. Advanced knowledge of and skills in pharmacology for clients/patients with stable acute or chronic conditions. Letter grading.

**225A-225B. Advanced Pharmacology I, II. (3-2)** Lecture, three hours (course 225A) and two hours (course 225B). Course 225A is requisite to 225B. Emphasizes basic pharmacological principles in addition to clinical knowledge and skills necessary for patient-centered care with stable acute or chronic conditions. Focus on major pharmacological classes, their mechanism of action, pharmacokinetics, indications, and adverse effects. Discussion of quality and safety of pharmacological interventions in clinical practice, with emphasis on collaborative teamwork (i.e. nurses, physicians, pharmacists) and evidence-based practice (e.g. current guidelines). Letter grading.

**229A-229B-229C. System-Based Healthcare I, II, III. (1-1-1)** Seminar, two hours. System-based healthcare where students focus on context of medical decision making, including team, hospital, culture, politics, economics, law, and personal bias. Topics include legal, political, and moral aspects of sexual assault and abortion; economics and cultural considerations involved in end of life decision making; and public and personal interpretation of what constitutes conflict of interest. Consideration of how medical decisions are influenced by context of care (system-based practice) and emotional responses and preferences (professionalism). S/U grading.

**230A. Advanced Pathophysiology I. (3)** Lecture, three hours. Requisites: courses 3, 13, or equivalent taken within last three years. Course 230A is requisite to 230B. In-depth examination of general pathophysiological processes that underlie human illness and disease across all body systems including cellular adaptation, fluid and electrolyte balance, acid-base balance, immunity, inflammation, infection, wound healing, genetics, neoplasms, temperature regulation, somatosensory and pain processing, stress and disease, and activity and fatigue regulation. Detailed study and analysis of manifestations of, and responses to, processes of cellular and molecular pathology at extracellular, system and human levels. Letter grading.

**230B. Advanced Pathophysiology II. (2)** Lecture, two hours. Requisite: course 230A. In-depth examination of pathophysiological processes that underlie human illness and disease, with detailed study of these in major body systems. Examination of manifestations of, and responses to, processes of cellular and molecular pathology at cellular, tissue, system, and human levels. Letter grading.

**231. Advanced Pathophysiology for Advanced Practice Registered Nurses. (4)** Lecture, four hours. In-depth examination of pathophysiological processes that underlie human illness and disease, with detailed study of these in major body systems. Analysis of manifestations of, and responses to, processes of cel-

lular and molecular pathology at extracellular, system, and human levels with implications for advanced practice registered nursing. Letter grading.

**232. Human Responses to Aging and Chronic Illness. (2 or 4)** Lecture/discussion, four hours. Pathophysiological concepts and nursing management of older adults who are healthy or who have disability and/or chronic illness. Nursing aspects of selected dysfunctions and implications for advanced practice in gerontological nursing. Letter grading.

**233. Human Responses to Aging and Chronic Illness. (2 or 4)** Lecture/discussion, four hours. Biopsychosocial concepts and nursing management of healthy, disabled, and/or chronically ill older adults, addressing pathophysiological aspects of common health problems. Implications for advanced practice in gerontological nursing. Letter grading.

**236. Pediatric Primary Care for Family Nurse Practitioners. (4)** Lecture, four hours. Requisite: course 200. Preparation of family nurse practitioners to assume responsibility for health promotion and illness prevention, and maintenance and management of common developmental, behavioral, acute, and chronic health problems of infants, children, and adolescents in primary healthcare settings. Presentation of condition or disease, etiology and incidence, clinical findings, differential diagnosis, pharmacologic and treatment management, complications, and preventive and patient education measures. Examination of primary child health delivery model reliant on evidence-based knowledge, practice protocols, consultation, referral, and community resources. Letter grading.

**237A-237B. Assessment and Management in Pediatric Acute Care I, II. (3-3)** Lecture, three hours. Two-course sequence for acute care pediatric nurse practitioner student. Focus on pathophysiology of specific disease processes, pharmacologic knowledge, clinical decision-making, and treatment modalities in managing complex acute, critical, and chronic health conditions in infants, children, and adolescents. Cultural sensitivity, child development, family support, ethical issues, and palliative care/end of life care integrated into select acute/chronic conditions. Lectures and other learning activities demonstrate application and evaluation of evidence-based research and clinical guidelines in pediatric population. Letter grading. **237A.** Requisites: courses 238A, 238B. Corequisite: course 437A. **237B.** Requisites: courses 238A, 238B, 237A, 437A. Corequisite: 437B.

**238A. Assessment and Management in Pediatric Primary Care. (4)** Lecture, four hours. Requisite: course 200. Anticipatory guidance for children and families to promote child wellness and assessment, diagnosis, and management of common pediatric illnesses. Demonstration of application and evaluation of evidence-based research and clinical guidelines in pediatric population. Letter grading.

**238B. Assessment and Management in Pediatric Chronic Care. (4)** Lecture, four hours. Requisite: course 238A. Assessment, diagnosis, and management of common pediatric illnesses. Demonstration of application and evaluation of evidence-based research and clinical guidelines in pediatric population. Letter grading.

**239A-239B-239C. Adult/Gerontology Primary Healthcare for Advanced Practice Registered Nurses I, II, III. (4-4-4)** Lecture, four hours. Requisites: courses 200, 224, 231. Course 239A is requisite to 239B, which is requisite to 239C. Assessment, diagnosis, and management of common episodic and chronic adult health problems and conditions, including urgent care, for family and adult/gerontology primary care nurse practitioners. Application and evaluation of evidence-based interventions and clinical guidelines in diverse adult populations (late adolescence through old age). Analysis of health promotion, maintenance, and restoration approaches in special populations, including developmental, cultural, gender, life-stage perspectives, and functional impairment. Letter grading.

**242F. Biobehavioral Foundations of Neuropsychiatric Nursing Care. (4)** Lecture, four hours. Biologic and behavioral research from variety of disciplines, including nursing, for application to treatment of neuropsychiatric dysfunction. Exploration of research un-

derlying treatment interaction in cognitive, addictive, and affective dysfunctions, with emphasis on developing a biobehavioral nursing approach. Letter grading.

**245. Theoretical Foundations of Clinical Nurse Specialist Practice. (4)** Lecture/discussion, four hours. Theoretical foundations of clinical nurse specialist practice, including systems theory, behavioral theories, consultation theory, change theory, and models of research utilization. Emphasis on application of relevant theories to clinical nurse specialty practice roles in healthcare systems through case-study analysis, with focus on application to clinical practice settings which include culturally diverse populations. Letter grading.

**249. Meeting Health-Related Needs in Underserved Populations. (4)** Lecture, four hours. Examination of systematic barriers within healthcare settings that limit access to those in greatest need of culturally appropriate interventions. Unmet healthcare needs often result in health disparities and compromised quality of life among underserved, low income, uninsured, marginalized populations. Analysis of current evidence-based strategies and interventions designed to address these clinical problems and improve outcomes in culturally competent manner. Presentation of context of healthcare financing, limited access, and public policy. Letter grading.

**250. Ethical Issues, Social Justice, and History of Nursing. (5)** Lecture, five hours. Interplay of social, economic, cultural, legal, and political forces in the U.S. form background for study of ethical issues related to role of nurses as advocates for social justice and safe, effective, high-quality patient-centered care in contemporary society today. Analysis situated within context of history of nursing, with emphasis on human rights, civil rights, and patient rights. Discussion of evolution of professional nursing within healthcare arenas in relation to ethical principles, cultural competence, evidence-based practice, and human diversity. Letter grading.

**C255. Global Health Elective: Globalization, Social Justice, and Human Rights. (3)** Seminar, two hours. Exploration of theories, issues, debates, and pedagogy associated with globalization, social justice, and human rights and how these perspectives influence human health and well-being. Provides students with unique opportunity to explore these topics within classroom, via Internet and other technologies, and in other classrooms located around globe. Students, through collaborative projects with peers around world, reflect on how globalization shapes and transforms local communities and national cultures. Concurrently scheduled with course C155. Letter grading.

**260. Secondary Prevention. (4)** Lecture, four hours. Requisites: courses 252A, 252B. Review of theory and evidence-based secondary prevention screening strategies for early detection of disease to reduce morbidity and mortality across lifespan and to develop nursing care interventions. Use of integrated conceptual frameworks addressing individual, family, community, health care systems factors, social environmental systems, and policies to identify factors influencing screening and resulting health disparities in order to adapt plans for care. Nursing interventions for promoting screening address barriers and facilitators, controversies, as well as utilize existing strengths and supportive mechanisms tailored to populations. Discussion and application of specific micro-level factors including screening for physical health and mental health disorders along with associated behavioral factors and macro-level, built environment influences. Letter grading.

**264. Professional Role Issues in Advanced Practice Registered Nursing. (3)** Lecture, three hours. Requisite: course 418A or 438A or 439A. Assessment of organizational, legal, ethical, and healthcare policy issues in relation to delivery of healthcare services by advanced practice registered nurses in evolving healthcare system. Letter grading.

**267. Health Care Policy. (3)** Lecture, three hours. Requisites: for MECN students, courses 266, 268, 269; for dual NP/CNS students, courses 245, 269, 445. Analysis of health care policies and how policies impact patient outcomes, clinical practice, health care

delivery, and clinician well-being. Concepts related to policy making, formulating health care policy, how to affect political processes, and stakeholder involvement in policy decision making and implementation. Development of understanding of increasing levels of public, governmental, and third party participation in and scrutiny of health care system. Discussion of assembly bills effect on nursing. Emphasis on clinical nurse leader role in health policy and advocacy. Satisfies course requirement for CNL certification. Letter grading.

**268. Leadership in Health Care Systems. (4)** Lecture, four hours. Requisites: courses 250, 465A, 465B. Discussion of use of systems theory in providing patient-centered value-added care. Health care practitioners learn to use critical thinking and decision making to coordinate and deliver quality, cost-effective patient care. Discussion of different modes of organizing nursing care within micro-, meso-, and macro-levels of health care systems; managing care within multidisciplinary team framework; and promoting effective teamwork that enhances patient outcomes, improves staff efficiency, and reduces costs. Emphasis on system theory, problem solving and decision making, nursing care delivery models, delegation, and team strategies in relation to clinical nurse leader. Satisfies course requirement for CNL certification. Letter grading.

**269. Quality Improvement and Population-Based Quality of Practice. (4)** Lecture, four hours. Requisites: courses 268, 465A, 465B, 465C. Focus on principal elements related to quality improvement theories and ways in which quality management impacts delivery of patient-centered and value-driven care. Discussion of concepts including improving system performance, efficient use of fiscal resources, quality improvement, and patient-population quality practice at organizational level. Review of methods to improve patient-care outcomes such as organizational support, effective teamwork, and quality improvement. Emphasis on quality management, patient safety, mitigating chances of adverse outcomes, evidence-based practice, cost-effective decision making, resource management, and external impacts on quality control. Satisfies course requirement for CNL certification. Letter grading.

**288. Variable Topics in Nursing. (4)** Lecture, three hours; discussion, one hour. Variable topics; consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit. S/U or letter grading.

**291A. Applied Statistics and Analytics for Health Sciences Research I. (4)** Lecture, three hours; laboratory, one hour. Requisite: doctoral standing or consent of instructor, introductory statistics course. Introduction to applied statistics. Students gain skills to understand, conduct analyses, and interpret results of analyses to answer simple comparative and relationship research questions relevant to health science research. Topics include statistical inference and probability, distributions, effect size, analyses for description, data visualization, parametric and nonparametric tests for simple comparisons and relationships, and research database design and management. Students conduct analyses with statistical software and interpret results from their analyses and from research reports in literature. Letter grading.

**291B. Applied Statistics and Analytics for Health Sciences Research II. (4)** Lecture, three hours; discussion, one hour. Requisites: course 291A, doctoral standing, or consent of instructor. Focus on linear statistical models and other analytic techniques to examine complex relationships and comparisons. Approach primarily from applications and interpretation perspective. Students evaluate statistical/analytical results from research literature, analyze data using quantitative multivariate techniques, and interpret results. Introduction of concepts and interpretation of broad range of multivariate statistical and analytical approaches, including regression (linear and logistic regression and survival models), factor analysis, multi-factor and repeated measures analysis of variance, mixed effects models, machine-learning analytic techniques for big data, and other selected approaches. Students utilize several of approaches to analyze research data. Letter grading.

**291C. Special Topics in Applied Statistics and Analytics for Health Sciences Research III. (4)** Lecture, three hours; discussion, one hour. Requisites: course 291B, doctoral standing, or consent of instructor. Focus on statistical models and analytic techniques to examine complex relationships and comparisons. Approach primarily from applications and interpretation perspective. Students evaluate analytical results from research literature, and analyze data and interpret results using selected quantitative approaches. Introduction of concepts and interpretation of results from selected quantitative approaches that can address complex nursing and other health sciences research questions. Approaches to be studied include selected topics from mediation models, interactions and effect modification, structural equation models, mixed effects regression models for longitudinal or multilevel data, secondary analysis, weighted survey data, meta analysis, genomic statistics, artificial intelligence/machine learning approaches for big data. Letter grading.

**295A. Grant Writing I: Scientific Proposal Development. (3)** Seminar, three hours. Requisites: courses 202, 205A, 206A, 210A, 210B, Biostatistics 100B. Introduction to grant writing, with focus on preparing application for National Student Research Award (NRSA) or similar award. Discussion of requirements of various extramural and specialty organization funding sources and identification of evaluation criteria. Emphasis on role of external funding to facilitate doctoral and postdoctoral research, research activities, and professional development. Letter grading.

**295B. Grant Writing II: Scientific Proposal Development. (4)** Seminar, four hours. Requisites: courses 202, 205A, 206A, 210A, 210B, 295A, Biostatistics 100B. Designed to develop proposals to request for proposals (RFPs) from federal or state level and non-profit organizations. Incorporation of requirements of various extramural and specialty organizations, intramural funding sources, and evaluation criteria in grant writing. Emphasis of role of external funding to facilitate doctoral and post-doctoral research, research activities, and professional development. Letter grading.

**295C. Nursing Science Seminars. (2)** Seminar, two hours. Requisite: course 295A. Introduction to grant writing, with focus on preparing applications for National Student Research Award. Discussion of requirements of various extramural and specialty organization funding sources, and evaluation criteria identified. Role of external funding to facilitate doctoral and post-doctoral research, research activities, and professional development. S/U grading.

**M298. Interdisciplinary Response to Infectious Disease Emergencies: Nursing Perspective. (4)** (Same as Community Health Sciences M256, Medicine M256, and Oral Biology M256.) Lecture, three hours; discussion, one hour. Designed to instill in professional students ideas of common emergency health problems and coordinated response, with specific attention to bioterrorism. Examination of tools to help students prevent, detect, and intervene in infectious disease emergencies. Interdisciplinary sessions also attended by students in Schools of Dentistry, Medicine, and Public Health during weeks two through five. Letter grading.

**299A. Ethical Conduct in Research. (2)** Seminar, two hours. Examination of historical and current issues of ethical integrity at each stage of research process in relation to conflicts of interest, data sharing, responsible authorship, data management, and handling of misconduct in research with both human and animal subjects. Systematic instruction on ethical and responsible conduct of research and protection of research subjects as students create their own application for research. Letter grading.

**299B. Nursing Research Mentorship. (1)** Seminar/discussion, one hour; research/laboratory, three hours. Requisites: courses 202, 205A, 206A, 206B, 207, 208, 210A, 210B, 295A, Biostatistics 100A, 210A. Special topics course for doctoral students who have completed required coursework and are preparing to advance to doctoral candidacy. Discussion topics range from identifying areas of research/laboratory experiences, and engagement in planning for and evaluation of students' mentored experiences on weekly basis. Letter grading.

**299C. Nursing Research/Laboratory Experiences. (4)** Seminar/discussion, one hour; research/laboratory, three hours. Requisites: courses 202, 206. Seminars and research/laboratory-based experiences to assist students to prepare for careers as scientists, with focus on research methodology and mentorship. S/U grading.

**299D. Nursing Education Seminar. (2)** Seminar, two hours; discussion, one to two hours. Seminar to assist students to prepare for careers in academic settings, with focus on teaching. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**401. Scientific Underpinnings for DNP Practice. (3)** Lecture/seminar, three hours. Requisite: doctoral standing. Develops critical thinking skills of DNP students in evaluating state of nursing science and its impact on advanced nursing practice at doctoral level. Introduction and exploration of role of DNP in broader health care environment and correlation to advanced practice nursing roles. Discussion of scientific theories and conceptual frameworks forming foundations of knowledge and clinical scholarship in doctoral nursing practice. Theoretical concepts and strategies that integrate practice inquiry into various roles of advanced practice nurse incorporated throughout course. Emphasis placed on professional writing competencies as related to scientific underpinnings for DNP practice. Letter grading.

**402. Clinical Scholarship for Evidence-Based Practice. (3)** Lecture/seminar, three hours. Requisite: doctoral standing. Designed to provide DNP students with skills to critically appraise and translate evidence into practice. Evidence-based practice appraisal frameworks are used to promote understanding of scientific information and support critical decision-making in health care. Students learn to formulate clinically relevant focused question(s) that guide their DNP project proposal. Letter grading.

**403. Organizational and Systems Leadership for Quality Improvement. (3)** Lecture/seminar, three hours. Requisite: doctoral standing. Provides interdisciplinary background in sciences of quality improvement and patient safety within health care settings. Addresses history and evolution of quality movement, theories and thought leaders, current quality of care issues, eliminating health disparities, culturally and linguistically appropriate services, research and innovations, intervention strategies, and instruments, as well as analysis of quality management system models in health care. Evaluation of principles of change theory, strategic planning, organizational culture, program development and implementation. Special focus placed on role of DNP leader in developing and leading clinical quality and safety initiatives. Letter grading.

**404. Analytical Methods for Evidence-Based Practice. (3)** Lecture/seminar, three hours. Requisite: doctoral standing. Advanced concepts on research methods and measurement strategies that are applicable to support advanced practice nurse to access, evaluate, and utilize data from various sources including research, quality improvement initiatives, and information technology origins to achieve improvements in care delivery and practice. Letter grading.

**405. Communication and Ethics for DNP Practice. (2)** Seminar, two hours. Requisite: doctoral standing. Introduction to organizational leadership and ethics in context of interdisciplinary practice in complex health care systems. Letter grading.

**406. Clinical Prevention and Population Health. (3)** Lecture/seminar, three hours. Requisite: doctoral standing. Enables DNP students to integrate, synthesize, and apply key concepts introduced in previous coursework in order to incorporate core components into practice. Evidence-based practice, clinical preventive service and health promotion, health systems and policy, and population health and community aspects of practice are emphasized through focus on current health issues. Letter grading.



**407. Financial Management and Cost Analysis of Health Care. (3)** Lecture/seminar, three hours. Requisite: doctoral standing. Designed to expose DNP students to foundational understanding of how health care is financed in U.S. Exploration of various types of health care organizations and delivery systems. Health care finance is discussed at national, state, and specific health care agencies. Letter grading.

**408. Interprofessional Collaboration for Improving Patient and Population Health Outcomes. (3)** Lecture/seminar, three hours. Requisite: doctoral standing. Designed to acquaint DNP students with contemporary issues in health care professions and expose students to interprofessional collaborative practice concepts and competencies. Debate of barriers and facilitators to achieving model collaborative practice. Exploration of innovative opportunities to change current practice. Exploration of students' personal belief systems about high-level collaboration and team performance. Addresses relationship between interprofessional education, practice, and health care outcomes and processes to prepare DNP graduate to assume leadership roles. Letter grading.

**409. Health Care Policy for Advocacy in Health Care. (3)** Seminar, three hours. Requisite: doctoral standing. Prepares students to become engaged and committed to leadership role in health policy. Students gain principles, skills, and knowledge to advocate for patients, profession, and health care systems gained through analysis of existing policies, programs, and guidelines that govern health care services and practice. Within ethical framework, discussion of issues of equity, health disparities, access to care, and quality of care. Through development of policy brief, students recognize role of political activism as it relates to DNP practice. Letter grading.

**410. Dissemination and Translation of Clinical Scholarship. (2)** Lecture/seminar, two hours. Requisite: doctoral standing. Students develop DNP competency through presentation of their DNP scholarly project, self-reflection through career plan, and critical evaluation of their DNP program. Letter grading.

**411. Information Technology for Nursing Practice. (2)** Lecture, two hours. Requisite: doctoral standing. Prepares students to obtain knowledge and skills related to information technology and patient care technology. Prepares DNP graduates to apply new knowledge, manage individual and aggregate information, and assess efficacy of patient care technology appropriate to specialized area of practice. Allows students to use information technology/system resources to implement quality improvement initiatives, support practice administrative decision-making. Students gain ability to demonstrate conceptual and technical skills to develop and execute evaluation plan involving data extraction from practice systems and databases. Letter grading.

**416A-416B. Adult/Gerontology Acute Care Nurse Practitioner Practicum I, II. (2-6)** Clinic practicum, six hours (course 416A) and 16 hours (course 416B). Enforced requisite: course 440. Course 416A is enforced requisite to 416B. Assessment and therapeutic interventions for selected health problems in acute adult/gerontology populations. Developmental, health promotion, and maintenance needs of clients in relation to family, social, and cultural structures. For course 416A, students complete minimum of 40 direct clinical hours; for course 416B, they complete minimum of 160 direct clinical hours. Letter grading.

**416C-416D. Adult/Gerontology Acute Care Nurse Practitioner Practicum III, IV. (6 each)** Clinic practicum, 16 hours. Enforced requisite: course 416B. Course 416C is enforced requisite to 416D. Assessment and therapeutic interventions for selected health problems in acute adult/gerontology populations. Developmental, health promotion, and maintenance needs of clients in relation to family, social, and cultural structures. Students complete minimum of 160 direct clinical hours. Letter grading.

**416E. Adult/Gerontology Acute Care Nurse Practitioner Practicum V. (6 to 8)** Clinic practicum, 15 to 24 hours. Enforced requisite: course 416D. Assessment and therapeutic interventions for selected health problems in acute adult/gerontology populations. Developmental, health promotion, and maintenance needs of

clients in relation to family, social, and cultural structures. Students complete minimum of 160 to 240 direct clinical hours. Letter grading.

**429A. Family Nurse Practitioner Practicum I. (4)** Clinic practicum, 12 hours. Requisites: courses 200, 440. First of five clinical practica designed to prepare family nurse practitioners with knowledge, skills, and competencies necessary to assume role of primary healthcare provider for families and individual patients across lifespan. Use of family-focused framework of care for those who experience common acute and chronic illness, developmental transitions, and health problems. Emphasis on health promotion, maintenance, and risk reduction interventions across wide range of diverse populations. Focus on context of community, cultural awareness, and practice in interdisciplinary teams. Students complete minimum of 80 direct clinical hours. Letter grading.

**429B. Family Nurse Practitioner Practicum II. (4)** Clinic practicum, 12 hours. Requisite: course 429A. Second of five clinical practica designed to prepare family nurse practitioners with knowledge, skills, and competencies necessary to assume role of primary healthcare provider for families and individual patients across lifespan. Use of family-focused framework of care for those who experience common acute and chronic illness, disability, and developmental transitions. Emphasis on health promotion, maintenance, and risk reduction interventions across wide range of diverse populations. Preparation in variety of clinical settings to implement evidence-based practice guidelines and to critically analyze and adapt healthcare interventions based on individualized assessments of individual/family needs. Focus on context of community, cultural awareness, and practice in interdisciplinary teams. Students complete minimum of 80 direct clinical hours. Letter grading.

**429C-429D-429E. Family Nurse Practitioner Practicum III, IV, V. (6-6-9)** Clinic practicum, 18 hours (courses 429C, 429D) and 27 hours (course 429E). Requisite for course 429C: course 429B; for 429D: course 429C; for 429E: course 429D. Third, fourth, and fifth of five clinical practica designed to prepare family nurse practitioners with knowledge, skills, and competencies necessary to assume role of primary healthcare provider for families and individual patients across lifespan. Use of family-focused framework of care for those who experience common acute and chronic illness, disability, and developmental transitions. Preparation in variety of clinical settings to implement evidence-based practice guidelines and to critically analyze and adapt healthcare interventions based on individualized assessments of individual/family needs. Focus on context of community, cultural awareness, and practice in interdisciplinary teams. For courses 429C and 429D, students complete minimum of 160 direct clinical hours; for course 429E, they complete minimum of 240 direct clinical hours. Letter grading.

**437A. Acute Care Pediatric Nurse Practitioner Clinical Practicum I. (6)** Clinic practicum, 18 hours. Requisites: courses 238A, 238B, 438A, 438B. Corequisite: course 237A. Offers clinical opportunity to apply advanced knowledge of pathophysiology, pharmacology, current research, and diagnostic skills in caring for infants, children, and adolescents with complex acute, critical or chronic health conditions. Emphasis on integration of acute care pediatric nurse practitioner role in implementation of comprehensive management plan for children with complex acute, critical or chronic health conditions under supervision of faculty and preceptors. Letter grading.

**437B. Acute Care Pediatric Nurse Practitioner Clinical Practicum II. (8)** Clinic practicum, 26 hours. Requisites: courses 237A, 437A, 441. Corequisite: course 237B. Offers clinical opportunity to apply advanced knowledge of pathophysiology, pharmacology, current research, and diagnostic skills in caring for infants, children, and adolescents with complex acute, critical or chronic health conditions. Emphasis on integration of acute care pediatric nurse practitioner role in implementation of comprehensive management plan for children with complex acute, critical or chronic health conditions under supervision of faculty and preceptors. Letter grading.

**437C. Acute Care Pediatric Nurse Practitioner Clinical Practicum III. (8)** Clinic practicum, 26 hours. Requisites: courses 237A, 237B, 437A, 437B, 441. Offers clinical opportunity to apply advanced knowledge of pathophysiology, pharmacology, current research, and diagnostic skills in caring for infants, children, and adolescents with complex acute, critical or chronic health conditions. Emphasis on student assuming primary responsibility for assessment, diagnosis, management, and evaluation of care provided to children and families in acute-care setting under supervision of faculty and preceptors. Students complete minimum of 220 direct clinical hours. Letter grading.

**438A. Primary Care Pediatric Nurse Practitioner Clinical Practicum I. (3 to 4)** Clinic practicum, 10 to 12 hours. Corequisite: course 238A. Comprehensive assessment and anticipatory guidance for children and families to promote child wellness. Clinical practicum, seminar, and other learning activities to demonstrate application and evaluation of evidence-based research and clinical guidelines in promotion of pediatric wellness. Students complete minimum of 100 direct clinical hours. Letter grading.

**438B. Primary Care Pediatric Nurse Practitioner Clinical Practicum II. (3 to 6)** Clinic practicum, 10 to 18 hours. Corequisite: course 238B. Second course in three clinical practicum sequence with emphasis on advanced comprehensive assessment, diagnosis, and management of common pediatric illnesses and developmental and/or behavioral problems. Clinical practicum, seminar, and other learning activities demonstrate application and evaluation of evidence-based research and clinical guidelines in common pediatric illnesses. Letter grading.

**438C. Primary Care Pediatric Nurse Practitioner Clinical Practicum III. (6 to 10)** Clinic practicum, 20 to 32 hours. Corequisite: course 238C. Third course in three clinical practicum sequence with emphasis on advanced comprehensive assessment, diagnosis, and management of chronic and acute pediatric illnesses in ambulatory setting. Clinical practicum, seminar, and other learning activities demonstrate application and evaluation of evidence-based research and clinical guidelines in pediatric chronic and acute illnesses. Letter grading.

**439A. Adult/Gerontology Primary Care Nurse Practitioner Practicum I. (4)** Clinic practicum, 12 hours. Requisites: courses 224, 231. Corequisite: course 239A. Advanced practice nursing in adult/gerontology. Beginning-level assessment and therapeutic interventions for health problems in selected populations. Developmental, health promotion, and maintenance needs of clients in relation to family, social, and cultural structures. Students complete minimum of 80 direct clinical hours. Letter grading.

**439B. Adult/Gerontology Primary Care Nurse Practitioner Practicum II. (6)** Clinic practicum, 18 hours. Requisite: course 439A. Corequisite: course 239B. Continuation of course 439A for advanced practice nurses, with emphasis on nursing management of acute and chronic health problems in selected populations. Developmental needs of clients in relation to family, social, and cultural structures. Students complete minimum of 80 direct clinical hours. Letter grading.

**439C. Adult/Gerontology Primary Care Nurse Practitioner Practicum III. (6)** Clinic practicum, 18 hours. Requisite: course 439B. Corequisite: course 239C. Third clinical practicum course for advanced practice nurses, with focus on nursing assessment and intervention in common illness-associated symptoms and complex patient/family presentations. Analysis, evaluation, and integration of current theory and research to provide basis for development of interventions and treatment for acute and chronic problems across lifespan. Students complete minimum of 160 direct clinical hours. Letter grading.

**439D. Adult/Gerontology Primary Care Nurse Practitioner Practicum IV. (6)** Clinic practicum, 18 hours. Requisites: courses 239C, 439C. Residency in advanced practice role where students assume primary responsibility for planning, managing, and evaluating care of clients in specialty setting. Emphasis on application and integration of theory, research, and clinical

knowledge in advanced practice role. Students complete minimum of 160 direct clinical hours. Letter grading.

**439E. Adult/Gerontology Primary Care Nurse Practitioner Practicum V. (9)** Clinic practicum, 27 hours. Enforced requisites: courses 439A through 439D. Designed to prepare adult/gerontology primary care nurse practitioners with knowledge, skills, and competencies necessary to assume role of primary health-care providers for young adults, adults, and older adults. Use of patient-centered framework of care for those who experience common acute and chronic illness, disability, and developmental transitions. Preparation in variety of clinical settings to implement evidence-based practice guidelines and to critically analyze and adapt healthcare interventions based on individualized assessments, with emphasis on context of community, cultural awareness, and practice in interdisciplinary teams. Students complete minimum of 240 direct clinical hours. Letter grading.

**440. Advanced Assessment and Clinical Diagnosis for Advanced Practice Nurses. (2)** Laboratory/clinic practicum, six hours. Practice foundations for advanced physical assessment and clinical diagnostic reasoning. Students conduct individualized patient- and symptom-focused assessments of health problems representative of diverse client populations. Emphasis on comprehensive and integrated critical analysis of symptom and focused history data, physical examination, selected laboratory data, and clinical diagnoses. Letter grading.

**441. Advanced Pediatric Diagnostics. (3)** Lecture/laboratory, three hours. Requisite: course 440. Designed for acute-care pediatric nurse practitioner students. Advanced diagnostic reasoning and skills in management of infants, children, and adolescents with complex acute, critical, and chronic health conditions. Focus on expanding knowledge of pediatric assessment and management of selected health conditions to aspects of diagnostic tests, test interpretation, and invasive procedures to stabilize or monitor acute, critical, or chronic pediatric patient. Lectures and other learning activities demonstrate application and evaluation of evidence-based research and clinical guidelines in pediatric population. Letter grading.

**444. Adult/Gerontology Acute Advanced Assessment and Clinical Diagnosis II. (2)** Clinic practicum, six hours. Enforced requisite: course 440. Practice foundations for advanced physical assessment and clinical diagnostic reasoning, with focus on diagnostic or therapeutic procedures and related indications, complications, and follow-up care in laboratory setting. S/U grading.

**445. Advanced Practice Registered Nursing: Clinical Nurse Specialist Practicum. (2 to 10)** Clinic practicum, six to 30 hours. Requisites: courses 220, 245. Practicum/residency where students gain skills and competencies to function collaboratively and autonomously to achieve high quality patient outcomes. Clinical nurse specialty (CNS) practice achieves this by working within three spheres of influence: patient/family, nursing personnel, and organizational systems utilizing multidisciplinary approach through application and integration of theory, research, and clinical knowledge. 17 units complete minimum of 500 unique CNS hours required for professional certification. Letter grading.

**450. Advanced Practice Registered Nursing: Clinical Elective Independent Study. (2 to 8)** Clinic practicum, eight hours. Clinical elective designed to enhance skills and competencies in student-selected advanced practice specialty or related practice dimension, with emphasis on application and integration of theory and evidence-based practice knowledge. S/U grading.

**461. Mental Health Nursing. (5)** Lecture, three hours; clinical, six hours. Requisites: courses 252A, 252B, 260, 465B. Knowledge development and skill assessment to promote mental health of individuals and communities. Exploration of research underlying assessment, diagnosis, and treatment of individuals with psychiatric disorders and pharmacotherapeutic and psychological treatment of individuals. Application of theory in clinical interpretation of assessment and di-

agnostic data for purpose of planning, implementing, and evaluating course of care for patients, both as individuals and cohorts. Letter grading.

**462. Maternity Nursing. (5)** Lecture, three hours; clinical, six hours. Requisites: courses 204, 260, 465A, 465B. Pathophysiological and psychosocial aspects of assessment and management for selected acute and emergent problems of maternity-newborn patients, with emphasis on social, cultural, and developmental influences and integration of basic knowledge of pathophysiology, diagnostics, pharmacology, therapeutic interventions, and communication concepts as applied to care of childbearing families. Application of theory, nursing process, evidence-based practice, and problem solving in clinical setting, interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating care for maternity and newborn patients, both as individuals and cohorts. Assessment, health maintenance, and management of symptomatology among childbearing women and newborns. Letter grading.

**463. Nursing Care of Geriatric Patients and Families. (3)** Lecture, two hours; clinical, one hour. Requisites: courses 252A, 252B, 465A. Addresses prevention and management of acute and chronic health problems of older adults. Theory content emphasizes assessment, goal setting, treatment planning, and evaluation of nursing care of older adults and their families with emphasis on psychosocial, cultural, and developmental influences. Students integrate knowledge of pathophysiology, pharmacology, stress and adaptation, adult development theory, therapeutic interventions, and communication concepts as applied to care of older adult patients and their families. Emphasis on concept of nurse as nurse scientist with critical and contextual thinking skills and diagnostic reasoning. Nursing process, ethical principles, clinical research, evidenced-based practice, and clinical thinking that maximize patient safety and quality care for older adults are employed during clinical experiences. Letter grading.

**464. Pediatric Nursing. (5)** Lecture, three hours; clinical, six hours. Requisites: courses 204, 260, 465A, 465B. Nursing assessment and management of acute, chronic, critical, and emergent illnesses in pediatrics with emphasis on social, cultural, and developmental influences. Integration of knowledge of pathophysiology, diagnostics, pharmacology, therapeutic interventions, family-centered care, and ethical and legal principles as applied to pediatrics. Students demonstrate leadership, evidence-based practice, problem-solving, and critical thinking strategies to improve patient safety, care quality, and health outcomes. Supervised practicum experience within setting of multidimensional team in clinical interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating nursing care in pediatrics. Effective communication, teamwork, and collaboration with disciplines across complex health care systems. Integration of information management and technology to facilitate effective communication and support clinical decision making. Letter grading.

**465A. Foundational Concepts for Tertiary Prevention and Care of Medical-Surgical Patients and Families. (4)** Lecture, three hours; clinical, three hours. Requisites: courses 174A, 230A, 250, 254A. Examination of nursing assessment and management of common health problems of adults. Theory content in basic assessment, health history, and diagnostic reasoning for selected health problems, with emphasis on social, cultural, and developmental influences. Integration of basic knowledge of pathophysiology, stress and adaptation, adult development theory, therapeutic interventions, and communication concepts as applied to care of medical and surgical patients and their families across adult lifespan. Introduction to concept of nurses as bedside scientists, with emphasis on critical and contextual thinking skills and diagnostic reasoning. Nursing process, ethical principles, clinical research, evidence-based practice, and clinical thinking that maximize patient safety and quality care employed during clinical experiences. Letter grading.

**465B. Tertiary Prevention and Care of Medical-Surgical Patients and Families. (6)** Lecture, four hours; clinical, six hours. Requisites: courses 225A, 230A, 230B, 252A, 252B, 254B, 465A. Pathophysiological and psychosocial aspects of assessment and management for selected acute and emergent problems of adult patients with complex illness including multifaceted assessment, health history, and diagnostic reasoning skills, and emphasis on social, cultural, and developmental influences. Integration of knowledge of pathophysiology, diagnostics, pharmacology, therapeutic interventions, patient safety, evidence-based practice, and communication concepts as applied to care of medical-surgical patients. Supervised practicum experience within settings of multidisciplinary teams directing care of medical-surgical clinical units, with focus on clinical interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating course of care for patients, both as individuals and cohorts. Letter grading.

**465C. Tertiary Prevention and Care of Complex Medical-Surgical Patients and Families. (8)** Lecture, four hours; clinical, 12 hours. Requisites: courses 204, 260, 465B. Examination of nursing assessment and management of acute and chronic health problems of acutely ill adults. Theory content in assessment, health history, and diagnostic reasoning with emphasis on social, cultural, and developmental influences. Integration of knowledge of pathophysiology, pharmacology, stress and adaptation, adult development theory, therapeutic interventions, patient safety, evidence-based practice, and communication concepts as applied to care of acutely ill medical-surgical patients, with complex and comorbid conditions, and their families. Concept of nurses as bedside scientists, with emphasis on critical and contextual thinking skills and diagnostic reasoning. Nursing process, ethical principles, clinical research, evidence-based practice, and clinical thinking that maximize patient safety and quality care for acutely ill adults employed during clinical experiences. Letter grading.

**467. Clinical Internship: Integration. (12)** Clinical, 36 hours. Requisites: courses 268, 461, 462, 463, 464, 465A, 465B, 465C. Supervised practicum experience within clinical setting as part of interdisciplinary health care team, with focus on application of theory in clinical setting and interpretation of assessment and diagnostic data for purpose of planning, implementing, and evaluating course of care for patients, both as individuals and cohorts. Students design and complete quality improvement project that contributes to unit's goals and objectives. Students implement advanced-level assessment, health maintenance, and management of symptomatology across lifespan. S/U grading.

**470A. DNP Scholarly Project Course I: Project Conceptualization and Planning. (2)** Lecture, two hours; clinical, four hours. Requisites: courses 401, 402, 403, 404, 405, 408. Preparation: successful completion of first year of DNP didactic coursework. DNP students gain knowledge, skills, and abilities necessary to develop evidence-based project proposal and plan, which addresses practice issue affecting chosen microsystem. Provides structured didactic content and application of student's DNP scholarly project. Letter grading.

**470B. DNP Scholarly Project Course II: Project Proposal. (8)** Lecture, two hours; clinical, six hours. Requisite: course 470A. DNP students develop full DNP scholarly project proposal that reflects synthesis of student's knowledge from prior coursework and work in area of interest or expertise under direction of faculty mentor. Provides structured didactic content and application of student's DNP scholarly project. Letter grading.

**470C. DNP Scholarly Project Course III: Project Implementation. (8)** Lecture, two hours; clinical, six hours. Requisite: course 470B. Continued development of knowledge, skills, and abilities to implement chosen DNP scholarly project proposal. Students assume role of leadership in interprofessional collaboration, consultation, and partnership. Students receive direction from faculty committee chair and peer feedback as they become engaged in microsystem where

they implement their DNP scholarly project. Provides structured didactic content and application of student's DNP scholarly project. Letter grading.

**470D. DNP Scholarly Project Course IV: Project Evaluation. (8)** Lecture, two hours; clinical, six hours. Requisite: course 470C. Students complete evidence-based DNP scholarly project. Students complete implementation phase, evaluate project, and write final DNP scholarly project manuscript. Students receive individual direction from faculty committee chair and peer feedback as final DNP scholarly project paper is written. Students are also mentored in making professional presentations and writing for publication. Letter grading.

**495. Nursing Education Practicum. (2)** Seminar, six hours. Supervised student teaching internship in preparation for academic roles. In-depth opportunity to gain skills in role of nurse educator within university setting, including application of instructional strategies and evaluation methods. S/U grading.

**495A. Teaching Assistant Training Seminar. (2)** Seminar, 90 minutes. Prepares students to serve as teaching assistants in School of Nursing. Students gain skills in role of nurse educator within university setting, including application of instructional strategies and evaluation methods that are consistent with expectations for student learning, creating inclusive teaching environment, and dealing with difficult situations. All new teaching assistants are required to take series of five Foundations of Teaching workshops by end of quarter in which this course is completed. S/U grading.

**496A-496B-496C. Education Practicum in Nursing Practice I, II, III. (1-1-1)** Activity, one hour; discussion, one hour. Corequisites for course 496A: courses 401, 402; course 496A is requisite to course 496B, which is requisite to course 496C. Focuses on development and implementation of patient education program. Prepares DNP students for teaching roles in variety of different health care settings. Emphasis on application of educational program structure, content, appropriate curriculum development, methods of teaching and evaluation that can be applied in variety of different settings in which DNP advanced practices nurses teach. In progress (courses 496A, 496B) and letter (496C) grading.

**596. Directed Individual Study or Research. (2 to 12)** Tutorial, to be arranged. Opportunity for individual graduate nursing students to pursue special studies or research interests. May be repeated for credit, but only 4 units may be applied toward graduate degree requirements. S/U grading.

**597. Individual Study for Comprehensive Examination. (2 to 4)** Tutorial, to be arranged. Opportunity for individual graduate nursing students to prepare for comprehensive examination. May be repeated once for credit, but only 4 units may be applied toward MSN degree requirements. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Individualized faculty supervision of PhD dissertation research by student's chair. May be repeated for credit, but only 8 units may be applied toward PhD degree requirements. S/U grading.

## OBSTETRICS AND GYNECOLOGY

*David Geffen School of Medicine*

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Los Angeles, CA 90095-1740

### Obstetrics and Gynecology

310-206-6575

**Deborah Krakow, MD, Chair**

**Sarah J. Kilpatrick, MD, PhD, Chair,**  
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*Chair, Olive View-UCLA*

**Beth Y. Karlan, MD, Vice Chair,**  
*Women's Health Research*

**Erica D. Oberman, MD, Vice Chair,**  
*Education*

**Jeaninne Rahimian, MD, Vice Chair,**  
*Clinical Affairs*

## Overview

The medical student program in the Department of Obstetrics and Gynecology is designed to provide students with firm background in the essentials of women's reproductive health. The educational objectives are set forth by the Association of Professors of Gynecology and Obstetrics (APGO). Through a combination of didactic instruction and supervised clinical experience, students acquire the relevant clinical skills of history taking and physical examination and learn reproductive physiology from infancy to the postmenopausal period; antepartum, intrapartum, and postpartum obstetric care; and recognition and management of various gynecologic disorders. Students work in ambulatory clinics and on inpatient services during a four-week core clerkship. Greater depth of experience is provided by elective clerkships during the fourth year that emphasize subspecialties such as maternal/fetal medicine, reproductive endocrinology and infertility, gynecologic oncology, and reproductive health.

For more details on the Department of **Obstetrics and Gynecology**, see the department website.

## Obstetrics and Gynecology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and en-

rolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Course

**199. Directed Research in Obstetrics and Gynecology. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## OPHTHALMOLOGY

*David Geffen School of Medicine*

2-142 Stein Eye Institute  
Box 957000

Los Angeles, CA 90095-7000

### Ophthalmology

310-825-5053

**Anne L. Coleman, MD, PhD, Chair**

**Anthony J. Aldave, MD, Vice Chair,**  
*Academics*

**Anthony C. Arnold, MD, Vice Chair,**  
*Education*

**Alfredo A. Sadun, MD, PhD, Vice Chair,**  
*Doheny Eye Centers-UCLA*

**Alapakkam P. (Sam) Sampath, PhD,**  
*Associate Director, Jules Stein Eye*  
*Institute*

## Overview

Ophthalmology is the medical science that encompasses knowledge concerning the eyes and the visual system. Derived from many basic and clinical fields, this knowledge must be synthesized by the physician and applied to the prevention, diagnosis, medical management, and surgical therapy of ocular disease.

In response to the steadily increasing incidence and growing importance of ocular disorders, the Department of Ophthalmology as well as the Stein Eye Institute and Doheny Eye Institute are closely coordinated to form a comprehensive center for research in the sciences related to vision, for the care of patients with disease of the eyes and related structures, and for education in the broad field of ophthalmology, all with community outreach.

The Department of Ophthalmology provides instruction and electives to medical students during the first, second, third, and fourth years at the Stein Eye Institute and the Doheny Eye Centers UCLA. Through lectures, demonstrations, discussions, and the opportunity to observe patients and review data on cases with a variety of ocular conditions, students gain knowledge and experience in ophthalmology.

For more details on the Department of **Ophthalmology** and courses offered, see the department website.

**Ophthalmology faculty** information is available from the department.

## Ophthalmology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Course

**199. Directed Research in Ophthalmology.** (2 to 8) Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## ORAL BIOLOGY

School of Dentistry

13-089 School of Dentistry  
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Los Angeles, CA 90095-1668

Oral Biology  
E-mail contact

Cun-Yu Wang, DDS, PhD, *Chair*  
Fariba S. Younai, DDS, *Vice Chair*

## Faculty Roster

### Professors

Shen Hu, PhD, MBA  
Anahid Jewett, MPH, PhD  
Mo K. Kang, DDS, MS, PhD (*Jack A. Weichman Professor of Endodontics*)  
Reuben H. Kim, DDS, PhD (*Naomi and Jim Ellison Endowed Professor*)  
Yong Kim, PhD, *in Residence*  
Renate Lux, PhD  
Diana V. Messadi, DDS, MMSc, DMSc  
Ichiro Nishimura, DDS, DMSc, DMD  
Igor Spigelman, PhD  
Sotirios Tetradis, DDS, PhD  
Cun-Yu Wang, DDS, PhD (*Dr. No-Hee Park Professor of Dentistry*)  
David T. Wong, DMD, DMSc

### Associate Professor

Alireza Moshaverinia, DDS, MS, PhD, FACP

### Assistant Professor

Jimmy K. Hu, PhD

### Adjunct Professor

Ki-Hyuk Shin, MS, PhD

### Adjunct Associate Professor

Fang Wei, PhD

### Professor of Clinical Dentistry

Fariba S. Younai, DDS

## Overview

Oral biology is the area of knowledge that deals with the development, structure, and function of the oral tissues and their interrelationships with other organ systems in normal and disease states. It is a multidisciplinary field that includes cell biology, bone biology, molecular biology, biochemistry, neuroscience, immunology, microbiology, and virology. The objective of the graduate program is to provide students with a sound foundation in these areas in order to pursue an academic or research career.

## Graduate Study

A combined DDS/Oral Biology MS or PhD, or advanced certificate training/Oral Biology MS or PhD, is also offered.

## Graduate Major

### Oral Biology MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Oral Biology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Graduate Courses

**201A. Advanced Oral Biology: Ontogenesis.** (3) Lecture, three hours. Evolutionary perspective of cellular development from simple molecules that were formed during first billion years of Earth to development of cells, tissues, and organs of invertebrates and vertebrates. Development of vertebrate feeding apparatus from comparative anatomical and physiological point of view, followed by embryogenesis of orofacial and dental structures of humans. S/U or letter grading.

**201C. Advanced Oral Biology: Pathobiology.** (3) Lecture, three hours. Molecular basis for pathogenic processes in tissues of oral cavity. Topics include microbially mediated demineralization of hard tissues, soft tissue infections, carcinogenesis, colonization of mucosal substrates by opportunists, etc. S/U or letter grading.

**202. Salivary Diagnostics: Salivaomics, Saliva-Exosomics, Saliva Liquid Biopsy.** (2) Lecture, one hour. Focus on basic, translational, and clinical advancements of saliva and its -omics constituents in oral and systemic health, precision, and personalized medicine. Topics covered by active investigators in field of

research. Lectures accompanied by two cutting-edge papers in field to prime student of exciting and emerging fields. Letter grading.

**203. Oral Embryology and Histology.** (4) Lecture, four hours. Lectures and laboratory instruction in development and histological structure of facial region and oral and peri-oral organs and tissues. Letter grading.

**M204. Mechanisms and Relief of Pain.** (2) (Same as Neuroscience M233.) Lecture, two hours. Advanced treatment of neuroanatomical, neurophysiological, and biochemical bases of pain perception. Topics include classical pain theories, pain receptors and pathways, endogenous mechanisms of pain modulation, and pharmacological basis for treatment of pain disorders. Letter grading.

**205A. Methodology in Research Design and Data Analysis.** (2) Lecture, two hours. Designed for graduate oral biology students. Integration of didactic lectures in descriptive and inferential statistics and in research design (emphasis on experimental design), presentations of statistical software, and open discussion of specific needs of oral biology students when they design their research. Letter grading.

**205B. Methodology in Evidence-Based Dentistry.** (2) Seminar, two hours. Designed for oral biology graduate students. Fundamentals of evidence-based research in dentistry and its implications for practice. Letter grading.

**205C. Advanced Seminar: Comparative Effectiveness and Evidence-Based Research.** (2) Seminar, one hour; discussion, one hour. Requisites: courses 205A, 205B (may be taken concurrently). Hands-on experience in process of systematic review, as shared mechanism in comparative effectiveness and evidence-based research. Specialized topics include level and quality of evidence assessments, acceptable sampling analysis, meta-analysis and meta-regression, and Bayesian-derived decision making following utility versus logic model. Students work on examples of their choice and interest in oral biology, medicine, and orthodontics. Letter grading.

**206. Current Topics in Oral Immunology.** (2) Lecture, two hours. Preparation: basic immunology. Discussion and analysis of current research dealing with immunological issues related to oral health, including HIV, opportunistic oral infections, periodontal pathology, oral immunopathology, caries immunology, endodontic immunology, etc. Letter grading.

**207. Development and Regeneration of Craniofacial Complex.** (2) Lecture, two hours. Focus on cell biology and molecular mechanisms that direct formation of different vertebrate head structures during embryonic development, as well as their abilities to regenerate in adults. Examination of genetic and signaling regulation of craniofacial patterning, morphogenesis, cell differentiation, evolution, and stem cell-based organ regeneration, through both didactic lectures and critical reading of primary research literature. Letter grading.

**208. Genomics and Proteomics in Oral Biology Research.** (2) Lecture, one hour; discussion, one hour. Introduction to fundamentals and technical aspects of genomics and proteomics and analysis of data derived therefrom. Discussion of implications and applications of genomics and proteomics in diagnostic protocols such as salivary diagnostics. Letter grading.

**209. Scientific Ethics.** (2) Seminar, two hours. Required course in scientific ethics for graduate students in Oral Biology MS and PhD programs and for NRSA trainees in School of Dentistry. Letter grading.

**211. Biology of Temporomandibular Joint.** (2) Lecture, two hours. Anatomy, histology, physiology, and biomechanics of temporomandibular joint (TMJ) and related musculature. Pain mechanisms, sensorimotor integration, and motor mechanisms in TMJ function, and current methods of TMJ imaging. S/U or letter grading.

**212. Proseminar: Oral Biology Research.** (2) Seminar, one hour; discussion, one hour. Introductory course for graduate MS students. Guest seminars on topics of research in oral biology (pain pathways, im-



munology, bone biology, microbiology, cancer, and salivary genomics), followed by discussions led by course chair. Letter grading.

**214. Current Research in Osteoimmunology. (2)** Seminar, one hour; discussion, one hour. Exploration of oral bone biology and immunology and how both systems talk to each other. Topics include immune modulation of bone metabolism, osteoblastic niche for hematopoietic progenitors, adult bone marrow stem cell changes, and osteoimmunology in at-risk populations. Letter grading.

**215A. Fundamentals of Immunology. (2)** Lecture, two hours. Basic cellular and molecular mechanisms involved in responses mediated by immune effectors, with emphasis on immunopathology involved in autoimmunity, cancer, and immunodeficiency syndromes. Letter grading.

**215B. Current Advanced Research Topics in Immunology. (2)** Seminar, one hour; discussion, one hour. Overview of rapidly changing discoveries in very important field of immunology. Directed and student-led discussions of current cutting-edge research developments in immunology. Letter grading.

**220. Integrative Biology and Biomaterials Science in Relation to Dentistry. (2)** Lecture, one hour; laboratory, 90 minutes. Introduction to integrative biology and biomaterials science by bringing together diversity of disciplines that complement one another to unravel complexity of biology in biomaterials in relation to dentistry. Integration of bioengineering, materials sciences, cell biology, and dentistry. Fundamentals of materials science in relation to dentistry, stem cell biology, and knowledge necessary to participate in dental and biomedical research, innovation, and product development. Letter grading.

**221. Advanced Dental Materials. (2)** Lecture, one hour; laboratory, 90 minutes. Preparation of individuals for academic and research careers in dental materials science or broader area of biomaterials relevant to clinical dental practice. Fundamentals of dental materials and knowledge necessary to participate in research and product development. Introduction to materials science, with focus on major classes of materials used in dentistry, including polymers, metals, and ceramics, and providing up-to-date information on dental materials currently used in clinical dentistry. Letter grading.

**226. Craniofacial Growth and Development. (2)** Lecture, two hours. Preparation: strong background in histology and embryology. Students acquire, from scientific literature discussed in lecture/seminar format, advanced knowledge of relevant aspects of human biology as they apply to classic and current concepts of principles governing growth and development of craniofacial region. Students required to present seminars on assigned topics that aid their understanding and analysis of course content that has application to their specific and professional fields. Letter grading.

**227. Dental Embryology and Histology. (2)** Lecture, two hours. Description and interpretation of important stages in development of orofacial apparatus and histological features of its component tissues. Critique of scientific literature relevant to course content and analysis of current state of knowledge about selected features of orofacial apparatus that are of significance to clinical dental specialists. S/U or letter grading.

**228. Dental Pharmacology and Therapeutics. (2)** Lecture, three hours. Survey of pharmacology, with particular emphasis on how drugs interact with dentistry. General principles of drug action and drug effects on autonomic and central nervous systems. S/U or letter grading.

**229A. Culture, Ethnicity, and Health: Implications for Oral Biology and Medicine. (2)** Seminar, one hour; discussion, one hour. Examination of sociocultural, biological, and linguistic anthropology to understand factors that influence health and well-being, experience and distribution of illness, prevention and treatment of sickness, healing processes, social relations of therapy management, and cultural importance and utilization of pluralistic medical systems. Theory, perspectives, and methods from clinical medicine, public health, epidemiology, demography, and social sciences. Letter grading.

**229B. Anthropological Perspectives on Global Health: Implications for Oral Biology and Medicine. (2)** Seminar, one hour; discussion, one hour. What factors determine health, illness, and disease in global context, including political ecology of infectious diseases, child health issues, women's health and reproductive health, global trade in legal and illegal drugs, demography and health transition, structural adjustment, problems associated with globalization of pharmaceutical industry; antibiotic resistance, and globalization and health equity. Letter grading.

**234. Seminar: Developmental Neuroendocrine Immunology. (2)** Seminar, two hours. Designed for graduate students. Psychological and physiological processes intertwine, and one important aspect of psychoneuroimmunological research is characterization of mechanisms that underlie these interactions. Examination of current literature on neuroimmune interaction from developmental perspective. S/U or letter grading.

**M256. Interdisciplinary Response to Infectious Disease Emergencies: Dentistry Perspective. (4)** (Same as Community Health Sciences M256, Medicine M256, and Nursing M298.) Lecture, three hours; discussion, one hour. Designed to instill in professional students ideas of common emergency health problems and coordinated response, with specific attention to bioterrorism. Examination of tools to help students prevent, detect, and intervene in infectious disease emergencies. Interdisciplinary sessions also attended by students in Schools of Medicine, Nursing, and Public Health during weeks two through five. Letter grading.

**260. Oral Biology Seminar. (1)** Seminar, one hour. Discussion of peer-reviewed literature readings in basic sciences related to oral biology. S/U grading.

**273. Research in Clinical Immunology and Lymphology. (2)** Lecture, one hour; discussion, one hour. Forum for discussion of cutting-edge topics in immunology and lymphology from clinical perspective. Emphasis on immune surveillance and lymphatic drainage of oral pathologies associated with AIDS and other diseases. Letter grading.

**275. Molecular and Cell Biology for Oral Biology Graduate Students. (3)** Lecture, two hours; literature review, one hour. Advanced course on prokaryotic and eukaryotic molecular and cell biology, with emphasis on applications in dental research. Letter grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations. (4 to 8)** Tutorial, to be arranged. S/U or letter grading.

**598. Thesis Research and Preparation. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (4 to 8)** Tutorial, to be arranged. S/U or letter grading.

provide students with experience in understanding the diagnosis and management of disorders of the musculoskeletal system. Through a combination of didactic instruction and supervised clinical experience, students acquire the clinical skills of history taking and physical examination of the musculoskeletal system. Diagnosis and orthopaedic management of bone and soft tissue trauma, skeletal development defects, tumor, spinal disorders, hand and foot disorders, and arthritis are primary objectives. Third-year students work in ambulatory clinics and on inpatient services during their core surgical clerkship. Fourth-year electives provide the opportunity for in-depth experience on rotations at the Reagan UCLA Medical Center and affiliated institutions and emphasize subspecialties such as joint replacement, sports medicine, orthopaedic oncology, metabolic bone disorders, hand and foot surgery, spinal surgery, and pediatric orthopaedics.

For more details on the Department of **Orthopaedic Surgery** and courses offered, contact the Education Office at 310-825-6557 or see the department website.

**Orthopaedic Surgery** faculty information is available from the department.

## Orthopaedic Surgery

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Course

**199. Directed Research in Orthopaedic Surgery. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

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## ORTHOPAEDIC SURGERY

*David Geffen School of Medicine*

76-143 Center for Health Sciences

Box 956902

Los Angeles, CA 90095-6902

**Orthopaedic Surgery**

310-825-6557

Nicholas M. Bernthal, MD, *Interim Chair*

Sharon L. Hame, MD, *Director, Medical Student Education*

## Overview

The medical student program in the Department of Orthopaedic Surgery is designed to

# PATHOLOGY AND LABORATORY MEDICINE

David Geffen School of Medicine

1P-171 Center for Health Sciences  
Box 951732  
Los Angeles, CA 90095-1732

Pathology and Laboratory Medicine  
310-825-8119

E-mail contact

Sarah M. Dry, MD, Chair

## Overview

Pathology is the branch of medicine concerned with the causes and development of disease.

Coursework is designed so that students gain an in-depth knowledge of cell and molecular biology, genetics, and disease mechanisms. Didactic instruction is complemented by participation in seminars and training in the design and execution of original laboratory research. As a result, graduates obtain the expertise to translate and answer questions defined in the clinical area to the laboratory bench and vice versa. For more information, see the [Pathology and Laboratory Medicine](#) website.

[Pathology and Laboratory Medicine](#) faculty information is available from the department.

## Pathology and Laboratory Medicine

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**110. Introduction to Cytogenetics. (4)** Lecture, one hour; discussion, two hours. Limited to upper-division biology students. Cytogenetics is branch of genetics concerned with study of structure and function of cells, especially chromosomes. Coverage of broad range of topics on both clinical aspects and research in cytogenetics. Studies provide important paradigms to understand structure of chromosomes, mechanisms of chromosome segregation, diseases, and problems created for numerical and structural abnormalities of human chromosomes as well as study of new techniques in molecular cytogenetics, including fluorescence in situ hybridization (FISH), comparative genomic hybridization (CGH), and array CGH to diagnose constitutional syndromes and cancer. Journal club sessions include discussion of two journal articles per meeting (one clinical and one basic/translational). Presentation of at least one journal article and leading of one group discussion required. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**199. Directed Research in Pathology. (2 to 4)** Tutorial, 10 hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**207. Gross and Developmental Anatomy for Graduate Students. (12)** Lecture/laboratory, three four-hour sessions (16-week semester). Gross anatomy, embryology, and radiological anatomy of human body as taught by lectures, demonstrations, and dissections. Trunk and extremities; head and neck. Letter grading.

**M215. Interdepartmental Course: Tropical Medicine. (2)** (Same as Medicine M215 and Pediatrics M215.) Lecture, two and one half hours. Preparation: basic courses in microbiology and parasitology of infectious diseases in School of Medicine or Public Health. Study of current knowledge about diseases prevalent in tropical areas of world. Major emphasis on infectious diseases, with coverage of problems in nutrition and exotic noninfectious diseases. Syllabus supplements topics covered in classroom. S/U grading.

**222. Hematopoiesis: Basic Biology and Clinical Implications. (4)** Lecture, three hours; discussion, one hour. Senior undergraduate students considered on case by case basis. In-depth study of concepts and paradigms in hematopoietic development. Mammalian hematopoiesis and normal development, with focus on molecular regulation of cellular development and equal emphasis on conceptual and experimental aspects of knowledge in field. Discussion of important pathological states within hematopoietic system, as well as established and novel avenues for therapy. Topics include hematopoietic stem cells and niche, transcriptional and epigenetic regulation of hematopoiesis, B- and T-lymphocyte development, myeloid, erythroid, and platelet development, immune responses, myeloid and lymphoid neoplasia, and bone marrow transplantation/gene therapy. S/U or letter grading.

**M229. Molecular Mechanisms of Host/Pathogen Interaction. (4)** (Same as Microbiology M229.) Lecture, two hours; discussion, two hours. Enforced requisites: Molecular Biology 254A through 254D. Molecular mechanisms of microbial interactions with eukaryotic host cells that result in disease or pathogen survival. Topics include pathogenesis of common viruses, bacteria, fungi, and parasites, basis of toxin-mediated cellular damage, and immune suppression of microbial tissue damage. Letter grading.

**M237. Cellular and Molecular Basis of Disease. (4)** (Same as Biological Chemistry M237.) Lecture, two hours; laboratory, two hours. Preparation: one course each in molecular biology, cell biology, and biological chemistry. Discussion of key issues in disease mechanisms, with emphasis on experiments leading to understanding of these mechanisms. Identification of important questions still remaining unanswered. Letter grading.

**238. Histology and Pathology for Graduate Students. (2)** Laboratory, two hours. Designed for UCLA ACCESS or Cellular and Molecular Pathology PhD students. Basic introductory knowledge of normal tissue, pathologic processes, and animal models as observed by light microscopy. Letter grading.

**240. Transplantation Immunology from Benchside to Bedside. (4)** Lecture, three hours; laboratory, one hour. Preparation: knowledge of basic immunology. Limited to graduate students. New developments in organ transplantation, updates on basic science of immune mechanisms, integration of basic science principles with clinical practice. Letter grading.

**M255. Mapping and Mining Human Genome. (3)** (Same as Human Genetics M255.) Lecture, three hours. Basic molecular genetic and cytogenetic techniques of gene mapping. Selected regions of human genomic map scrutinized in detail, particularly gene families and clusters of genes that have remained linked from mouse to human. Discussion of localizations of disease genes. S/U or letter grading.

**256. Seminar: Viral Oncology. (2)** Seminar, two hours. Advanced research seminar designed to consider current developments in field. Selection of current subjects and publications dealing with tumor viruses, oncogenesis, development, and cellular regulation. S/U or letter grading.

**M257. Introduction to Toxicology. (4)** (Same as Pharmacology M257.) Requisite: Pharmacology M241. Biochemical and systemic toxicology, basic mechanisms of toxicology, and interaction of toxic agents with specific organ systems.

**M258. Pathologic Changes in Toxicology. (4)** (Same as Pharmacology M258.) Designed to give students experience in learning normal histology of tissues which are major targets of toxin and the range of pathologic changes that occur in these tissues (liver, bladder, lung, kidney, nervous system, and vascular system).

**260. Immunopathology. (4)** Lecture, two hours; discussion, one hour; laboratory, one hour. Requisite: Microbiology 261. Advanced information for graduate and advanced undergraduate students regarding immune system anatomy, lymphocytic development, acute and chronic inflammation, hypersensitivity, and autoimmunity. Letter grading.

**262. Cytogenetics and Genomics. (3)** Lecture, three hours. Comprehensive guide so students gain sufficient knowledge in conventional and state-of-art cytogenetic and genomic principles and techniques and their utility in clinical and research applications. Focus on relationship between various chromosomal and genomic abnormalities in humans as identified by basic and advanced technologies such as fluorescence in situ hybridization (FISH), chromosomal microarray analysis (CMA), and next-generation sequencing (NGS). All aspects of molecular cytogenetics and cytogenomics through didactic teaching sessions, journal clubs, and interactive discussions. S/U or letter grading.

**270. Basic and Clinical Aspects of Developmental Hematology. (4)** Lecture, two hours. Graduate- and postgraduate-level course that covers broad range of topics in both basic and clinical aspects of developmental hematology. Pediatric hematologic disorders provide important paradigm to study other developmental systems. Subjects include hematopoiesis, basic stem cell biology, angiogenesis, alternative models to study developmental hematology (zebrafish and *Drosophila*), basic physiology of normal and abnormal red cells, platelets, and white cells, leukemogenesis and novel therapeutics to treat leukemia, basic and clinical stem cell transplantation, state-of-the-art methods in developmental hematology (genomics, proteomics, and gene therapy, design of clinical trials, and biomathematical modeling and statistics in developmental hematology. Letter grading.

**M272. Stem Cell Biology and Regenerative Medicine. (4)** (Same as Molecular, Cell, and Developmental Biology M272.) Lecture, two hours; discussion, two hours. Designed for graduate students. Presentation of current knowledge of embryonic and adult stem cells and factors that regulate their growth and development. Major emphasis on how advances in cell and

molecular biology and tissue engineering can be applied to use of stem cells in regenerative medicine. Bioethical and legal issues related to stem cell research. S/U or letter grading.

**280. Clinical Aspects and Molecular Biology of Bone Marrow Failure Syndromes.** (4) Lecture, two hours. Limited to graduate students. Coverage of broad range of topics on both clinical aspects and molecular pathogenesis of bone marrow failure syndromes. Studies provide important paradigms to understand fundamental mechanisms of human disease in addition to normal and abnormal blood cell development. Topics include basic biology and clinical features of aplastic anemia, myelodysplastic syndromes, Diamond Blackfan Anemia, Schwachman Diamond Syndrome, Fanconi Anemia, Dyskeratosis Congenita, Paroxysmal Nocturia Hemoglobinuria, flow cytometry, and research approaches to study bone marrow failure syndromes. Journal club sessions include discussion of two journal articles per meeting—one clinical and one basic/translational. Students present at least one journal article and lead group discussion. S/U or letter grading.

**294. Basic Concepts in Oncology.** (4) Lecture, three hours. Fundamental biological, genetic, and molecular process involved in genesis and growth of cancer cells and diagnosis, characterization, and treatment of cancer. Letter grading.

**296. Research Topics in Pathology.** (1 to 2) Research group meeting, one to two hours. Limited to departmental graduate students. Advanced study and analysis of current topics in pathology. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**298A-298D. Current Research in Disease Mechanisms.** (2 each) Lecture, 90 minutes. Preparation: one course each in molecular biology, cell biology, and biological chemistry. Designed for graduate experimental pathology students. Current research in disease mechanisms, with strong emphasis on experimental approach in pathology. Topics include genetic and metabolic disorders, thyroid disease, immunology, atherosclerosis, infectious diseases, and Alzheimer's disease. S/U or letter grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research.** (4 to 12) Tutorial, to be arranged. Individual research with members of the staff or of other departments, the latter for purpose of supplementing programs available in department. S/U grading.

**597. Preparation for Qualifying Examinations.** (2 to 8) Tutorial, to be arranged. Preparation: one year of pathology coursework. Individual study for qualifying examinations. S/U grading.

**599. Preparation of PhD Dissertation.** (2 to 12) Tutorial, to be arranged. Preparation: completion of qualifying examinations and majority of PhD research. Writing and completion of dissertation. S/U grading.

## PEDIATRICS

David Geffen School of Medicine

22-412A Marion Davies Children's Center  
Box 951752

Los Angeles, CA 90095-1752

### Pediatrics

310-825-5095

Sherin U. Devaskar, MD, *Executive Chair*

Peter G. Szilagyi, MD, MPH, *Executive Vice Chair and Vice Chair, Research*

## Overview

For first year medical students, exposure to pediatrics starts with the early authentic experiences and the activities of the pediatric interest group.

For second-year medical students, the required four-week clinical clerkship in pediatrics is offered at seven sites: Cedars-Sinai, Harbor-UCLA, Kaiser Permanente Los Angeles, Olive View-UCLA, UCLA, and UCLA Santa Monica medical centers; and Miller and UCLA Mattel children's hospitals.

In their third year, it is anticipated that many medical students participate in research projects in the department of pediatrics before starting their fourth year where they can further their pediatric knowledge and clinical experiences by choosing in-depth subspecialty electives and subinternships offered by department.

For more details on the Department of [Pediatrics](#) and courses offered, see the department website.

## Pediatrics

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**199. Directed Research in Pediatrics.** (2 to 8) Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Course

**M215. Interdepartmental Course: Tropical Medicine.** (2) (Same as Medicine M215 and Pathology M215.) Lecture, two and one half hours. Preparation: basic courses in microbiology and parasitology of infectious diseases in School of Medicine or Public Health. Study of current knowledge about diseases prevalent in tropical areas of world. Major emphasis on infectious diseases, with coverage of problems in nutrition and exotic noninfectious diseases. Syllabus supplements topics covered in classroom. S/U grading.

## PHILOSOPHY

College of Letters and Science

321 Dodd Hall

Box 951451

Los Angeles, CA 90095-1451

### Philosophy

310-825-4641

### Department e-mail

Sherrilyn Roush, PhD, *Chair*

## Faculty Roster

### Professors

David L. Blank, PhD

C. Tyler Burge, PhD (*Mr. and Mrs. C.N. Flint Professor of Philosophy*)

Samuel J. Cumming, PhD

Mark D. Greenberg, JD, DPhil (*Michael H. Schill Endowed Professor of Law*)

Barbara Herman, MA, PhD (*Gloria and Paul Griffin Professor of Philosophy*)

Pamela Hieronymi, PhD

David B. Kaplan, PhD (*Hans Reichenbach Professor of Scientific Philosophy*)

Kareem E. Khalifa, PhD

Gavin Lawrence, DPhil

Calvin G. Normore, PhD (*Brian P. Copenhaver Professor*)

Michael A. Rescorla, PhD

Sherrilyn Roush, PhD

Seana Shiffrin, JD, DPhil (*Pete Kameron Professor of Law and Social Justice*)

Sheldon R. Smith, PhD

### Professors Emeriti

Robert Merrihew Adams, PhD

Joseph Almog, DPhil

John P. Carriero, PhD

Brian P. Copenhaver, PhD (*Steven F. and*

*Christine L. Udvar-Hazy Professor Emeritus*)

Donald A. Martin, BS

### Associate Professors

Adam D. Crager, PhD



Katrina J. Elliott, PhD  
 Gabriel J. Greenberg, PhD  
 Alexander J. Julius, PhD  
 Sean Walsh, PhD  
 Vida Yao, PhD

### Assistant Professors

Joshua D. Armstrong, PhD  
 Daniela J. Dover, PhD

### Senior Lecturer

Andrew Hsu, PhD

### Lecturer

Steven R. Levy, PhD

### Adjunct Assistant Professor

Janelle DeWitt, PhD

## Overview

Philosophy reflects on big questions, such as how we should live our lives, and what is the nature of the world we live in. It overlaps with other fields—the arts, law, politics, and the sciences—and is especially concerned with their fundamental concepts, assumptions, foundations, and methodologies. Indeed the methodology of philosophy and its concerns are themselves subjects of philosophical inquiry.

## Undergraduate Major

### Philosophy BA

The benefits of an undergraduate education in philosophy are those Francis Bacon attributed to reading, conversation, and writing: reading gives us material for our own thought; conversation, facility at sharing and debating ideas; and writing, the ability to fix ideas with precision. A typical philosophy course involves reading: from the center and margins of the major world traditions, to modern thinkers framing today's urgent issues. It also involves conversation, as philosophers like to test ideas out in company and learn from those who see things differently to them. The final test of a philosophical theory or argument is to submit it to the rigor of writing. Philosophical writing, in the ideal, is clear, exact, and free of the rhetoric that may be able to temporarily sway an opponent in the heat of conversation.

Students intending to do graduate work in philosophy should consult with both the graduate and undergraduate advisers.

### Learning Outcomes

The Philosophy major has the following learning outcomes:

- Demonstrated solid foundation in logic, the history of philosophy (ancient, medieval, and modern), ethics and value theory, and metaphysics and epistemology
- Critical analysis and evaluation of arguments in historical texts and the contemporary philosophical literature
- Demonstrated ability to formulate and clearly present valid and sound arguments

- Development of oral and written skills that display skill at argument and the ability to engage honestly with difficult and controversial topics

## Entry to the Major

### Transfer Students

Transfer applicants to the Philosophy major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: one philosophy of mind or skepticism and rationality course, one ethical theory course, one symbolic logic course, and one additional philosophy course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Four lower-division courses, including Philosophy 7 or 21, 22, 31, and one other lower-division philosophy course.

### The Major

*Required:* Thirteen upper-division (100 series) or graduate (200 series) philosophy courses (52 units), including Philosophy 100A, 100B, 100C. Seven of the 13 courses must be distributed among the groups into which the undergraduate and graduate courses are divided—history of philosophy (numbered 101–119, 201–219); logic, semantics and philosophy of science (120–139, 220–239); ethics and value theory (150–169, 240–259); and metaphysics and epistemology (170–187, 270–289). Students must take two courses in each of three of the groups and one course in the remaining group.

### Honors Program

Students must satisfy the honors directed study requirement by taking Philosophy 198A and 198B in conjunction (usually, but not necessarily concurrently) with two different regular upper-division philosophy courses supervised by the instructors of those courses.

## Policies

### The Major

Contract courses (199) may be applied toward the major but not toward a group requirement. A maximum of 8 units of course 199 may be applied toward the major but not toward a group requirement. Courses 100A, 100B, 100C may not be applied toward any group requirement. No course used to satisfy the major or preparation requirements may be taken on a P/NP basis.

### Honors Program

#### Admission

To be admitted to the honors program, students must have taken at least three upper-division philosophy lecture or seminar courses at UCLA with an overall grade-point average of 3.7.

## Requirements

To be awarded honors in philosophy at graduation, Philosophy majors must (1) have a 3.7 grade-point average in UCLA philosophy courses and a 3.7 GPA in upper-division UCLA philosophy courses; (2) satisfy the honors directed study requirement; and (3) receive a grade of A– or better in each course applied toward satisfaction of the honors requirement.

Students may substitute Philosophy 191 for either course 198A or 198B or, alternatively, may complete up to two philosophy graduate seminars in lieu of courses 198A and/or 198B. For an undergraduate or graduate seminar to be applied toward the honors directed study requirement, the consent of both the seminar instructor and the faculty honors adviser is required in advance. Students may also substitute up to one 4-unit Philosophy 199 course in which they produce a substantial paper that represents an original piece of research or its equivalent.

Exceptional work done to satisfy the honors requirement may be submitted to the department chair for consideration for highest honors.

## Undergraduate Minor

### Philosophy Minor

The benefits of an undergraduate education in philosophy are those Francis Bacon attributed to reading, conversation, and writing: reading gives us material for our own thought; conversation, facility at sharing and debating ideas; and writing, the ability to fix ideas with precision. A typical philosophy course involves reading: from the center and margins of the major world traditions, to modern thinkers framing today's urgent issues. It also involves conversation, as philosophers like to test ideas out in company and learn from those who see things differently to them. The final test of a philosophical theory or argument is to submit it to the rigor of writing. Philosophical writing, in the ideal, is clear, exact, and free of the rhetoric that may be able to temporarily sway an opponent in the heat of conversation.

## Admission

To enter the Philosophy minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Lower-Division Courses (10 units):* Philosophy 7 or 21, and 22 or 31.

*Required Upper-Division Courses (24 units):* Five courses, including at least one from each of three of the four groups into which the undergraduate and graduate courses are divided—history of philosophy (numbered 101–119, 201–219); logic, semantics and philosophy of science (120–139, 220–239); ethics and value theory (150–169, 240–259); and metaphysics and epistemology (170–187, 270–289); one additional upper- or lower-division philosophy course.



## Policies

Philosophy 100A, 100B, and 100C apply toward Group I.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Philosophy MA, CPhil, PhD

The aim of the graduate program is to produce philosophers of high quality. A graduate degree in philosophy is the usual path to becoming a professional academic philosopher, but the skills attained in the study and practice of philosophy are highly transferable and sought after by enlightened employers across the globe. The focus of the department's graduate training is original philosophical research, and the PhD program culminates in the production of a long written document (the dissertation). Students in the graduate program also receive training and practice in teaching philosophy at various levels, and to audiences from diverse backgrounds.

## Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Philosophy PhD/Juris Doctor

## Philosophy

### Lower-Division Courses

**1. Beginnings of Western Philosophy. (5)** Lecture, three hours; discussion, one hour. Origins of Greek cosmology and philosophy, beginnings of systematic thought and scientific investigation concerning such questions as origin and nature of the material world, concept of laws of nature, possibility and extent of knowledge. Concentration on pre-Socratic philosophers, particularly Anaximander, Heraclitus, the Pythagoreans, Parmenides, Empedocles, and Greek atomists, during first two thirds of course and on Socrates and some earlier works of Plato in last few weeks. P/NP or letter grading.

**2. Introduction to Philosophy of Religion. (5)** Lecture, four hours; discussion, one hour. Introductory study of such topics as nature and grounds of religious belief, relation between religion and ethics, nature and existence of God, problem of evil, and what can be learned from religious experience. P/NP or letter grading.

**3. Historical Introduction to Philosophy. (5)** Lecture, three hours; discussion, two hours. Historical introduction to Western philosophy based on classical texts dealing with major problems, related thematically and studied in chronological order: properties of rational argument, existence of God, problem of knowledge, nature of causality, relation between mind and body, possibility of justice, and others. P/NP or letter grading.

**4. Philosophical Analysis of Contemporary Moral Issues. (5)** Lecture, three hours; discussion, one hour. Critical study of principles and arguments advanced in discussion of current moral issues. Possible topics include revolutionary violence, rules of warfare, sexual morality, right of privacy, punishment, nuclear warfare and deterrence, abortion and mercy killing, experimentation with human subjects, rights of women. P/NP or letter grading.

**5. Philosophy in Literature. (5)** Lecture, three hours; discussion, one hour. Philosophical inquiry into such themes as freedom, responsibility, guilt, love, self-knowledge and self-deception, death, and meaning of life through examination of great literary works in Western tradition. P/NP or letter grading.

**6. Introduction to Political Philosophy. (5)** Lecture, three hours; discussion, one hour. Study of some classical or contemporary works in political philosophy. Questions that may be discussed include What is justice? Why obey the law? Which form of government is best? How much personal freedom should be allowed in society? P/NP or letter grading.

**7. Introduction to Philosophy of Mind. (5)** Lecture, three hours; discussion, one hour. Introductory study of philosophical issues about nature of the mind and its relation to the body, including materialism, functionalism, behaviorism, determinism and free will, nature of psychological knowledge. P/NP or letter grading.

**8. Introduction to Philosophy of Science. (5)** Lecture, three hours; discussion, one hour. Study of selected problems concerning the character and reliability of scientific understanding, such as nature of scientific theory and explanation, reality of theoretical entities, inductive confirmation of hypotheses, and occurrence of scientific revolutions. Discussion at nontechnical level of episodes from history of science. P/NP or letter grading.

**9. Principles of Critical Reasoning. (5)** Lecture, four hours; discussion, one hour. Nature of arguments: how to analyze them and assess soundness of reasoning they represent. Common fallacies that often occur in arguments discussed in light of what counts as good deductive or inductive inference. Other topics include use of language in argumentation to arouse emotions as contrasted with conveying thoughts, logic of scientific experiments and hypothesis-testing in general, and some general ideas about probability and its application in making normative decisions (e.g., betting). P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**21. Skepticism and Rationality. (5)** Lecture, four hours; discussion, one hour. Can we know anything with certainty? How can we justify any of our beliefs? Introduction to study of these and related questions through works of some great philosophers of modern period, such as Descartes, Hume, Leibniz, or Berkeley. P/NP or letter grading.

**22. Introduction to Ethical Theory. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 22W. Recommended or required for many upper-division courses in Group III. Systematic introduction to ethical theory, including discussion of egoism, utilitarianism, justice, responsibility, meaning of ethical terms, relativism, etc. P/NP or letter grading.

**22W. Introduction to Ethical Theory. (5)** Lecture, three hours; discussion, one hour. Enforced prerequisite: English Composition 3 or 3H or English as a Second Language 36. Limited to freshmen/sophomores. Not open for credit to students with credit for course 22.

Introduction to major ethical theories in Western thought. Examination of works of Plato, Aristotle, Hume, Kant, and Mill. Topics include ideas of virtue, obligation, egoism, relativism, and foundations of morals. Four papers required. Satisfies Writing II requirement. Letter grading.

**23. Meaning and Communication. (5)** Lecture, three hours; discussion, one hour. Theory of meaning and its relationship to philosophy more generally; nature, origins, and acquisition of language. Additional topics may include nonlinguistic and nonhuman systems of communication; theories of interpretation in law, literature, and art; use of theoretical terms in science. P/NP or letter grading.

**M24. Language and Identity. (5)** (Same as Linguistics M7.) Lecture, four hours; discussion, one hour (when scheduled). How do we use language to project our own identity? How do we use it to perceive or shape identity of others? Introduction to speech act theory and various claims that speech act theory can account for systematic subordination of women; maligning of racial minorities; and, in some cases, incitement to violence through hate speech. Provides foundation for students of linguistic theory, philosophy, sociology, anthropology, and communication studies. P/NP or letter grading.

**31. Logic, First Course. (5)** Lecture, four hours; discussion, one hour. Recommended for students who plan to pursue more advanced studies in logic. Elements of symbolic logic, sentential and quantificational; forms of reasoning and structure of language. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Freshman Seminar. (4)** Variable topics; consult Schedule of Classes or "Department Announcements" for topics to be offered in a specific term. May be repeated for credit with consent of instructor.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100A. History of Greek Philosophy. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Survey of origins of Greek metaphysics from pre-Socratics through Plato and Aristotle. P/NP or letter grading.

**100B. Medieval and Early Modern Philosophy. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Strongly recommended prerequisite: course 100A. Survey of development and transformation of Greek metaphysics and epistemology within context of philosophical theology, and transition from medieval to early modern period. Special emphasis on Augustine, Anselm, Aquinas, and Descartes. P/NP or letter grading.

**100C. History of Modern Philosophy, 1650 to 1800. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Strongly recommended prerequisite: course 100B. Courses 100A, 100B, and 100C should be taken in immediately successive terms if possible. Survey of development of meta-

philosophy and theory of knowledge from 1650 to 1800, including Locke and/or Berkeley, Malebranche and/or Leibniz, and culminating in Hume and Kant. Topics may include views of these (and perhaps other) philosophers of the period on mind and body, causality, existence of God, skepticism, empiricism, limits of human knowledge, and philosophical foundations of modern science. P/NP or letter grading.

## Group I: History of Philosophy

**M101A. Plato—Earlier Dialogues. (4)** (Same as Classics M146A.) Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Study of selected topics in early and middle dialogues of Plato. P/NP or letter grading.

**M101B. Plato—Later Dialogues. (4)** (Same as Classics M146B.) Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Study of selected topics in middle and later dialogues of Plato. P/NP or letter grading.

**M102. Aristotle. (4)** (Same as Classics M147.) Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Study of selected works of Aristotle. P/NP or letter grading.

**M103A. Ancient Greek and Roman Philosophy. (4)** (Same as Classics M145A.) Lecture, three hours. Study of some major Greek and Roman philosophical texts, including those of pre-Socratics, Plato, Aristotle, and Hellenistic philosophers, with emphasis on historical and cultural setting of texts, their literary form, interrelations, and contribution to discussion of basic philosophical issues. P/NP or letter grading.

**M103B. Later Ancient Greek Philosophy. (4)** (Same as Classics M145B.) Lecture, three hours. Preparation: one course from 1, 100A, M101B, M102, or M103A. Study of some major texts in Greek philosophy of Hellenistic and Roman periods. Readings vary and include works by Stoics, skeptics, philosophers of science, Neoplatonists, etc. P/NP or letter grading.

**104. Topics in Islamic Philosophy. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Development of philosophy within orbit of Islam from beginning of interaction of Islam with ancient philosophy to period of hegemony of Ottoman Empire. Figures examined may vary but usually include many of al-Kindi, Ibn Sina (Avicenna), al-Ghazali, ben Maimon (Maimonides), Ibn Rushd (Averroes), and Suhrawardi. Topics include central issues in metaphysics and epistemology. May be repeated for credit with consent of instructor. P/NP or letter grading.

**106. Later Medieval Philosophy. (4)** Preparation: one philosophy course. Metaphysics, theory of knowledge, and theology of Aquinas, Duns Scotus, and Ockham, with less full discussion of other authors from the 13th through early 15th century. Selected texts read in English translation.

**107. Topics in Medieval Philosophy. (4)** Lecture, four hours; discussion, one hour. Preparation: one philosophy course. Recommended requisite: course 105 or 106. Study of philosophy and theology of one medieval philosopher such as Augustine, Anselm, Abelard, Aquinas, Scotus, or Ockham, or study of one single area such as logic or theory of knowledge in several medieval philosophers. Topic announced each term. May be repeated for credit with consent of instructor. P/NP or letter grading.

**C108. Hobbes. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Hobbes' political philosophy, especially *Leviathan*, with attention to its relevance to contemporary political philosophy. May be concurrently scheduled with course C208. P/NP or letter grading.

**C109. Descartes. (4)** Lecture, four hours; discussion, one hour. Requisites: course 21 or two philosophy courses. Study of works of Descartes, with discussion of issues such as problem of skepticism, foundations of knowledge, existence of God, relation between mind and body, and connection between science and metaphysics. May be concurrently scheduled with course C209. P/NP or letter grading.

**C110. Spinoza. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Selected topics in philosophy of Spinoza.

May be concurrently scheduled with course C210. Limited to 30 students when concurrently scheduled. P/NP or letter grading.

**C111. Leibniz. (4)** Lecture, three hours; discussion, one hour. Requisite: course 21. Study of philosophy of Leibniz. May be concurrently scheduled with course C211, in which case there is weekly discussion meeting, plus fewer readings and shorter papers for undergraduates. Limited to 30 students when concurrently scheduled. P/NP or letter grading.

**C112. Locke and Berkeley. (4)** Lecture, four hours. Preparation: one philosophy course. Study of philosophies of Locke and Berkeley, with emphasis in some cases on one or the other. Limited to 30 students when concurrently scheduled with course C212. P/NP or letter grading.

**C114. Hume. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Selected topics from metaphysical, epistemological, and ethical writings of Hume. Limited to 40 students when concurrently scheduled with course C214. P/NP or letter grading.

**C115. Kant. (4)** Lecture, three hours; discussion, one hour. Requisite: course 21 or 22. Study of Kant's views on related topics in theory of knowledge, ethics, and politics. May be repeated for credit with consent of instructor. Concurrently scheduled with course C215. P/NP or letter grading.

**116. 19th-Century Philosophy. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Selected topics in 19th-century thought.

**117. Late 19th- and Early 20th-Century Philosophy. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Selected topics in work of one or more of following philosophers: Bolzano, Frege, Husserl, Meinong, G. Moore, early Russell, and Wittgenstein. May be repeated for credit with consent of instructor.

**118. Kierkegaard. (4)** Preparation: one philosophy course. Philosophical study of some major works of Kierkegaard, with emphasis on interpretation of the texts.

**118B. Kierkegaard and Philosophy of Religion. (4)** (Same as Religion M118B.) Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Study of selected works of Kierkegaard on philosophy of religion, with emphasis on interpretation of texts. P/NP or letter grading.

**C119. Topics in History of Philosophy. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Study of selected philosophers or themes in history of philosophy from different periods (e.g. ancient and medieval, medieval and early modern). May be repeated for credit with consent of instructor. Concurrently scheduled with course C219. P/NP or letter grading.

## Group II: Logic, Semantics, and Philosophy of Science

**122. Topics in Philosophy of Science. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Philosophical investigation into one aspect of scientific practice (e.g., theorizing, experimentation, modeling, explanation, prediction). May be repeated for credit with consent of instructor. P/NP or letter grading.

**123. Science and Values. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Discussion of how moral, social, and political values inform scientific inquiry. May be repeated for credit with consent of instructor. P/NP or letter grading.

**124. Philosophy of Science: Historical. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Historical introduction to philosophy of science. Several general topics discussed in context of actual episodes in development of natural sciences. May be repeated for credit with consent of instructor.

**125. Philosophy of Science: Contemporary. (4)** Lecture, three hours; discussion, one hour. Requisite: course 31 or 124. Introduction to contemporary phi-

losophy of science, focusing on problems of central importance. May be repeated for credit with consent of instructor.

**126. Philosophy of Science: Social Sciences. (4)** Lecture, three hours; discussion, one hour. Preparation: two philosophy courses. Discussion of topics in philosophy of social sciences (e.g., methods of social sciences in relation to physical sciences, value-bias in social inquiry, concept formation, theory construction, explanation and prediction, nature of social laws).

**C127A. Philosophy of Language. (4)** Lecture, four hours; discussion, one hour. Enforced requisite: course 31. Syntax, semantics, pragmatics. Semantical concept of truth, sense and denotation, synonymy and analyticity, modalities and tenses, indirect discourse, indexical terms, semantical paradoxes. May be repeated for credit with consent of instructor. Concurrently scheduled with course C228A. P/NP or letter grading.

**C127B. Philosophy of Language. (4)** Lecture, four hours; discussion, one hour. Requisite: course 31. Course C127A is not requisite to C127B. Selected topics similar to those considered in course C127A, but at more advanced and technical level. May be repeated for credit with consent of instructor. Concurrently scheduled with course C228B. P/NP or letter grading.

**C127C. Philosophy of Language. (4)** Lecture, four hours; discussion, one hour. Requisite: course 31. Recommended: course C127A or C127B. Selected topics similar to those considered in course C127B, but with focus on contemporary figures. May be repeated for credit with consent of instructor. Concurrently scheduled with course C228C. P/NP or letter grading.

**C128. Topics in Philosophy of Mathematics. (4)** Lecture, four hours. Requisites: courses 31, 132, and preferably one additional logic course. Introduction to philosophy of mathematics. Survey of philosophy of mathematics from Kant to Hilbert. Study of content and development of three main schools of logicism, formalism, and intuitionism in their historical context. Study of original texts of philosophy such as Kant, Frege, and Russell, and how their philosophy interacted with contemporary developments in mathematics and logic. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C223. P/NP or letter grading.

**129. Philosophy of Psychology. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: one 4-unit psychology course, one philosophy course. Selected philosophical issues arising from psychological theories. Nature of perception and issues about perceptual psychology and development of important types of representation (e.g., of body, cause, agency) in early childhood. Relevance of computer simulation to accounts of thinking and meaning; relations between semantical theory and learning theory; psychological aspects of theory of syntax. May be repeated for credit with consent of instructor. P/NP or letter grading.

**130. Philosophy of Space and Time. (4)** Lecture, three hours; discussion, one hour. Preparation: two philosophy courses or one philosophy course and one physics course. Selected philosophical problems concerning nature of space and time. Philosophical implications of space-time theories, such as those of Newton and Einstein. Topics may include nature of geometry, conventionalism, absolutist versus relationist views of space and time, philosophical impact of relativity theory.

**131. Science and Metaphysics. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: two philosophy courses. Recommended: some background in basic calculus and physics. Intensive study of one or two metaphysical topics on which results of modern science have been thought to bear. Topics may include nature of causation, reality and direction of time, time-travel, backwards causation, realism, determinism, absolute view of space, etc. May be repeated for credit with consent of instructor. P/NP or letter grading.

**132. Logic, Second Course. (4)** Lecture, four hours; discussion, one hour. Enforced prerequisite: course 31 (preferably in preceding term). Symbolic logic: extension of systematic development of course 31. Quantifiers, identity, definite descriptions. P/NP or letter grading.

**133. Topics in Logic and Semantics. (4)** Lecture, four hours; discussion, one hour. Enforced prerequisite: course 31. Possible topics include formal theories, definitions, alternative theories of descriptions, many-valued logics, deviant logics. May be repeated for credit with consent of instructor. P/NP or letter grading.

**133B. Probability and Inductive Logic. (4)** Lecture, three hours; discussion, one hour (when scheduled). Prerequisite: course 31, or background in logic, computer science, statistics, or mathematics. Topics may include interpretations of probability, Bayesian and non-Bayesian confirmation theory, paradoxes of confirmation, coherence, and conditioning. May be concurrently scheduled with course C225. P/NP or letter grading.

**133C. Topics in Probability and Inductive Logic. (4)** Lecture, three hours; discussion, one hour (when scheduled). Prerequisite: course 31, or background in logic, computer science, statistics, or mathematics. Topics may include learning theory, statistical inference, causal inference, artificial intelligence, non-probabilistic approaches to inductive logic, or deeper study of topics from course C133B. May be repeated for credit with consent of instructor. P/NP or letter grading.

**M134. Introduction to Set Theory. (4)** (Same as Mathematics M114S.) Lecture, three hours; discussion, one hour. Prerequisite: course 135 or Mathematics 110A or 131A. Axiomatic set theory as framework for mathematical concepts; relations and functions, numbers, cardinality, axiom of choice, transfinite numbers. P/NP or letter grading.

**135. Introduction to Metalogic. (4)** Lecture, four hours; discussion, one hour. Enforced prerequisite: course 31. Strongly recommended prerequisite: course 132 (or Mathematics 33A or 33B). Metatheory sentential logic and first-order logic. Introduction to formal language, formal deductive systems, and models. Compactness and completeness theorems that concern complexity of notion of logical consequences. P/NP or letter grading.

**136. Modal Logic. (4)** Lecture, four hours. Prerequisites: courses 31 (enforced), 135. Introduction to model theory of modal logic (family of systems that includes logics of possibility and necessity, temporal logics, epistemic logics, and logics of actions/programs). Topics include invariance results, definability theory, completeness theory, game-theoretic methods, and relationship between modal logics and (classical) first- and second-order logic. P/NP or letter grading.

**137. Philosophy of Biology. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Intensive study of one or two current topics in philosophy of biology, which may include structure of evolutionary theory, fitness, taxonomy, reductionism, concept of biological species, and biological explanation. P/NP or letter grading.

**138. Philosophy of Visual Representation. (4)** Lecture, four hours. Preparation: one philosophy course (in philosophy of mind or language recommended). Investigation of philosophical questions relating to visual representation. Possible topics include visual perception, mental imagery, image versus language, semiotics, pictorial representation, comics and film, diagrams, and data visualization. P/NP or letter grading.

### Group III: Ethics and Value Theory

**150. Society and Morals. (4)** Lecture, three hours; discussion, one hour. Prerequisite: course 22. Critical study of principles and arguments advanced in discussion of current moral and social issues. Topics similar to those in course 4, but familiarity with some basic philosophical concepts and methods presupposed. May be repeated for credit with consent of instructor.

**151A-C151B-151C. History of Ethics. (4-4-4)** Lecture, three hours; discussion, one hour. Preparation: two philosophy courses. Each course may be taken independently for credit. P/NP or letter grading. **151A.** Selected Classics in Ancient Ethical Theories: Plato, Aristotle; **C151B.** Modern. Intensive study of Kant's ethical theory. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C245; **151C.** Selected Classics of Medieval Ethics.

**152A. Topics in Moral Philosophy. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Study of selected topics in moral philosophy. Possible topics may include role of emotions in moral agency, reactive attitudes and other responses to moral and immoral action, moral motivation, moral relationships, moral character and identity, and moral change and moral transformation. May be repeated for credit with consent of instructor. P/NP or letter grading.

**M152B. Topics in Moral Philosophy: Evil. (4)** (Same as Study of Religion M179.) Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Course 152A is not prerequisite to M152B. Exploration of philosophical issues raised by topic of evil actions and/or evil people. Issues may include nature of evil, problem of evil and theodicies, responsibility for evil and problem of free will, causes and motivations for evil action, and variant responses to evil such as forgiveness and punishment. P/NP or letter grading.

**153A. Topics in Ethical Theory: Normative Ethics. (4)** Lecture, three hours; discussion, one hour. Prerequisite: course 22. Study of selected topics in normative ethical theory. Topics may include human rights, virtues and vices, principles of culpability and praiseworthiness (criteria of right action). May be repeated for credit with consent of instructor. P/NP or letter grading.

**C153B. Topics in Ethical Theory: Metaethics. (4)** Lecture, three hours; discussion, one hour. Prerequisite: course 22. Study and analysis of basic concepts, selected problems, and contemporary issues in metaethics. Topics may include analysis of moral language, justification of moral beliefs, moral realism, skepticism, free will, moral motivation, etc. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C253B. P/NP or letter grading.

**154. Topics in Value Theory: Rationality and Action. (4)** Lecture, three hours; discussion, one hour. Prerequisite: course 6 or 7 or 22. Selected topics concerning normative issues in practical rationality or philosophy of action. Topics may include moral and practical dilemmas, nature of reasons for action, rationality of morality and prudence, weakness of will, freedom of will, and decision theory. May be repeated for credit with consent of instructor. P/NP or letter grading.

**C154B. Topics in Value Theory: Moral Responsibility and Free Will. (4)** (Formerly numbered 154B.) Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Examination of philosophical problems surrounding moral responsibility and free will, using contemporary or classical readings in attempt to better understand kind of freedom required for moral agents. May be repeated for credit. May be concurrently scheduled with course C244B. P/NP or letter grading.

**155A. Medical Ethics. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Course 155A is not prerequisite to 155B. Examination of philosophical issues raised by problems of medical ethics, such as abortion, euthanasia, and medical experimentation. May be repeated for credit with consent of instructor. P/NP or letter grading.

**155B. Topics in Medical Ethics. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Course 155A is not prerequisite to 155B. Intensive investigation of one or two topics or philosophical issues in medical ethics, such as paternalism, truth-telling, physician-patient relationship, distributional justice, autonomy and medical decision making, and research ethics. Topics announced each term. May be repeated for credit with consent of instructor. P/NP or letter grading.

**C156. Topics in Political Philosophy. (4)** Lecture, three hours; discussion, one hour. Analysis of some basic concepts in political theory. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C247. P/NP or letter grading.

**157A-157B. History of Political Philosophy. (4-4)** Lecture, three hours; discussion, one hour. Preparation: two philosophy courses. May be repeated with consent of instructor. **157A.** Reading and discussion of classic works in earlier political theory, especially those by Hobbes, Locke, Hume, and Rousseau. **157B.** Reading and discussion of classic works in later political theory, especially those by Kant, Hegel, and Marx.

**161. Topics in Aesthetic Theory. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Philosophical theories about nature and importance of art and art criticism, aesthetic experience, and aesthetic values. May be repeated for credit with consent of instructor.

**166. Philosophy of Law. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Examination, through study of recent philosophical writings, of such topics as nature of law, relationship of law and morals, legal reasoning, punishment, and obligation to obey law. May be repeated for credit. P/NP or letter grading.

**167. Feminist Issues in Value Theory. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Study of ethical dimensions of feminist theory. Issues discussed may include contested significance of gender; different models of gender identity and gender equality; gender discrimination, subordination, hierarchy, and resistance; gender equality in family and workplace; sexual harassment and violence; reproductive freedom; and just and unjust institutional arrangements as they affect gender. P/NP or letter grading.

**168. Philosophy of Race. (4)** Lecture, three hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Examination of theories of race and racism and intersection of race with other social structures. Topics may include metaphysics of race, social construction, racial identity, racial injustice, foundations of racial solidarity, and relationships between race and ethnicity, race and class, and race and gender. P/NP or letter grading.

### Group IV: Metaphysics and Epistemology

**170. Philosophy of Mind. (4)** Lecture, three hours; discussion, one hour. Preparation: two relevant philosophy courses. Analysis of various problems concerning nature of mind and mental phenomena, such as relation between mind and body, and our knowledge of other minds. May be repeated once for credit with consent of instructor.

**172. Philosophy of Language and Communication. (4)** Lecture, three hours; discussion, one hour. Theories of meaning and communication; how words refer to things; limits of meaningfulness; analysis of speech acts; relation of everyday language to scientific discoveries. P/NP or letter grading.

**173. Philosophy of Medicine. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Focus on questions like what is health, what is well-being, what is mental disorder, and what is disability. Consideration of naturalistic, normative, and social constructivist types of answers, and error theories. Consideration of roles that fact, value, statistical norms, normal variation, normal function, and harm might have in these concepts. Study of consequences of different accounts of these concepts for people with minority bodies, minds, and sexualities, and for decisions about cure, enhancement, and reproduction. P/NP or letter grading.

**174. Topics in Theory of Knowledge. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Prerequisite: course 21. Intensive investigation of one or two selected topics or works in theory of knowledge, such as a priori knowledge, problem of induction, memory, knowledge as justified true belief. Topics announced each term. May be repeated for credit with consent of instructor. P/NP or letter grading.

**M175. Topics in Philosophy of Religion. (4)** (Same as Religion M175.) Lecture, three hours; discussion, one hour. Requisite: course 21 or 22. Intensive investigation of one or two topics or works in philosophy of religion, such as attributes of God, arguments for or against existence of God, or relation between religion and ethics. Topics announced each term. May be repeated for credit with consent of instructor.

**176. Metaphysics of Modality. (4)** Lecture, four hours. Requisites: courses 31, 132. Highly recommended: course 136. Second course in two-term sequence (also see course 136). Metaphysical foundations of modal logic and philosophical basis of modal theory of modal logic. What are possible worlds? What is accessibility relation? Is modal logic one logic or one theory? Is its focus logical or metaphysical necessity? Are both notions really distinct? How metaphysically involved is (quantified) modal logic? What is its connection to doctrines of (1) Haecceitism and (2) Aristotelian Essentialism? P/NP or letter grading.

**177A. Existentialism. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Analysis of methods, problems, and views of some of the following: Kierkegaard, Nietzsche, Heidegger, Jaspers, Sartre, Marcel, and Camus. Possible topics include metaphysical foundations, nature of mind, freedom, problem of self, other people, ethics, existential psychoanalysis. May be repeated for credit with consent of instructor. P/NP or letter grading.

**177B. Historical Studies in Existentialism. (4)** Preparation: one philosophy course. Study of central philosophical texts of one of the following: Nietzsche, Heidegger, Jaspers, Buber, Sartre, or Camus. Emphasis on explication and interpretation of the texts. May be repeated for credit with consent of instructor.

**178. Phenomenology. (4)** Lecture, three hours; discussion, one hour. Preparation: two philosophy courses. Introduction to phenomenological method of approaching philosophical problems via works of some of the following: Brentano, Husserl, Heidegger, Scheler, Sartre, Merleau-Ponty, Ricoeur. Topics include ontology, epistemology, and particularly philosophy of mind.

**179. Asian Philosophy. (4)** Lecture, three hours; discussion, one hour. Examination of central concepts and arguments in Buddhist or Chinese philosophy. Appropriate parallels to social concepts in Western tradition. May be repeated for credit with consent of department. P/NP or letter grading.

**180. Philosophy of Action. (4)** Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: two philosophy courses. Study of various concepts employed in understanding human action. Topics may include rational choice, desire, intention, weakness of will, and self-deception. May be repeated for credit with consent of instructor. P/NP or letter grading.

**181. Philosophy of Perception. (4)** Lecture, four hours. Preparation: two philosophy courses. Critical study of main philosophical theories of perception and arguments used to establish them. P/NP or letter grading.

**182. Elements of Metaphysics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 21. Study of basic metaphysical questions; nature of physical world, of minds, and of universals; and answers provided by alternative systems (e.g., phenomenalism, materialism, dualism). P/NP or letter grading.

**183. Theory of Knowledge. (4)** Lecture, three hours; discussion, one hour. Requisite: course 21. Problem-oriented study of contemporary classics of epistemology on topics such as skepticism, justification, foundationalism, epistemic intuitions, tracking, closure, reliabilism, internalism, and externalism, among others. May be repeated for credit with consent of instructor. P/NP or letter grading.

**184. Topics in Metaphysics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 21. Intensive investigation of one or two topics or works in metaphysics, such as personal identity, nature of dispositions, possibility and necessity, universals and particulars, causality. Topics announced each term. May be repeated for credit with consent of instructor. P/NP or letter grading.

**185. Major Philosophers of 20th Century. (4)** Lecture, three hours; discussion, one hour. Preparation: two philosophy courses. Study of writings of one or more major modern philosophers (e.g., Russell, Moore, Wittgenstein, Carnap, Quine). May be repeated for credit with consent of instructor. P/NP or letter grading.

**M187. Topics in Feminist Philosophy: Metaphysics and Epistemology. (4)** (Same as Gender Studies M110C.) Lecture, three hours; discussion, one hour (when scheduled). Requisite for Gender Studies majors: Gender Studies 10; for other students: one philosophy course. Examination in depth of different theoretical positions on gender and women as they have been applied to study of philosophy. Emphasis on theoretical contributions made by new scholarship on women in philosophy. Critical study of concepts and principles that arise in discussion of women's rights and liberation. Philosophical approach to feminist theories. May be repeated for credit with consent of instructor. P/NP or letter grading.

## Special Studies

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, one hour. Limited to 20 students. Designed as adjunct to upper-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward College Honors for eligible students. May not be applied toward departmental honors. May be repeated for credit. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, one hour. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May not be applied toward departmental honors. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Philosophy. (4)** Seminar, one hour; discussion, three hours. Variable topics; consult Schedule of Classes or "Department Announcements" for topic to be offered in specific term. Reading, discussion, and development of culminating project. May be repeated for credit with consent of instructor. P/NP or letter grading.

**198A-198B. Honors Research in Philosophy. (2-2)** Tutorial, two hours. Limited to junior/senior philosophy honors program students. Each course to be taken in conjunction with one upper-division philosophy lecture course, either concurrently or in subsequent term, under direct supervision of lecture course instructor. Advanced work related to lecture course, further reading, and preparation of 12- to 15-page paper representing original research. Courses 198A and 198B must be taken in conjunction with two different lecture courses, and both must be taken to satisfy departmental honors requirement. May be repeated for credit. Individual contract required. Letter grading.

**198C. Honors Research in Philosophy. (4)** Tutorial, four hours. Limited to junior/senior philosophy honors program students. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research in Philosophy. (2 to 4)** Tutorial, three hours. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper or research project required. Up to 8 units may be applied toward degree requirements, but no 199 course may be substituted for course in one of four groups on basis of similarity of subject matter. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A-200B-200C. Seminar for First-Year Graduate Students. (4-4-4)** Seminar, three hours. Limited to and required of all first-year graduate philosophy students. Selected topics in metaphysics and epistemology, history of philosophy, and ethics. Letter (200A, 200B) and S/U or letter (200C) grading.

### Group I: History of Philosophy

**201. Plato. (4)** Seminar, four hours. Study of later dialogues. S/U or letter grading.

**202. Aristotle. (4)** Lecture, four hours. Analysis of major problems in Aristotle's philosophy based on reading, exposition, and critical discussion of relevant texts in English translation. S/U or letter grading.

**203. Seminar: History of Ancient Philosophy. (4)** Seminar, four hours. Selected problems and philosophers. May be repeated for credit with consent of instructor. S/U or letter grading.

**206. Topics in Medieval Philosophy. (4)** Lecture, four hours. Study of philosophy and theology of one or several medieval philosophers such as Augustine, Anselm, Abelard, Aquinas, Scotus, or Ockham or study of single area such as logic or theory of knowledge in several medieval philosophers. Topics announced each term. May be repeated for credit with consent of instructor. S/U or letter grading.

**207. Seminar: History of Medieval and Renaissance Philosophy. (4)** Seminar, four hours. Selected problems and philosophers. May be repeated for credit with consent of instructor. S/U or letter grading.

**C208. Hobbes. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Hobbes' political philosophy, especially *Leviathan*, with attention to its relevance to contemporary political philosophy. May be concurrently scheduled with course C108. S/U or letter grading.

**C209. Descartes. (4)** Lecture, four hours; discussion, one hour. Study of works of Descartes, with discussion of issues such as problem of skepticism, foundations of knowledge, existence of God, relation between mind and body, and connection between science and metaphysics. May be concurrently scheduled with course C109. S/U or letter grading.

**C210. Spinoza. (4)** Lecture, three hours; discussion, one hour (when scheduled). Selected topics in philosophy of Spinoza. May be concurrently scheduled with course C110. S/U or letter grading.

**C211. Leibniz. (4)** Lecture, three hours. Selected topics in philosophy of Leibniz. May be concurrently scheduled with course C111, in which case there is two-hour biweekly discussion meeting, plus additional readings and longer term paper for graduate students. S/U or letter grading.

**C212. Locke and Berkeley. (4)** Lecture, four hours. Preparation: one philosophy course. Study of philosophies of Locke and Berkeley, with emphasis in some cases on one or the other. Limited to 30 students when concurrently scheduled with course C112. S/U or letter grading.

**C214. Hume. (4)** Lecture, three hours; discussion, one hour. Selected topics in philosophy of Hume. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C114. S/U or letter grading.



**C215. Kant. (4)** Lecture, three hours; discussion, one hour. Requisite: course 21 or 22. Study of Kant's views on related topics in theory of knowledge, ethics, and politics. May be repeated for credit with consent of instructor. Concurrently scheduled with course C115. S/U or letter grading.

**216. 19th-Century Philosophy. (4)** Seminar, four hours. Topics in 19th-century philosophy. May be repeated for credit with consent of instructor. S/U or letter grading.

**C219. Topics in History of Philosophy. (4)** Lecture, three hours; discussion, one hour. Study of selected philosophers or themes in history of philosophy from different periods (e.g. ancient and medieval, medieval and early modern). May be repeated for credit with consent of instructor. Concurrently scheduled with course C119. S/U or letter grading.

**220. Seminar: Topics in History of Philosophy. (4)** Seminar, three hours. Selected problems and philosophers which may be from different periods. May be repeated for credit with consent of instructor. S/U or letter grading.

## Group II: Logic, Semantics, and Philosophy of Science

**221A. Topics in Set Theory. (4)** Lecture, three hours. Requisite: Mathematics M114S. Sets, relations, functions, partial and total orderings; well-orderings. Ordinal and cardinal arithmetic, finiteness and infinity, continuum hypothesis, inaccessible numbers. Formalization of set theory: Zermelo/Fraenkel; von Neumann/Gödel theory. May be repeated for credit with consent of instructor. S/U or letter grading.

**221B. History of Set Theory. (4)** Lecture, four hours. Development of concept of set and axiomatic set theory by examining selected writings of Frege, Cantor, Russell, Zermelo, Gödel, and several others. Origins and significance of certain key ideas, such as set theory as logic, axiomatic set theory as reaction to paradoxes, formal first-order axiomatic set theory as opposed to informal axiomatics, type theory and rank hierarchy, ramification and predicativity, proper classes and sets as small classes, and particular Zermelo/Fraenkel axiomatic theory. Emphasis on actual expressed ideas and views of various influential authors. S/U or letter grading.

**222A-222B-222C. Gödel Theory. (4-4-4)** Lecture, four hours. S/U or letter grading. **222A.** Preparation: several courses in logic. First in series of three courses leading to Gödel incompleteness theorem and Tarski definition of truth. **222B.** Requisite: course 222A. Second-order arithmetic. Second in series of three courses leading to Gödel incompleteness theorem and Tarski definition of truth. **222C.** Requisite: course 222B. Gödel numbering and Gödel theory. Final course in Gödel theory series.

**C223. Topics in Philosophy of Mathematics. (4)** Lecture, four hours. Introduction to philosophy of mathematics. Survey of philosophy of mathematics from Kant to Hilbert. Study of content and development of three main schools of logicism, formalism, and intuitionism in their historical context. Study of original texts of philosophy such as Kant, Frege, and Russell, and how their philosophy interacted with contemporary developments in mathematics and logic. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C128. S/U or letter grading.

**224. Philosophy of Physics. (4)** Seminar, three hours. Selected philosophical topics related to physical theory, depending on interests and background of participants, including space and time; observation in quantum mechanics; foundations of statistical mechanics. May be repeated for credit with consent of instructor. S/U or letter grading.

**C225. Probability and Inductive Logic. (4)** (Formerly numbered 225.) Lecture, three hours; discussion, one hour (when scheduled). Requisite: course 31, or background in logic, computer science, statistics, or mathematics. Topics may include interpretations of probability, Bayesian and non-Bayesian confirmation theory, paradoxes of confirmation, coherence, and conditioning. May be concurrently scheduled with course C133B. S/U or letter grading.

**226. Topics in Mathematical Logic. (4)** Lecture, four hours. Content varies from term to term. May be repeated for credit with consent of instructor. S/U or letter grading.

**227. Philosophy of Social Science. (4)** Lecture, four hours. Examination of philosophical problems concerning concepts and methods used in social sciences. Topics may include relation between social processes and individual psychology, logic of explanation in social sciences, determinism and spontaneity in history, interpretation of cultures radically different from one's own. Students with primary interest and advanced preparation in social sciences encouraged to enroll. May be repeated for credit with consent of instructor. S/U or letter grading.

**C228A. Philosophy of Language. (4)** Lecture, four hours; discussion, one hour. Enforced requisite: course 31. Syntax, semantics, pragmatics. Semantical concept of truth, sense and denotation, synonymy and analyticity, modalities and tenses, indirect discourse, indexical terms, semantical paradoxes. May be repeated for credit with consent of instructor. Concurrently scheduled with course C127A. S/U or letter grading.

**C228B. Philosophy of Language. (4)** Lecture, four hours; discussion, one hour. Requisite: course 31. Course C228A is not requisite to C228B. Selected topics similar to those considered in course C228A, but at more advanced and technical level. May be repeated for credit with consent of instructor. Concurrently scheduled with course C127B. S/U or letter grading.

**C228C. Philosophy of Language. (4)** Lecture, four hours; discussion, one hour. Requisite: course 31. Recommended: course C228A or C228B. Selected topics similar to those considered in course C228B, but with focus on contemporary figures. May be repeated for credit with consent of instructor. Concurrently scheduled with course C127C. S/U or letter grading.

**229. Seminar: Critical Thinking. (4)** Seminar, three hours. Selected topics in history, theory, and pedagogy of critical thinking. May be repeated for credit with consent of instructor. S/U or letter grading.

**230. Seminar: Logic. (4)** Seminar, four hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**231. Seminar: Intensional Logic. (4)** Seminar, four hours. Topics may include logic of sense and denotation, modal logic, logic of demonstratives, epistemic logic, intensional logic of *Principia Mathematica*, possible worlds semantics. May be repeated for credit with consent of instructor. S/U or letter grading.

**232. Philosophy of Science. (4)** Seminar, three hours. Selected topics in philosophy of science. May be repeated for credit with consent of instructor. S/U or letter grading.

**233. Seminar: Philosophy of Physics. (4)** Seminar, four hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**234. Topics in Philosophy of Science. (4)** Seminar, three hours. One or more selected topics in philosophy of science. May be repeated for credit with consent of instructor. May not be used to satisfy special area requirement. S/U or letter grading.

**235. Philosophy of Mathematics. (4)** Seminar, three hours. Selected topics in philosophy of mathematics. May be repeated for credit with consent of instructor. S/U or letter grading.

## Group III: Ethics and Value Theory

**241. Topics in Political Philosophy. (4)** Seminar, four hours. Requisites: course 150 or C156 or 157A or 157B or any two philosophy courses. Examination of one or more topics in political philosophy (e.g., justice, democracy, human rights, political obligation, alienation). May be repeated for credit with consent of instructor. S/U or letter grading.

**244. Topics in Value Theory: Rationality and Action. (4)** Seminar, three hours. Selected topics on normative issues in practical rationality or philosophy of action. Topics may include moral and practical dilemmas, nature of reasons for action, rationality of morality and

prudence, weakness of will, freedom of will, and decision theory. May be repeated for credit with consent of instructor. S/U or letter grading.

**C244B. Topics in Value Theory: Moral Responsibility and Free Will. (4)** Lecture, three hours; discussion, one hour. Preparation: one philosophy course. Examination of philosophical problems surrounding moral responsibility and free will, using contemporary or classical readings in attempt to better understand kind of freedom required for moral agents. May be repeated for credit. May be concurrently scheduled with course C154B. S/U or letter grading.

**C245. History of Ethics: Modern. (4)** Lecture, three hours; discussion, one hour. Intensive study of Kant's ethical theory. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C151B. S/U or letter grading.

**246. Seminar: Ethical Theory. (4)** Seminar, four hours. Selected topics. Content varies from term to term. May be repeated for credit with consent of instructor. S/U or letter grading.

**C247. Topics in Political Philosophy. (4)** Lecture, three hours; discussion, one hour. Analysis of some basic concepts in political theory. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C156. S/U or letter grading.

**248. Problems in Moral Philosophy. (4)** Seminar, four hours. Intensive study of some leading current problems in moral philosophy. May be repeated for credit with consent of instructor. S/U or letter grading.

**C253B. Topics in Ethical Theory: Metaethics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 22. Study and analysis of basic concepts, selected problems, and contemporary issues in metaethics. Topics may include analysis of moral language, justification of moral beliefs, moral realism, skepticism, free will, moral motivation, etc. May be repeated for credit with consent of instructor. May be concurrently scheduled with course C153B. S/U or letter grading.

**254. Legal Theory Workshop. (1 to 8)** Seminar, three hours. Students engage with work in progress on philosophical issues in law of leading scholars from around country. Presentation of works in progress by visiting scholars every two weeks. Study by students of papers to be presented to gain background in relevant topics and to be prepared for speakers' presentations. Presentation of student papers to class for discussion. Substantial analytical paper required. S/U or letter grading.

**254A-254B. Legal Theory Workshop. (3-1)** Seminar, three hours. Course 254A is requisite to 254B. Students engage with work in progress on philosophical issues in law of leading scholars from around country. Presentation of works in progress by visiting scholars every two weeks. Study by students of papers to be presented to gain background in relevant topics and to be prepared for speakers' presentations. Presentation of student papers to class for discussion. Substantial analytical paper required. Concurrently scheduled with Law 555. In Progress (254A) and S/U or letter (254B) grading.

**255. Seminar: Aesthetic Theory. (4)** Seminar, four hours. Selected topics. May be repeated for credit with consent of instructor. S/U or letter grading.

**M256. Topics in Legal Philosophy. (4)** (Same as Law M217.) Lecture, three hours. Examination of topics such as concept of law, nature of justice, problems of punishments, legal reasoning, and obligation to obey the law. May be repeated for credit with consent of instructor.

**M257. Philosophy Legal Theory. (1 to 8)** (Same as Law M524.) Seminar, three hours. Selected topics in philosophy of law. May be repeated for credit with consent of instructor. S/U or letter grading.

**M257A-257B. Philosophy Legal Theory. (1 to 8 each)** (Same as Law M524.) Seminar, two hours. Course M257A is enforced requisite to 257B. Selected topics in philosophy of law. May be repeated for credit with consent of instructor. In Progress (M257A) and S/U or letter (257B) grading.

**258. Contemporary Philosophy of Law. (4)** Seminar, three hours. Limited to graduate students. Recent contributions to theoretical literature on contract law.

Possible topics include purpose or function of contract law, relationship of contracts to promises, whether fault should play larger (or smaller) role in contract law, remedial approaches to breach including larger role for unjust enrichment, and contract law's treatment of fraud and deception. Readings from legal and philosophical literature. S/U or letter grading.

**259. Philosophical Research in Ethics and Value Theory. (2 to 4)** Seminar, two hours. Preparation: completion of proposition requirement. Presentation of ongoing research by graduate students. Participants make presentations, analyze and discuss presentations of others, and read and discuss philosophical texts related to presentations. Must be taken for 4 units in quarters in which students present their own research. May be repeated for credit with consent of instructor. S/U grading.

## Group IV: Metaphysics and Epistemology

**270. Epistemology of Science. (4)** Seminar, three hours. Selected philosophical topics at intersection of epistemology and philosophy of science including scientific knowledge, inference to best explanation, understanding, cognitive attitudes in science, probabilistic reasoning, and social epistemology of science. May be repeated for credit with consent of instructor. S/U or letter grading.

**271. Seminar: Topics in Metaphysics and Epistemology. (4)** Seminar, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**272. Topics in Philosophy of Mind and Language. (4)** Seminar, three hours. One or more selected topics in philosophy of mind and/or language. May be repeated for credit with consent of instructor. May not be used to satisfy special area requirement. S/U or letter grading.

**275. Human Action. (4)** Preparation: two upper-division philosophy courses. Examination of theories, concepts, and problems concerning human actions. Topics may include analysis of intentional actions; determinism and freedom; nature of explanations of intentional actions. May be repeated for credit with consent of instructor.

**280. 20th-Century Continental Philosophy. (4)** Seminar, three hours. Selected topics in 20th-century continental European philosophy. May be repeated for credit with consent of instructor. S/U or letter grading.

**281. Seminar: Philosophy of Mind. (4)** Seminar, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**282. Seminar: Metaphysics. (4)** Seminar, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**283. Seminar: Theory of Knowledge. (4)** Seminar, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**284. Seminar: Philosophy of Perception. (4)** Seminar, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**285. Philosophy of Psychoanalysis. (4)** Seminar, three hours. Examination of topics such as nature and validity of psychoanalytic explanations and interpretations, psychoanalysis and language, metapsychological concepts such as the unconscious, ego, id, superego, defense mechanisms, and psychoanalytic conception of human nature. S/U or letter grading.

**286. Philosophy of Psychology. (4)** Seminar, four hours. Relevance of computer simulation to accounts of thinking and meaning; relations between semantical theory and learning theory; psychological aspects of theory of syntax; behaviorism, functionalism, and alternatives; physiology and psychology. S/U or letter grading.

**287. Seminar: Philosophy of Language. (4)** Seminar, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**288. Seminar: Wittgenstein. (4)** Seminar, three hours. May be repeated for credit with consent of instructor. S/U or letter grading.

**289. Seminar: Philosophy of Religion. (4)** Seminar, four hours. May be repeated for credit with consent of instructor. S/U or letter grading.

## Special Studies

**290. Workshop: Philosophy of Language. (2 or 4)** Seminar, two hours. Ongoing discussion of current issues in philosophy of language based on contemporary texts and current research. Presentations of ideas by attending faculty and graduate students with open discussion. May be repeated for credit with consent of instructor. S/U grading.

**291. Workshop: Philosophy of Mathematics. (4)** Seminar, three hours. Ongoing discussion of current issues in philosophy of mathematics based on contemporary texts and current research. Presentations of ideas by attending faculty and graduate students with open discussion. May be repeated for credit with consent of instructor. S/U or letter grading.

**292. Philosophical Research in History of Philosophy. (2 to 4)** Seminar, two hours. Prerequisite: graduate standing or consent of instructor. Ongoing discussion of current issues in history of philosophy based on contemporary texts and current research. Presentations of ideas by attending faculty and graduate students with open discussion. May be repeated for credit with consent of instructor. S/U grading.

**299. Seminar: Philosophical Research. (4)** Seminar, three hours. Preparation: advancement to candidacy. Presentation of ongoing research by graduate students or faculty members. Participants make presentations, analyze and discuss presentations of others, and read and discuss philosophical texts related to presentations. May be repeated for credit with consent of instructor. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching College Philosophy. (2 to 4)** Seminar, to be arranged. Seminars, workshops, and apprentice teaching. Selected topics, including evaluation scales, various teaching strategies and their effects, and other topics in college teaching. May be repeated for credit. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Studies. (2 to 12)** Tutorial, to be arranged. Properly qualified graduate students who wish to pursue one problem through reading or advanced study may do so if their proposed project is acceptable to one staff member. May be repeated for credit. S/U or letter grading.

**597. Directed Studies for Graduate Examinations. (2 to 8)** Tutorial, to be arranged. Preparation for MA comprehensive examination or PhD oral qualifying examinations. S/U grading.

**599. Research for PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. May be repeated for credit. S/U grading.

# PHYSICS AND ASTRONOMY

College of Letters and Science

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Physics and Astronomy

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Stuart E. Brown, PhD, *Chair*

Per J. Kraus, PhD, *Vice Chair, Academic Affairs*

Pietro Musumeci, PhD, *Vice Chair, Resources*

Tommaso L. Treu, PhD, *Vice Chair, Astronomy*

## Faculty Roster

### Professors

Katsushi Arisaka, PhD

Zvi Bern, PhD

Dolores Bozovic, PhD

Stuart E. Brown, PhD

Wesley C. Campbell, PhD

Troy A. Carter, PhD

Sudip Chakravarty, PhD

Eric D'Hoker, PhD

Michael P. Fitzgerald, PhD

Steven R. Furlanetto, PhD

Graciela B. Gelmini, PhD

Andrea M. Ghez, PhD (*Nobel laureate; Lauren B. Leichtman and Arthur E. Levine Endowed Professor of Astrophysics*)

Michael Gutperle, PhD

Bradley M. Hansen, PhD

Jay Hauser, PhD

Károly Holczer, PhD

Huan Z. Huang, PhD

Eric R. Hudson, PhD (*David S. Saxon Presidential Professor of Physics*)

Hong-Wen Jiang, PhD

Per J. Kraus, PhD

Alexander Kusenko, PhD

James E. Larkin, PhD

David R. Leibbrandt, PhD

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Jean-Luc Margot, PhD

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David Saltzberg, PhD

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Jean L. Turner, PhD  
 Vladimir V. Vassiliev, PhD  
 Kang L. Wang, PhD (*Raytheon Company  
 Professor of Electrical Engineering*)  
 Giovanni Zocchi, PhD

### Professors Emeriti

Ernest S. Abers, PhD  
 Eric E. Becklin, PhD  
 Robijn F. Bruinsma, PhD  
 Charles D. Buchanan, PhD  
 W. Gilbert Clark, PhD  
 John M. Cornwall, PhD  
 Ferdinand V. Coroniti, PhD  
 Robert D. Cousins, PhD  
 Sergio Ferrara, PhD  
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 Reiner L. Stenzel, PhD  
 E.T. Tomboulis, PhD  
 Roger K. Ulrich, PhD  
 Gary A. Williams, PhD  
 Alfred Y. Wong, PhD  
 Chun Wa Wong, PhD  
 Edward L. Wright, PhD (*David S. Saxon  
 Presidential Professor Emeritus of Physics*)  
 Benjamin M. Zuckerman, PhD

### Associate Professors

Michail Bachtis, PhD  
 Paul Hamilton, PhD  
 Zhongbo Kang, PhD  
 Smadar Naoz, PhD  
 Rahul Roy, PhD

### Assistant Professors

E. Paulo Alves, PhD  
 Sergio Carbajo, PhD  
 Tuan H. Do, PhD (*Andrea M. Ghez Centennial  
 Term Professor of Astronomy and  
 Astrophysics*)  
 Thomas T. Dumitrescu, PhD  
 Christopher Gutiérrez, PhD  
 Alvine C. Kamaha, PhD (*Keith and Cecilia  
 Terasaki Endowed Professor of Physical  
 Sciences*)  
 Anshul Kogar, PhD  
 Erik A. Petigura, PhD  
 Derek B. Schaeffer, PhD  
 Qianhui Shi, PhD  
 Mikhail P. Solon, PhD (*David Saxon  
 Presidential Term Professor of Physics*)  
 Shenshen Wang, PhD

### Adjunct Professor

Slava G. Turyshev, PhD

### Adjunct Assistant Professors

Nicholas D. Rombes, PhD  
 Nathan C. Tung, PhD

## Overview

Since the time of the ancient Greeks, a natural affinity has existed between astronomy and

physics, and the intellectual development of the two disciplines has often proceeded synergistically. Newton's discovery of the laws of mechanics and universal gravitation not only explained motion on Earth, but brought the heavens and Earth into a single quantitative framework in which both are governed by the same laws. The revolutionary discoveries of twentieth-century physics—quantum mechanics and nuclear physics—were rapidly adopted by astronomers to interpret the spectroscopic observations of the stars and to construct accurate models of stellar structure. Einstein's general theory of relativity predicted the expansion of the universe and that most awesome compaction of matter—the black hole.

Today astronomers study the accretion of matter onto supermassive black holes in quasars and search the most distant regions of the universe to learn about the exotic physical conditions that existed when the universe's expansion was only fractions of a second old. By measuring the gravitational interactions on distance scales from galaxies to the vast superclusters of galaxies, astronomers have concluded that most of the universe's matter is dark or nonluminous; physicists have speculated that this dark matter may consist of yet-undiscovered exotic particles that are predicted by the most advanced theories of elementary particle physics.

Department of Physics and Astronomy faculty members and students are able to study the universe in the holistic manner that is demanded by the breadth of these two disciplines.

## Undergraduate Study

### Astronomy Courses

The department offers general courses to all UCLA students, including those who are not science oriented.

Astronomy 3 is the fundamental one-term course for students who do not major in physical sciences and should be taken in the first or second year.

Astronomy 4, 5, and 6 develop the topics covered in course 3 to somewhat greater depths but are still aimed at nonscience majors. Course 4 discusses stellar and supermassive black holes; course 5 concentrates on the problem of life in the universe; course 6 discusses the structure and evolution of the universe.

Astronomy 81, 115, and 117 are general survey courses recommended for science majors in their second year. They systematically introduce astrophysics and require a good background in physics and mathematics (at least two terms of the Physics 1 series and two terms of the Mathematics 31 and 32 series).

Students of junior and senior standing in Physics or related sciences are invited to select any of these courses: Astronomy 127, 140, 141, 142, 143, 144, 145, 146, 180.

### Physics Courses

Students who wish to use physics to satisfy part of the general education requirements in the physical sciences and who have no mathe-

matics background beyond the high school mathematics required for admission to UCLA may take Physics 10.

Physics 1A, 1B, and 1C, or 1AH, 1BH, and 1CH form sequences of courses in general physics for majors in Physics.

The department takes into account prior preparation in physics. If students feel their background would permit acceleration, they may be exempted from one course in the 1A, 1B, 1C sequence by taking the final examination with a class at the end of any term. This serves as a placement examination. A satisfactory score on the College Board Advanced Placement Physics C Mechanics Test may also serve as a placement examination, but placement is not automatic. Students should discuss such possibilities with their departmental adviser.

Physics 5A, 5B, 5C form a one-year sequence of courses in basic physics for students in the biological and health sciences.

Any two or more courses from Physics 1A, 1AH, and 5A, are limited to a total of 6 units of credit.

## Undergraduate Majors

### Astrophysics BS

#### Learning Outcomes

The Astrophysics major has the following learning outcomes:

- Ability to apply knowledge of classical mechanics, electromagnetism, quantum mechanics, and thermal physics to understand and analyze a broad variety of physical phenomena
- Application and improvement of proficiency in mathematics skills in calculus, differential equations, and linear algebra
- Understanding and analysis of phenomena in astronomy and astrophysics including planets, stars, galaxies, and cosmology
- Ability to make accurate and precise physical measurements using modern laboratory instruments and computerized data acquisition
- Ability to critically analyze and interpret data in order to draw valid scientific conclusions
- Ability to present clear written and oral accounts of scientific results
- Scientific, mathematical, computing, and laboratory skills that enable pursuit of career objectives in graduate or professional schools, in a teaching career, or in a scientific career in government or industry

### Entry to the Major

#### Transfer Students

Transfer applicants to the Astrophysics major with 90 or more units must complete as many of the following introductory courses as possible prior to admission to UCLA: two astrophysics courses, two years of calculus, one and one half years of calculus-based physics with laboratory for majors, and one programming course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.



## Requirements

### Preparation for the Major

*Required:* Astronomy 81; Physics 1A or 1AH, 1B or 1BH, 1C or 1CH, 4AL, 4BL, 17, 32; Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B; and one course from Computer Science 30, 31, or Program in Computing 10A, or demonstrated ability to program.

*Recommended:* Chemistry and Biochemistry 20A.

### The Major

*Required:* Astronomy 115, 117, 127, 180; Physics 105A, 105B, 110A, 110B, 115A, 115B, 115C; three additional upper-division courses, with at least two courses in astronomy, selected from Astronomy 140, 141, 142, 143, 144, 145, 146, Earth, Planetary, and Space Sciences 155, C179, Physics 108, M122, 124, 126, 127, 128, 132, C170M.

### Honors Program

In addition to completing all courses required for the major, students must complete two terms of Astronomy 199.

## Policies

### The Major

Each course taken to fulfill any of the requirements for the major must be taken for a letter grade.

### Honors Program

Senior majors in Astrophysics with a 3.5 grade-point average in all astronomy, mathematics, and physics courses are eligible for the honors program in astrophysics. To receive honors and highest honors at graduation, the grade-point average must remain at 3.5 and 3.75 or better, respectively, and work in course 199 must reflect original research and be accepted by the departmental honors committee.

## Biophysics BS

The goal of the Biophysics major is to provide students with an undergraduate background that will enable them to enter competitive graduate programs in biophysics, molecular biology, and biological physics. It also aims at providing students with a solid, quantitative background for careers in the medical field of the future as well as in molecular biology, neuroscience, and biological physics which are all emerging as important and rapidly developing areas of physics. The major is designed to provide students with a flexible scientific/technical training that allows them to explore these different career paths and tailor their class work to their scientific interests. The program aims at providing an opportunity to the students to become scientific leaders, bringing the analytic and experimental techniques of different fields to bear on the fascinating world of the physics of living systems.

### Learning Outcomes

The Biophysics major has the following learning outcomes:

- Ability to apply knowledge of classical mechanics, electromagnetism, quantum mechanics, and thermal physics to understand and analyze a broad variety of physical phenomena
- Application and improvement of proficiency in mathematics skills in calculus, differential equations, and linear algebra
- Ability to understand and analyze basic phenomena in biological science
- Ability to make accurate and precise physical measurements using modern laboratory instruments and computerized data acquisition
- Ability to critically analyze and interpret data in order to draw valid scientific conclusions
- Ability to present clear written and oral accounts of scientific results
- Scientific, mathematical, computing, and laboratory skills that enable pursuit of career objectives in graduate or professional schools, in a teaching career, or in a scientific career in government or industry

## Entry to the Major

### Transfer Students

Transfer applicants to the Biophysics major with 90 or more units must have completed the following introductory courses prior to admission to UCLA: two years of calculus, one and one half years of calculus-based physics with laboratory for majors, one year of general biology with laboratory for majors, and one year of general chemistry with laboratory for majors.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Physics 1A or 1AH, 1B or 1BH, 1C or 1CH, 4AL, 4BL, 17, 32; Chemistry and Biochemistry 20A, 20B; Life Sciences 7A; Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B. *Recommended:* Physics 18L.

### The Major

*Required:* Physics 105A, 110A, 110B, 112, 115A, 115B, M180G, C187A, C187B; three additional upper-division elective courses selected from one group or among the three groups.

*Group A (Physics of Neuroscience):* Neuroscience M101A, Physics 170A, C186.

*Group B (Biological Physics):* Physics 144, 170A, Mechanical and Aerospace Engineering C286.

*Group C (Molecular and Cellular Biophysics):* Chemistry 153A, 153L, Molecular, Cell, and Developmental Biology 100 or 165A.

### Honors Program

In addition to completing all courses required for the major, students must complete two 4-unit terms of Physics 199.

## Policies

### The Major

Students will be advised when a course has additional lower-division requirements.

Each course taken to fulfill any of the requirements for the major must be taken for a letter grade.

An overall 2.0 grade-point average in all upper-division courses is required.

### Honors Program

Senior majors in Biophysics with a 3.5 grade-point average in upper-division major courses are eligible for the honors program in biophysics. To receive honors and highest honors at graduation, the grade-point average must remain at 3.5 and 3.75 or better, respectively.

## Physics BS

The Physics BS major should be pursued if students intend to continue toward the PhD in Physics.

A detailed brochure on the major is available from the Undergraduate Office, 1-707A Physics and Astronomy Building.

## Learning Outcomes

The Physics major has the following learning outcomes:

- Ability to apply knowledge of classical mechanics, electromagnetism, quantum mechanics, and thermal physics to understand and analyze a broad variety of physical phenomena
- Application and improvement of proficiency in mathematics skills in calculus, differential equations, and linear algebra
- Ability to understand and analyze physical phenomena in one or more specialized areas of physics of choice, which facilitates subsequent research
- Ability to make accurate and precise physical measurements using modern laboratory instruments and computerized data acquisition
- Ability to critically analyze and interpret data in order to draw valid scientific conclusions
- Ability to present clear written and oral accounts of scientific results
- Scientific, mathematics, computing, and laboratory skills that enable pursuit of career objectives in graduate or professional schools, in a teaching career, or in a scientific career in government or industry

## Entry to the Major

### Transfer Students

Transfer applicants to the Physics BS major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of calculus, one and one half years of calculus-based physics with laboratory for majors, and one general chemistry course for majors.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Physics 1A or 1AH, 1B or 1BH, 1C or 1CH, 4AL, 4BL, 17, 32; Chemistry and Bio-



chemistry 20A; Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B; Program in Computing 10A or Computer Science 30 or 31.

### The Major

*Required:* Physics 105A, 105B, 110A, 110B, 112, 115A, 115B, 115C. The remainder of the course of study consists of a plan, to be worked out by students in consultation with their designated departmental adviser, that details which courses they take to complete the degree. There are four overall requirements: (1) the plan must be worked out five terms before students expect to graduate; (2) there must be one course in the Physics 170 series and one course in the Physics 180 series, or two courses in the Physics 180 series; (3) there must be three additional upper-division courses in the plan, preferably selected from Physics 108, 114, 117, M122, 123, 124, 126, 127, 128, 132, 140A, 140B, 144, 150, C186, C187A; (4) there must be written rationale for the plan. Except for the Physics 180 laboratories, the courses need not be in the Physics and Astronomy Department. However, it is expected that the courses fit into a coherent structure. It is important that the structure and rationale are thought out carefully, as the plan must be endorsed by the designated adviser and be approved by the departmental academic affairs committee. Pre-approved plans of study are available from the undergraduate advisers.

Students preparing for graduate school should take additional courses in physics and mathematics. Physics 108, 114, M122, 123, 124, 126, 132, 140A, and 140B are recommended.

### Honors Programs

In addition to completing all courses required for the major, students must complete one of the two honors program options.

*Research-based:* students must complete two 4-unit terms of Physics 199.

*Course-based:* students must take 4 units of Physics 197—an in-depth individual study of a physics topic of interest to the student under the guidance of a faculty member and resulting in a written report—and are also required to take Mathematics 115A and two courses selected from Mathematics 120A, 120B, Physics 221A, or 221B.

### Policies

#### The Major

Each course taken to fulfill any of the requirements for the major must be taken for a letter grade.

A C average is required in all courses taken to satisfy the major requirements.

#### Honors Programs

Senior majors in Physics with a 3.5 grade-point average in upper-division mathematics and physics courses are eligible for the honors program in physics.

## Physics BA

The Physics BA major is intended to provide students with a strong background in physics, yet allow students flexibility to study other fields as well. It should be of particular interest to students who want to double major or who want to teach science. Students who intend to continue work toward the PhD in Physics are advised to pursue the [Physics BS](#).

A detailed brochure on the major is available from the Undergraduate Office, 1-707A Physics and Astronomy Building.

### Learning Outcomes

The Physics major has the following learning outcomes:

- Ability to apply knowledge of classical mechanics, electromagnetism, quantum mechanics, and thermal physics to understand and analyze a broad variety of physical phenomena
- Application and improvement of proficiency in mathematics skills in calculus, differential equations, and linear algebra
- Ability to critically analyze and interpret data in order to draw valid scientific conclusions
- Ability to present clear written and oral accounts of scientific results
- Scientific, mathematical, computing, and laboratory skills that enable pursuit of career objectives in graduate or professional schools, in a teaching career, or in a scientific career in government or industry

### Entry to the Major

#### Transfer Students

Transfer applicants to the Physics BA major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of calculus, one and one half years of calculus-based physics with laboratory for majors, and one general chemistry course for majors.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Physics 1A or 1AH, 1B or 1BH, 1C or 1CH, 4AL, 4BL, 17, 32; Chemistry and Biochemistry 20A; Mathematics 31A or 31AL, 31B, 32A, 32B, 33A, 33B; Program in Computing 10A or Computer Science 30 or 31.

#### The Major

*Required:* Physics 105A, 105B, 110A, 110B, 112, 115A, 115B, 115C, one course from the 170 series or the 180 series.

### Policies

Each course taken to fulfill any of the requirements for the major must be taken for a letter grade.

A C average in the upper-division physics courses is required.

## Graduate Majors

### Astronomy and Astrophysics MAT

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Astronomy and Astrophysics MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Master of Quantum Science and Technology

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Physics MAT

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Physics MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

# Astronomy

## Lower-Division Courses

**3. Nature of the Universe. (5)** Lecture, three hours; laboratory, two hours. Not open to students with credit for or currently enrolled in course 81 or 82. No special mathematical preparation required beyond that necessary for admission to UCLA in freshman standing. Course for general UCLA students, normally not intending to major in physical sciences. Introduction to vast range of cosmic phenomena including planets in our solar system and beyond, stars, supernova explosions, black holes, galaxies, and universe as whole. P/NP or letter grading.

**4. Black Holes and Cosmic Catastrophes. (4)** Lecture, three hours; discussion, one hour. No mathematical preparation beyond that necessary for admission to UCLA in freshman standing. Course for general UCLA students, normally not intending to major in physical sciences. Introduction to exotic cosmic phenomena known as black holes, and their bizarre effects on fabric of space and time. Some black holes form in violent events that terminate lives of stars, while formation of much more massive black holes at centers of galaxies is still mysterious. Covers cosmic catastrophes including stellar explosions and mergers, supernovae, gamma-ray bursts, and gravitational waves. Discussion of depiction of black holes in popular culture. P/NP or letter grading.

**5. Life in Universe. (4)** Lecture, three hours; discussion, one hour. No special preparation required. Topics include formation and evolution of Earth and Sun, life on Earth, origin and evolution of life, solar system, habitability, extra-solar planets, search for intelligent life in universe, and interstellar travel. Draws primarily from astronomy and biology but includes some chemistry, geology, and physics. P/NP or letter grading.

**6. Cosmology: Origin, History, and Fate of Universe. (4)** Lecture, three hours; discussion, one hour. No special mathematical preparation required beyond that necessary for admission to UCLA in freshman standing. Course for general UCLA students, normally not intended to majors in physical sciences. Cosmology is study of large-scale properties of universe. Consideration of origin, fate, composition, and shape of universe, and origin and evolution of structure seen in universe today. Addresses these questions through study of Big Bang, dark matter, dark energy, expansion of universe, and other cosmic phenomena. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP or letter grading.

**81. Fundamentals of Astrophysics. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 31A, 31B, and Physics 1A or 1AH. Open to qualified sophomore and upper-division students. Students develop understanding of fundamental physical concepts such as gravity and radiation, and how these concepts connect to stars and planets. Overview of stars and stellar evolution, and tools and methods important to astrophysics such as telescopes and spectroscopy. P/NP or letter grading.

**82. Astrophysics II: Stellar Evolution, Galaxies, and Cosmology. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 31A, 31B, and Physics 1A or 1AH. Recommended: course 81, Physics 1B and 1C (or 1BH and 1CH). Open to qualified sophomore and upper-division students. Basic principles of stellar structure and evolution. Red giants, white dwarfs, novae, supernovae, neutron stars, and black holes. Pulsars and galactic X-ray sources. Milky Way galaxy and interstellar medium. Extragalactic astronomy, galaxy clustering, active galactic nuclei, and quasars. Introduction to cosmology: Hubble law, thermal history of Big Bang, and earliest moments of universe. P/NP or letter grading.

**88A. Lower-Division Seminar: Cosmic Evolution. (2)** Seminar, two hours. Limited to freshmen. Varied astronomical and physical processes of evolution; discussion of how, over billions of years, basic mechanisms of cosmic evolution have transformed universe from fiery origin at Big Bang into abode for intelligent life. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**115. Introduction to Galactic Astronomy. (4)** Lecture, three hours; discussion, one hour. Requisites: course 81, Mathematics 31A, 31B, and Physics 1A or 1AH. Open to qualified sophomore and upper-division students. Introduction of principles important for understanding components and evolution of Milky Way galaxy. Topics include interstellar medium, star and planet formation, and exoplanets. Examination of basic physical processes governing compact stellar remnants such as white dwarfs, neutron stars, and black holes. Overview of structure and properties of Milky Way galaxy. P/NP or letter grading.

**117. Introduction to Extragalactic Astrophysics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 81, 115, Mathematics 31A, 31B, and Physics 1A or 1AH. Open to qualified sophomore and upper-division students. Introduction to formation and evolution of universe from Big Bang to structure formation and galaxy evolution. Development of physics behind our modern understanding of universe on large scales. Including role of dark matter and dark energy. Introduction of energetic phenomena such as active galactic nuclei and quasars. P/NP or letter grading.

**127. Stars from Birth to Death. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 81, 115, 117. In-depth exploration into lives and deaths of stars. Covers production of energy and physics of stellar interiors and atmospheres. Topics include star formation, variability and evolution. Includes significant exploration of nuclear physics and advanced stages of fusion. Covers properties and formation of stellar remnants from white dwarfs to black holes. P/NP or letter grading.

**140. Galaxies. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 115, 117. Designed for upper-division Astrophysics and Physics majors. Focus on basic unit of structure in universe: galaxies. Consideration of physics governing their structure and evolution, and how galaxy population has evolved over history of universe. Other topics include Milky Way, stellar dynamics, active galactic nuclei, and galaxy clusters. P/NP or letter grading.

**141. Cosmology. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 115, 117. Designed for upper-division Astrophysics and Physics majors. In-depth exploration of Big Bang model for universe. Examination of what expanding universe is, how cosmologists measure its properties, and how universe has changed since Big Bang. Topics include cosmic

expansion, dark matter, inflation, cosmic microwave background, Big Bang nucleosynthesis, and structure formation. P/NP or letter grading.

**142. Data and Computation in Astrophysics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 81, 115, 117, and Computer Science 30 or 31 or Program in Computing 10A. Designed for upper-division Astrophysics and Physics majors. Project-based introduction to data and computation in astrophysics context. Students develop core computational toolkit for data retrieval, processing, analysis, visualization, and interpretation. Topics include analysis of large, heterogeneous datasets; high-performance computation; numerical simulations; and scientific numerical methods. P/NP or letter grading.

**143. Planets and Exoplanets. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 81, 115, 117, 127. Designed for upper-division Astrophysics and Physics majors. Focus on detection and characterization of planets orbiting other stars, and on physical processes that determine their formation, structure, and evolution. Topics of discussion include broader astrophysical context of planet formation and how observations of solar system properties can be incorporated into emerging understanding of extra-solar planetary systems. P/NP or letter grading.

**144. Star Formation and Interstellar Medium. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 81, 115, 117. Designed for upper-division Astrophysics and Physics majors. Focus on key components of interstellar medium (ISM) in galaxies, including dust, and neutral, ionized, and molecular gas. Consideration of dynamical processes, such as shocks and expanding supernova remnants. Covers process of star formation. Key ISM observational techniques are presented. P/NP or letter grading.

**145. High-Energy Astrophysics. (4)** Lecture, three hours; discussion, one hour. Requisites: Physics 17, 110A, 115A. Corequisites: Physics 110B, 115B. Designed for upper-division Astrophysics and Physics majors. Introduction to high-energy universe, with overview of sources of high energy (X-ray and gamma-ray) emission. Covers importance of energetic particles in galaxy and connection of high-energy astronomy to cosmology and particle physics. P/NP or letter grading.

**146. Astronomical Instrumentation. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 81, 115, 117. Designed for upper-division Astrophysics and Physics majors. Focus on modern observational techniques for astronomy. Topics include optical and infrared techniques including telescope design, charge-coupled devices, and infrared detectors. These also include adaptive optics systems and high contrast detection methods. Covers all other electromagnetic windows from radio waves to gamma rays. Other topics include neutrino, dark matter, and gravitational wave detection. P/NP or letter grading.

**180. Astrophysics Laboratory. (4)** Lecture, two hours; laboratory, four hours. Designed for juniors/seniors in astrophysics, physics, or related field. Topics include statistical methods in astrophysics, instrumentation, data reduction, and optics. Laboratory experiments include observations of sun, stars, and other astronomical objects. Emphasis on use of computers for making measurements from two-dimensional astronomical images. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Astrophysics. (2)** Seminar, two hours. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for credit. P/NP grading.

**194. Research Group Seminars: Astrophysics. (1)** Research group meeting, one hour. Designed for undergraduate students who are part of research group/laboratory. Discussion of research of faculty members or students with regard to understanding methodology in field and/or laboratory equipment. May be repeated for credit. P/NP grading.

**196. Research Apprenticeship in Astrophysics. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors with overall 3.0 grade-point average. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP grading.

**197. Individual Studies in Astronomy. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198. Honors Research in Astrophysics. (2 to 4)** Tutorial, 12 hours. Limited to juniors/seniors with minimum overall 3.0 grade-point average. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Astronomy. (2 to 4)** Tutorial, two hours. Limited to junior/senior Astrophysics and Physics majors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**270. Astrophysical Dynamics. (4)** Lecture, three hours. Orbital dynamics: two-body problem, three-body problem, resonances, tides, migration. Galactic potentials. Milky Way structure and observed properties of galaxies. Collisionless Boltzmann equation and relaxation processes. Stability of stellar systems. Spiral structure. Letter grading.

**271. Electromagnetic Radiation in Astrophysics. (4)** (Formerly numbered 271A.) Lecture, three hours. Fundamentals of radiation field and Maxwell equations. Covariant formulation of fields and particles. Fundamentals of radiative transfer. Radiation from accelerated charges and mechanisms of continuous radiation. Line radiation. Thermal, statistical, and ionization equilibrium. Letter grading.

**272. Stellar Astrophysics. (4)** Lecture, three hours. Observations of stars. Equations of stellar structure and stellar models. Nuclear energy sources. Star formation. Binary stars. Main sequence stellar evolution. Compact objects: white dwarfs, neutron stars, and black holes. Brown dwarfs. Letter grading.

**273. Diffuse Matter in Space. (4)** Lecture, three hours. Molecular clouds, warm and hot phases of interstellar medium, HII regions. Gas excitation and emission in diffuse matter. Particulate interstellar matter: formation and spectral properties. Interstellar chemistry. Intergalactic medium. Letter grading.

**274. Extragalactic Astrophysics I. (4)** Lecture, three hours. Observational foundations of Big Bang. Friedmann equation. Cosmic inflation. Cosmic microwave background. Big Bang nucleosynthesis. Structure formation. Observations and theory of galaxy evolution. Galaxy clusters. Intergalactic medium. Letter grading.

**275. Extragalactic Astrophysics II. (4)** Lecture, three hours. Perturbation theory in expanding universe. Cosmological recombination. Nonlinear structure formation. Dark matter halos. Cosmological simulations.

Galaxy surveys through cosmic time. Stellar populations. Models of galaxy formation. Galaxies and supermassive black holes. Letter grading.

**276. Instrumentation and Observational Techniques. (4)** Lecture, three hours. Telescopes, optical principles, cameras, and spectrographs. Optical detectors; photomultiplier tubes, CCDs. Infrared detectors and arrays. Radio detectors. X-ray and gamma-ray detectors. Interferometry and aperture synthesis. Data analysis techniques. Statistical methods. Letter grading.

**277A-277B. Astronomy Research Project. (6-6)** Tutorial, to be arranged. Designed for second-year graduate astronomy students. Two-term research project planned in conjunction with faculty adviser on any suitable research topic in astronomy or astrophysics, culminating in written report at end of second term. S/U (277A) and letter (277B) grading.

**278. Special Topics in Astronomy. (2 or 4)** Seminar, to be arranged. Informal course with lecture/seminar format, focusing on one of set of specific topics in astronomy. S/U (2-unit course) or letter (4-unit course) grading.

**279. Seminar: Current Astronomical Research. (2)** Seminar, one hour. Astronomy and astrophysics colloquium with lectures on current research by local and visiting researchers. S/U grading.

**280. Fluid Dynamics in Astrophysics. (4)** Lecture, three hours. Basic equations and concepts of fluid dynamics and plasma physics with applications to shocks, supernovae, winds, and accretion. Fluid instabilities. Fundamentals of magnetohydrodynamics. Letter grading.

**281. Quantum Mechanics for Astrophysics. (4)** Lecture, four hours. Designed for departmental graduate students. Quantum mechanical topics in areas of interest for astrophysics applications. Hydrogen atom, radiative transitions, complex atoms, molecular spectroscopy including electronic, vibrational, and rotational transition, nuclear reaction theory. Letter grading.

**282. High-Energy Astrophysics. (4)** Lecture, three hours. Interactions of high-energy photons with matter. Telescopes and detectors (X-ray, gamma-ray, and radio). Accretion. Supernovae and gamma-ray bursts. Compact objects. Active galactic nuclei. Particle acceleration and cosmic rays. Dark matter, gravitational waves, neutrino astronomy. Letter grading.

**283. Numerical and Statistical Methods. (4)** Lecture, three hours. Topics selected by instructor in mathematical, numerical, and statistical methods of relevance to modern astrophysical research. Topics include Fourier transforms, filtering, and power spectra, numerical algorithms, N-body codes, maximum likelihood, Bayesian inference, and error estimation. Letter grading.

**284. Order of Magnitude Astrophysics. (4)** Lecture, three hours. Practice in real-time problem solving covering all fields of astrophysics. Topics selected by instructor. Students work together and individually to solve problems on blackboard using basic physics and order of magnitude estimations. Letter grading.

**M285. Origin and Evolution of Solar System. (4)** (Same as Earth, Planetary, and Space Sciences M285.) Lecture, four hours. Dynamical problems of solar system; chemical evidences from geochemistry, meteorites, and solar atmosphere; nucleosynthesis; solar origin, evolution, and termination; solar nebula, hydromagnetic processes, formation of planets and satellite systems. Content varies from year to year. May be repeated for credit. S/U grading.

**286. Exoplanets: Properties, Origin, and Evolution. (4)** Lecture, three hours. Detection and statistics of extrasolar planets. Theories of planet formation. Structural and dynamical evolution of planets. Signatures and consequences of evolution. Interior and atmospheric structure. Relationship between planets and smaller bodies. Habitable zones. Letter grading.

**296. Research Topics in Astronomy. (2)** Discussion, two hours. Advanced study and analysis of current topics in astronomy. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**297. Practice of Scientific Presentations in Astronomy. (2)** (Formerly numbered M297.) Lecture, one hour. Training and practice in giving scientific presentations in context of astronomy and astrophysics. Includes brief review of basic principles of effective scientific communication. Students give talks on their research and/or other topics and receive detailed feedback from both peers and instructor. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596A. Directed Individual Studies. (4 to 10)** Tutorial, to be arranged. May be repeated at discretion of department. S/U grading.

**596L. Advanced Study and Research at Lick Observatory. (4 to 12)** Tutorial, to be arranged. Designed for graduate students who require observational experience, as well as those working on observational problems for their thesis. May be repeated at discretion of department. S/U grading.

**599. PhD Research and Writing. (10 to 12)** Tutorial, to be arranged. May be repeated at discretion of department. S/U grading.

## Physics

### Lower-Division Courses

**1A. Physics for Scientists and Engineers: Mechanics. (5)** Lecture/demonstration, four hours; discussion, one hour. Enforced requisites: Mathematics 31A, 31B. Enforced corequisite: Mathematics 32A. Motion, Newton laws, work, energy, linear and angular momentum, rotation, equilibrium, gravitation. P/NP or letter grading.

**1AH. Physics for Scientists and Engineers: Mechanics (Honors). (5)** Lecture/demonstration, four hours; discussion, one hour. Enforced requisites: Mathematics 31A, 31B. Enforced corequisite: Mathematics 32A. Recommended corequisite: Mathematics 32B. Enriched preparation for upper-division physics courses. Same material as course 1A but in greater depth; recommended for Physics majors and other students desiring such coverage. P/NP or letter grading.

**1B. Physics for Scientists and Engineers: Oscillations, Waves, Electric and Magnetic Fields. (5)** Lecture/demonstration, four hours; discussion, one hour. Enforced requisites: course 1A, Mathematics 31B, 32A. Enforced corequisite: Mathematics 32B. Fluid mechanics, oscillation, mechanical waves, and sound. Electric charge, field and potential, capacitors, and dielectrics. Currents and resistance, direct-current circuits. P/NP or letter grading.

**1BH. Physics for Scientists and Engineers: Oscillations, Waves, Electric and Magnetic Fields (Honors). (5)** Lecture/demonstration, four hours; discussion, one hour. Enforced requisites: course 1AH or 1A, Mathematics 31B, 32A. Enforced corequisite: Mathematics 32B. Recommended corequisite: Mathematics 33A. Enriched preparation for upper-division physics courses. Same material as course 1B but in greater depth; recommended for Physics majors and other students desiring such coverage. P/NP or letter grading.

**1C. Physics for Scientists and Engineers: Electrodynamics, Optics, and Special Relativity. (5)** Lecture/demonstration, four hours; discussion, one hour. Enforced requisites: course 1A, 1B, Mathematics 32A, 32B. Enforced corequisite: Mathematics 33A. Magnetic fields, Ampere's law, Faraday's law, inductance, and alternating current circuits. Maxwell's equations, electromagnetic waves, light, geometrical optics, interference and diffraction. Special relativity. P/NP or letter grading.

**1CH. Physics for Scientists and Engineers: Electrodynamics, Optics, and Special Relativity (Honors).**

(5) Lecture/demonstration, four hours; discussion, one hour. Enforced requisites: courses 1AH or 1A, 1BH or 1B, Mathematics 32A, 32B. Enforced corequisite: Mathematics 33A. Recommended corequisite: Mathematics 33B. Enriched preparation for upper-division physics courses. Same material as course 1C but in greater depth; recommended for Physics majors and other students desiring such coverage. P/NP or letter grading.

**4AL. Physics Laboratory for Scientists and Engineers: Mechanics. (2)** Laboratory, four hours. Enforced requisite: course 1A or 1AH. Enforced corequisite: course 1B or 1BH. Computerized measurements of uniform and accelerated motion, including oscillations. Analysis of data and comparison of results to predictions, including least-squares fitting. Conception, execution, and presentation of creative projects involving motion. Letter grading.

**4BL. Physics Laboratory for Scientists and Engineers: Electricity and Magnetism. (2)** Laboratory, four hours. Enforced requisites: courses 1A or 1AH, 1B or 1BH. Enforced corequisite: course 1C or 1CH. Sound waves and electric circuits, taken by digital oscilloscopes and analyzed by Fourier transformation. Geometrical and physical optics. Conception, execution, and presentation of creative projects involving sound waves or electric circuits. Letter grading.

**5A. Physics for Life Sciences Majors: Mechanics and Energy. (5)** Lecture, three hours; discussion, one hour; laboratory, two hours. Requisites: Life Sciences 30A, 30B, or Mathematics 3A, 3B, 3C (3C may be taken concurrently). Statics and dynamics of forces, motion, energy, including thermal energy, with applications to biological and biochemical systems. P/NP or letter grading.

**5B. Physics for Life Sciences Majors: Thermodynamics, Fluids, Waves, Light, and Optics. (5)** Lecture, three hours; discussion, one hour; laboratory, two hours. Requisite: course 5A. Thermal properties of matter, free energy, fluids, ideal gas, diffusion, oscillations, waves, sounds, light, and optics, with applications to biological and biochemical systems. P/NP or letter grading.

**5C. Physics for Life Sciences Majors: Electricity, Magnetism, and Modern Physics. (5)** Lecture, three hours; discussion, one hour; laboratory, two hours. Requisite: course 5A. Electrostatics in vacuum and in water. Electricity, circuits, magnetism, quantum, atomic and nuclear physics, radioactivity, with applications to biological and biochemical systems. P/NP or letter grading.

**10. Physics. (4)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 1A, 1AH, 5A, or 6A. Special mathematical preparation beyond that necessary for admission to University in freshman standing not required. Topics include planetary motion, Newton laws, gravitation, electricity and magnetism, wave motion, light, sound, and heat, relativity, quantum mechanics, atoms, and subatomic particles. As time permits, development of physical ideas placed in cultural and historical perspective. P/NP or letter grading.

**11. Revolutions in Physics. (4)** Lecture, three hours; discussion, one hour. Survey of modern physics intended for general UCLA students. Overview of classical physics from late 19th century and its growing set of dilemmas. Revolutions of relativity and quantum mechanics that have led to much deeper understanding of structure and evolution of our Universe. Specific topics include special and general relativity, cosmology (Big Bang), quantization of light, nucleus and radioactivity, origin of elements, and quantum mechanics. P/NP or letter grading.

**12. Physics of Sustainable Energy. (4)** Lecture, three hours; discussion, one hour. Special mathematical preparation beyond that necessary for admission to UCLA in freshman standing not required. Discussion of physics underpinnings of energy sources and consumption, with emphasis on renewables. Global view of energy balance in our lives from point of view of physical processes. Ways in which energy is used in everyday life (transportation, heating, cooling), and ways in which it is produced, covering all common

and speculative sources of energy from fossil fuels to solar, wind, nuclear, and fusion. Fundamental physical limitations of each technology to master concepts such as efficiency of thermodynamic cycles and of chemical and nuclear reactions. Quantitative estimation of amount of energy students use in their daily lives and what physical processes could produce it. P/NP or letter grading.

**17. Modern Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH). Corequisite: course 32. Photons, black-body radiation, photoelectric effect, uncertainty principle, Bohr atom, Schrödinger equation, hydrogen atom, and selected topics in atomic, solid-state, nuclear, and particle physics. P/NP or letter grading.

**18L. Modern Physics Laboratory. (4)** Lecture, one hour; laboratory, six hours. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), 4AL, 4BL, 17. Experiments on radioactivity, scattering, Planck constant, superconductivity, superfluidity. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP or letter grading.

**32. Mathematical Methods. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, 1C (or 1AH, 1BH, 1CH), Mathematics 32A, 32B, 33A. Corequisite: Mathematics 33B. Vectors and fields; operators and transformations; matrices, tensors, and differential forms; ordinary differential equations and integral theorems; Fourier transform. P/NP or letter grading.

**88. Lower-Division Seminar: Current Topics in Physics. (2)** Limited to freshmen/sophomores. Intensive exploration of a particular theme or topic based on current research. Consult Schedule of Classes for topics to be offered in a specific term. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**98XA. PEERS Collaborative Learning Workshops for Life Sciences Majors. (1)** Laboratory, three hours. Corequisite: associated undergraduate lecture course in physics for life sciences majors. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of problem-solving skills and intuition in collaborative learning environment. May be repeated three times, but only 1 unit may be applied toward graduation. P/NP or letter grading.

**98XB. PEERS Collaborative Learning Workshops for Physical Sciences and Engineering Majors. (1)** Laboratory, three hours. Corequisite: associated undergraduate lecture course in physics for physical sciences and engineering majors. Limited to Program for Excellence in Education and Research in Science (PEERS) students. Development of problem-solving skills and intuition in collaborative learning environment. May be repeated three times, but only 1 unit may be applied toward graduation. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**105A. Analytic Mechanics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 32. Corequisite: Mathematics 33B. Newtonian mechanics and conservation laws, gravitational potentials, calculus of variations, Lagrangian and Hamiltonian mechanics, central force motion, linear and nonlinear oscillations. P/NP or letter grading.

**105B. Analytic Mechanics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 105A. Conserved quantities, collisions and scattering, special relativity, non-inertial reference frames, rigid bodies, coupled oscillators, and normal modes. P/NP or letter grading.

**108. Optical Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), 110B. Interaction of light with matter; dispersion theory, oscillator strength, line widths, molecular scattering. Coherence theory, Kirchhoff formulation of diffraction theory, crystal optics, optical rotation, electro and magneto optical effects. Additional topics of fundamental or current interest. P/NP or letter grading.

**110A. Electricity and Magnetism. (4)** Lecture, three hours; discussion, one hour. Requisite: course 32. Electrostatics and magnetostatics. P/NP or letter grading.

**110B. Electricity and Magnetism. (4)** Lecture, three hours; discussion, one hour. Requisite: course 110A. Corequisite: course 105B. Maxwell's equations, electromagnetic waves, potential and fields, radiation, Lorentz invariance. P/NP or letter grading.

**112. Thermal Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: course 115A. Corequisite: course 115B. Fundamentals of thermodynamics and statistical mechanics. Classical and quantum ensembles. Simple applications including heat engines and pumps. Degenerate Fermi gases, Bose condensates, and blackbody radiation. P/NP or letter grading.

**114. Mechanics of Wave Motion and Sound. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), 105A, 105B, Mathematics 32B, 33A, 33B. Vibrating systems and wave propagation in gases, liquids, and solids, including elements of hydrodynamics and elasticity. Applications in ultrasonics, low-temperature physics, solid-state physics, architectural acoustics. P/NP or letter grading.

**115A. Quantum Mechanics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 17, 32, 105A. Classical background. Basic ideas of quantum nature of light, wave-particle duality, Heisenberg uncertainty principle, Schrödinger equation. One-dimensional square well and harmonic oscillator problems. One-dimensional scattering, Formal theory, Hilbert spaces, and Dirac notation. P/NP or letter grading.

**115B. Quantum Mechanics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 115A. Corequisite: course 105B. Three-dimensional problems. Central potentials. Hydrogen atom. Angular momentum and spin, identical particles, and Pauli exclusion principle. Electrons in electromagnetic field. Symmetries. P/NP or letter grading.

**115C. Quantum Mechanics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 115B. Time-independent perturbation theory, application to atomic spectra. Time-dependent perturbation theory. Fermi's golden rule. Scattering. Wentzel-Kramers-Brillouin (WKB) approximation. P/NP or letter grading.

**118. Electronics for Physical Measurements. (4)** Lecture, three hours; laboratory, four hours. Requisites: courses 1A, 1B, 1C, 117, Mathematics 32A, 32B, 33A. Provides students with opportunity to apply basic knowledge of circuit design for purpose of building stand-alone circuits with function related to control or measurement. Examples of physics-oriented projects include radio-frequency detection and measurement of mechanical resonances of bar, FM transmitter, speed of sound using radio-frequency pulsed ultrasound, sun-following pointers, cosmic ray detector. P/NP or letter grading.



**M122. Introduction to Plasma Science and Engineering. (4)** (Same as Earth, Planetary, and Space Sciences M156 and Electrical and Computer Engineering M185.) Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 110B or Electrical and Computer Engineering 101A. Senior-level introductory course on electrodynamics of charged particles and their collective behavior in plasmas in laboratory, near-Earth space and astrophysical settings. Covers selected applications taken from fusion energy, space weather, materials processing, generation of coherent radiation and particle accelerators. Letter grading.

**123. Atomic Structure. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), Mathematics 32B, 33A, 33B. Corequisite: course 115C. Theory of atomic structure. Interaction of radiation with matter. P/NP or letter grading.

**124. Nuclear Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), Mathematics 32B, 33A, 33B. Corequisite: course 115C. Nuclear properties, nuclear forces, nuclear structure, nuclear decays, and nuclear reactions. P/NP or letter grading.

**126. Elementary Particle Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), Mathematics 32B, 33A, 33B. Corequisite: course 115C. Introduction to physics of elementary particles. The four basic interactions: strong, electromagnetic, weak, and gravitational. Properties of baryons, mesons, quarks, and leptons; conservation laws, symmetries and broken symmetries; the Standard Model; experimental techniques; new physics at the new accelerators. P/NP or letter grading.

**127. General Relativity. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 105B, 110A, 110B, 131. Recommended: courses 115A, 115B, 115C. Introduction to general relativity. Principle of equivalence and curved spacetime, local initial frames, vectors and three-dimensional surfaces in curved spacetime. Schwarzschild metric, perihelion precession, bending of light by sun, and gravitational redshift. Star-system applications, black holes, gravitational waves. Introduction to cosmology, including Robertson/Walker metric and expanding universe solution to Friedman equations. Dark energy and cosmological constant. P/NP or letter grading.

**128. Cosmology and Particle Astrophysics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 115A, 115B, 126. Introduction to cosmology and high-energy particle astrophysics, based on latest developments of both experiment and theory. Special emphasis on unified picture of universe that emerges from particle physics, astronomy, and cosmology. Extensive discussion of unsolved problems and future prospects to help students determine their opportunities in future. Letter grading.

**131. Mathematical Methods of Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), Mathematics 32B, 33A, 33B. Vectors and fields in space, linear transformations, matrices, and operators; Fourier series and integrals. P/NP or letter grading.

**132. Mathematical Methods of Physics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), Mathematics 32B, 33A, 33B. Functions of a complex variable, including Riemann surfaces, analytic functions, Cauchy theorem and formula, Taylor and Laurent series, calculus of residues, and Laplace transforms. P/NP or letter grading.

**140A. Introduction to Solid-State Physics. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 112. Introduction to basic theoretical concepts of solid-state physics with applications. Crystal symmetry; cohesive energy; diffraction of electron, neutron, and electromagnetic waves in a lattice; reciprocal lattice; phonons and their interactions; free electron theory of metals; energy bands. Letter grading.

**140B. Properties of Solids. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 140A. Elementary discussion of properties of solids. Use of theory of electrons and the lattice to examine properties of semiconductors, metals, and superconductors, together with magnetic and dielectric properties of materials. Properties of noncrystalline solids. Letter grading.

**144. Polymer Physics. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 105A, 110A, and 112 or Chemistry 110A. How physical properties of polymers can be derived from mathematical models of chains and coils. Comparison of these models to calculations based on random walk problem and used to predict mechanical characteristics of large molecules. Study of networks of polymers and polymeric fluids, with focus on their viscoelastic properties. Discussion of movement of individual polymers within melts. Study of examples of more complex structures, such as polymer fractals. Consideration of applications of this work to biology, with focus on their potential role in evolution and current hypotheses on origins of life. P/NP or letter grading.

**150. Physics of Charged-Particle and Laser Beams. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), 110A, 110B, 115A, 115B. Physics of charged-particle and laser beams presented as a unified subject. Basic physics of charged-particle beams, covering relativistic particle motion in electromagnetic fields, transverse focusing, acceleration mechanisms, linear and circular accelerators, and advanced topics. Some fundamentals of laser physics, including gain and broadening mechanisms, linear light optics, laser resonators, and advanced topics and applications. P/NP or letter grading.

**170A. Electronics for Physics Measurement. (4)** (Formerly numbered 117.) Lecture, two hours; laboratory, four hours. Requisites: courses 1A, 1B, and 1C (or 1AH, 1BH, and 1CH), Mathematics 32B, 33A, 33B. Hands-on experimental course to develop understanding of design principles in modern electronics for physics measurements. Broad introduction to analog and digital electronics from practical viewpoint, followed by examination of typical circuits for scientific instrumentation and study of methods of computer data acquisition and signal processing. Letter grading.

**170E. Introduction to Symbolic Computation. (4)** Lecture, one hour; laboratory, three hours. Corequisite: course 105A. Students learn to use Mathematica or other programs to solve variety of mathematical problems that arise in physics. Use of skills developed to solve complicated systems, model behavior, and explore in greater depth other advanced physics topics. P/NP or letter grading.

**C170M. Machine Learning for Physical Sciences Laboratory. (4)** (Formerly numbered 170M.) Lecture, two hours; laboratory, four hours. Requisites: courses 1A, 1B, 1C (or 1AH, 1BH, 1CH), Mathematics 32A, 33A, or equivalent. Preparation: some experience in programming using Python. Project-based course designed for students with no previous experience in machine learning to learn about methods and algorithms in machine learning and their application to scientific problems in physical sciences. Development of experience in compilation, analysis, and cleaning of data. Machine learning topics include classification, regression, dimensionality reduction, clustering, and kernel methods. Concurrently scheduled with course C270M. P/NP or letter grading.

**170N. Computational Physics and Astronomy Laboratory. (4)** (Formerly numbered 180N.) Lecture, two hours; laboratory, four hours. Requisites: courses 105B, 110B, 112 (or Astronomy 115), 115B. Prior experience in working with computers is helpful but not required. Designed to give first-hand experience in solving physics and astronomy problems on computers. Project-based course, with projects selected from core areas of classical mechanics, electrodynamics, quantum physics, statistical physics, and astronomy. Introduction to problems and to required numerical methods in lectures, so students can write programs in one modern programming language of

their choice (Python recommended) and carry out numerical experiments with it, with results documented in reports. P/NP or letter grading.

**180A. Nuclear Physics Laboratory. (4)** Lecture, two hours; laboratory, four hours. Recommended: course 124. Students conduct experiments about cosmic ray counting and statistics, radioactive decay law measurement, beta decay spectrometer, and Compton scattering; perform independent data analyses of experimental data; and write scientific report for each experiment. P/NP or letter grading.

**180C. Solid-State Laboratory. (4)** Lecture, two hours; laboratory, four hours. Recommended: course 140A. Laboratory experiments survey quantum and collective phenomena in solids, such as quantum oscillations, superconductivity, and ferroelectricity. Use of introduced methods to investigate bulk properties, such as magneto-transport, dielectric, and magnetic responses. P/NP or letter grading.

**180D. Acoustics Laboratory. (4)** Lecture, two hours; laboratory, four hours. Recommended: courses 112, 114. Study of waves and sound propagation in different media. Students uncover various waves in different phases of matter, including gases, liquids, and superfluids. Description of experiments in terms of hydrodynamic theory. Students gain experience in basic electronics, amplifiers, speakers, microphones, cryogenics, and fast Fourier transforms. P/NP or letter grading.

**180E. Plasma Physics Laboratory. (4)** Lecture, two hours; laboratory, six hours. Requisite: course 110B. Recommended: course M122. Investigation of plasma physics concepts through experiments using laboratory plasmas. Topics explored may include plasma breakdown and formation by cathode discharge and inductively-coupled electric fields, measurement of plasma properties using Langmuir probes, and excitation and measurement of plasma waves. Theory of operation and use of vacuum systems, electronics, pulsed high power sources, variety of measurement techniques, and data acquisition systems. P/NP or letter grading.

**180F. Elementary Particle Laboratory. (4)** Lecture, two hours; laboratory, six hours. Requisites: courses 110A, 115B. Recommended: courses 18L, 126. Experience with computer programming, especially Python, is helpful but not required. Provides hands-on experience in measuring key properties of weak and electromagnetic interactions using cosmic ray muons. Provides exposure to common experimental techniques in particle physics. Overview of standard model, interaction of particles with matter, basic particle detection techniques, introductory probability and statistics, and analysis with Python and ROOT. P/NP or letter grading.

**M180G. Soft Matter Laboratory. (4)** (Same as Chemistry M120.) Lecture, 90 minutes; laboratory, four hours. Requisites: courses 110B, 115A. Students gain experience of conducting independent research in experimental biological physics. Construction of modern microscope. Use of microscope to image biological specimens. Students learn optics, diffraction, imaging, microscopy, computational physics, and/or fluorescent labeling. P/NP or letter grading.

**180Q. Quantum Optics Laboratory. (4)** Lecture, two hours; laboratory, six hours. Requisite or corequisite: course 115C. Limited to junior/senior Astrophysics and Physics majors. Use of techniques of quantum optics to demonstrate concepts of quantum mechanics, including superposition, quantum measurement, hidden variable theories, and Bell's inequality. Examination and use of modern optics, including lasers, optics, fibers, polarization manipulation, and photon counting. Letter grading.

**C186. Neurophysics: Brain-Mind Problem. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C, or 5A, 5B, and 5C, or 6A, 6B, and 6C, Chemistry 14A or 20A, Mathematics 3A, 3B, 3C, 33A. How does mind emerge from brain? Provides summary of basic biophysics of neurons, synapses, and plasticity. Introduction to commonly used experimental and theoretical techniques of measuring, quantifying, and modeling neural activity, and their relative strengths and weakness and use of them to understand link between neural circuits, their emergent

neural dynamics, and behavior in example model systems. Discussion of mechanisms of interaction between neural circuits and their role in cognition, learning, and sleep. Computer laboratory component where students learn to write simple codes to quantify neural activity patterns. Concurrently scheduled with course C286. P/NP or letter grading.

**C187A. Biological Physics I: Life at Rest. (4)** Lecture, three hours. Enforced requisites: courses 105A, 110A, 115A, Chemistry 110A, Molecular, Cell, and Developmental Biology 100 (or M140 or 165A). Equilibrium phenomena. Application of basic mechanics, optics, and thermodynamics to biological design: structure of skeleton, scaling of bone and muscle mass, swim bladders, and animal vision. Application of elementary statistical physics, electrostatics, and elasticity to structure of proteins, DNA, and biomembranes. Concurrently scheduled with course C287A. P/NP or letter grading.

**C187B. Biological Physics II: Life in Motion. (4)** Lecture, three hours. Enforced requisites: courses 105A, 110A, 115A, C187A, Chemistry 110A, Molecular, Cell, and Developmental Biology 100. Nonequilibrium phenomena. Application of mechanics, hydrodynamics, diffusion, and electrical transport to dynamical phenomena. Macroscopic phenomena: swimming, flying, thermoregulation, blood circulation, breathing, electrical transport along membranes. Physics of cells: Brownian motion, molecular motors, and cytoskeleton. Concurrently scheduled with course C287B. P/NP or letter grading.

**188. Special Courses in Physics. (4)** Lecture, three hours; discussion, one hour. Limited to junior/senior Astrophysics and Physics majors. Departmentally sponsored temporary courses such as pilot courses or those taught by visiting faculty members. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Physics. (2)** Seminar, two hours. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for credit. P/NP or letter grading.

**191. Variable Topics Research Seminars: Physics and Astronomy. (4)** Seminar, three hours. Participating research seminar on advanced topics in physics. Reading, discussion, and development of culminating project. Content varies from year to year. May be repeated for credit by petition. P/NP or letter grading.

**192. Undergraduate Practicum in Physics. (2 to 4)** Seminar, three hours. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students. Students assist in preparation of materials and development of innovative programs with guidance of faculty members in small course settings. May be repeated for credit. P/NP or letter grading.

**192M. Methods and Application of Collaborative Learning Theory in Physical Sciences. (2 to 4)** Seminar, two hours; laboratory, six hours. Requisites: one course from 1A, 1B, 1C, 5A, 5B, 5C, or 131, course 192S (may be taken concurrently), and at least one term of prior experience in same course in which collaborative learning theory is practiced and refined under supervision of instructors. With instructor guidance, students apply pedagogical principles based on current education research, assist with the development of innovative instructional materials, and receive frequent feedback on their progress. May be repeated four times for credit. Letter grading.

**M192S. Introduction to Collaborative Learning Theory and Practice. (1)** (Formerly numbered 192S.) (Same as Atmospheric and Oceanic Sciences M192A, Chemistry M192E, Computer Science M192A, Life Sciences M192A, and Mathematics M192A.) Seminar, one hour. Training seminar for undergraduate students who are selected for learning assistant (LA) program. Exploration of current topics in pedagogy and education research focused on methods of learning and their practical application in small-group settings. Students practice communication skills with frequent assessment of and feedback on progress. Letter grading.

**193. Journal Club Seminars: Physics. (2)** Seminar, one hour. Limited to undergraduate students. Seminars are linked to speaker-series seminars offered by department on weekly basis. Supplemental reading from literature on speaker's topic, as well as active participation and discussion to understand what kind of questions modern-day physicists actually ask and how they go about answering them. May be repeated for credit. P/NP or letter grading.

**194. Research Group Seminars: Physics and Astronomy. (1)** Research group meeting, one hour. Designed for undergraduate students who are part of research group/laboratory. Discussion of research of faculty members or students with regard to understanding methodology in field and laboratory equipment. May be repeated for credit. P/NP or letter grading.

**196. Research Apprenticeship in Physics. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors with overall 3.0 grade-point average. Entry-level research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP or letter grading.

**197. Individual Studies in Physics. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198. Honors Research in Physics. (2 to 4)** Tutorial, 12 hours. Limited to juniors/seniors with overall 3.0 grade-point average. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Physics. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**201Q. Modern Physics Research Areas. (2)** Review of modern physics research areas, with emphasis on those actively pursued at UCLA. S/U grading.

**210A. Electromagnetic Theory. (4)** Lecture, three hours; discussion, one hour. Boundary value problems in electrostatics and magnetostatics. Multipole expansions; dielectrics and macroscopic media. Maxwell equations and conservation laws. Wave guides and resonators; simple radiating systems. Letter grading.

**210B. Electromagnetic Theory. (4)** Lecture, three hours; discussion, one hour. Electromagnetic potentials and Hertz vectors. Cylindrical waves. Spherical waves. Debye potentials. Multipole radiation. Classical relativistic electrodynamics. Radiation from moving charges. Letter grading.

**213A. Advanced Atomic, Molecular, and Optical Physics. (4)** Lecture, three hours. Requisite: course 221A. Atomic and molecular structure, light-matter interactions, density matrix representation, Jayne-Cummings Hamiltonian, and sample of current techniques. S/U or letter grading.

**213B. Advanced Atomic, Molecular, and Optical Physics. (4)** Lecture, three hours. Requisite: course 221A (may be taken concurrently). Quantum optics, quantum entanglement, quantum information processing, quantum sensing, quantum communication. S/U or letter grading.

**213C. Molecular Structure. (4)** Application of group theory to vibrational and electronic states of molecules. Molecular orbital theory. Raman effect. Angular momentum and coupling in molecules.

**215A. Statistical Physics. (4)** Lecture, three hours; discussion, one hour. Microstates and macrostates, statistical ensembles, entropy and other thermodynamic functions, equilibrium, variational principles, functional integration methods. Applications: ideal gas, oscillators, rotors, elasticity, paramagnetism. Indistinguishable particles, Fermi/Dirac and Bose/Einstein distributions. Applications: electron gas, neutron stars, white dwarfs, Bose/Einstein condensation. Kinetics. Letter grading.

**215B. Advanced Statistical Mechanics. (4)** Lecture, three hours. Symmetry characterization of phases of matter, phase transitions, Landau theory, order parameters. Applications: superfluidity, liquid crystals, superconductivity, Higgs mechanism. Scaling theory of critical phenomena, correlation functions, critical exponents, renormalization group methods. Goldstone models and topological defects, spin waves, sound waves, Kosterlitz/Thouless transition. S/U or letter grading.

**M215D. Nonequilibrium Statistical Mechanics and Molecular Biophysics. (4)** (Same as Chemistry M223C.) Lecture, three hours. Requisites: course 215A, or Chemistry C215B and C223B. Fundamentals of nonequilibrium thermodynamics and statistical mechanics applied to molecular biophysics. S/U or letter grading.

**220. Classical Mechanics. (4)** Lecture, three hours; discussion, one hour. Lagrangian formulation, action, symmetries, conservation laws; Hamiltonian formulation, canonical structure, symmetries. Applications: harmonic oscillators, rotating solids. Special relativistic mechanics, Maxwell field, and dynamics of charged particles. Nonlinear dynamics and global behavior. Letter grading.

**221A. Quantum Mechanics. (4)** Lecture, four hours; discussion, one hour. Fundamentals of quantum mechanics, Hilbert spaces, correspondence principle, quantum dynamics, and rotations and angular momentum. Special topics such as Bell inequalities, and aspects of quantum information. Letter grading.

**221B. Quantum Mechanics. (4)** Lecture, four hours; discussion, one hour. Requisite: course 221A. Symmetries and conservation laws, perturbation theory, scattering theory. Special topics such as Berry's phase and related geometric and topological aspects. Letter grading.

**221C. Quantum Mechanics. (4)** Lecture, four hours. Requisites: courses 221A, 221B. Quantum theory of radiation, introduction to relativistic quantum mechanics, second quantization, elements of many-body theory, and special topics. S/U or letter grading.

**222A-222B-222C. Plasma Physics. (4-4-4)** Lecture, three hours. Properties of Coulomb gas with and without magnetic field: equilibrium, oscillations, instabilities, fluctuations, collective phenomena, transport properties, and radiation. Description via single-particle orbit theory, magnetohydrodynamics, and kinetic equations of various types. S/U or letter grading.

**226A-226B-226C. Elementary Particle Physics. (6-6-6)** Lecture, four hours. Requisites: courses 221A, 221B, 221C, 230A, 230B (230A, 230B may be taken concurrently). Modern theories of elementary particle physics beginning with symmetry principles and conserved quantities, classic V-A theory of weak interactions, gauge field theories (Abelian and non-Abelian), spontaneous symmetry breaking,  $SU(2) \times U(1)$  electroweak interactions of leptons, quarks,  $W$ s,  $Z^0$  and  $\gamma$ , quark theory of hadrons and quantum chromodynamics. S/U or letter grading.

**226D. Beyond the Standard Model. (4)** Lecture, three hours. Requisites: courses 226A, 226B, 226C, 230A, 230B, 230C. Discussion of possible extensions of the current standard model of electroweak and strong interactions, including axions, Technicolor, grand unified theories, supersymmetry, supergravity, and superstrings. S/U grading.

**226E. Particle Astrophysics: Exploring Earliest and Extreme Universe. (4)** Lecture, three and one half hours. Requisites: courses 210A, 210B, 221A, 221B. Recommended: course 226A. Introduction to high-energy astrophysics and discussion of latest developments in both experimentation and theory. Special emphasis on unified picture of universe that emerges from particle physics, astronomy, and cosmology. S/U or letter grading.

**230A. Quantum Field Theory. (6)** Lecture, four hours. Requisite: course 221C or equivalent and knowledge of basic special relativity. Introduction to relativistic quantum field theory starting from first principles. Topics include particles as unitary representations of Poincaré group; fields as finite-dimensional representations of Lorentz group; discrete space-time symmetries; quantization of free scalar, spinor, and gauge fields; Casimir effect; classical interacting scalar, spinor, and gauge fields; and LSZ formalism for calculation of S-matrix from quantum field theory correlators. S/U or letter grading.

**230B. Quantum Field Theory. (6)** Lecture, four hours. Requisite: course 230A. Perturbative methods for quantization of interacting quantum field theories. Topics include functional methods in scalar field theory, perturbation theory for scalar field theory, Feynman rules, UV regularization and renormalization, perturbation theory for quantum electro-dynamics (QED), Ward identities, renormalization of QED, and anomalies in QED. S/U or letter grading.

**230C. Quantum Field Theory. (6)** Lecture, four hours. Requisite: course 230B. Quantization of non-Abelian gauge theories. Topics include functional integral quantization of Yang-Mills fields, Faddeev-Popov ghosts, perturbative expansion of non-Abelian gauge theories and Feynman rules, background field method, one-loop renormalization of Yang-Mills theory, asymptotic freedom, global internal symmetries, Ward identities, non-linear realizations, Higgs mechanism, anomalies in non-Abelian gauge theories. S/U or letter grading.

**230D. Quantum Field Theory. (4)** Lecture, four hours. Requisites: courses 221A, 221B, 221C. Topics in modern quantum field theory, including solitons, instantons, and other topological defects, large  $N$  methods, finite temperature field theory, lattice field theory, effective field theory methods and chiral Lagrangians, conformal field theory, and topological aspects of anomalies. S/U or letter grading.

**231A. Methods of Mathematical Physics. (4)** Lecture, four hours. Widely used mathematical methods and their applications to physics including basic topology, complex analysis, Fourier analysis, elliptic functions, linear differential operators, Green func-

tions, and special functions associated with eigenvalue problems of ordinary and partial differential operators on flat and curved spaces. Letter grading.

**231B. Methods of Mathematical Physics. (4)** Lecture, four hours. Requisites: courses 221A, 231A, or equivalent. Widely used methods of group theory with applications to physics, including matrix Lie groups and Lie algebras, crystallographic groups, representations of groups and Lie algebras, tensors, spinors, roots, weights, structure of simple Lie algebras, and homogeneous spaces. S/U or letter grading.

**231C. Methods of Mathematical Physics. (4)** Lecture, three hours. Not open for credit to students with credit for Mathematics 266C. Perturbation theory. Singular integral equations. Numerical methods. S/U or letter grading.

**232A-232B. Relativity. (4-4)** Special and general theories, with applications to elementary particles and astrophysics.

**232C. Special Topics in General Relativity. (4)** Lecture, four hours. S/U or letter grading.

**M236. Geometry and Physics. (4)** (Same as Mathematics M217.) Lecture, three hours. Interdisciplinary course on topics at interface between physics quantum fields and superstrings and mathematics of differential and algebraic geometry. Topics include supersymmetry, Seiberg/Witten theory, conformal field theory, Calabi/Yau manifolds, mirror symmetry and duality, integrable systems. S/U grading.

**237A. String Theory. (4)** Lecture, four hours. Requisites: courses 221A, 221B, 221C, 230A. Historical introduction to string theory, including classical bosonic string and its symmetries, light cone quantization, covariant quantization, conformal field theory, Polyakov path integral, tree level amplitudes, and loop amplitudes. S/U grading.

**237B. String Theory. (4)** Lecture, four hours. Requisite: course 237A. Current topics in string theory, which may include anti-de Sitter/conformal field theory (AdS/CFT) correspondence, string dualities, compactification, and connections to quantum information. S/U or letter grading.

**241A. Solid-State Physics. (4)** Lecture, four hours. Requisites: courses 140A, 140B, 215A, 221C. Symmetry, free electrons, electrons in periodic potential, experimental measurement of band structure and Fermi surface parameters, cohesive energy, lattice vibrations, thermal properties. Letter grading.

**241B. Solid-State Physics. (4)** Lecture, three hours. Requisite: course 241A. Transport theory with applications, electron/electron interactions. S/U or letter grading.

**241C. Solid-State Physics. (4)** Lecture, three hours. Requisite: course 241B. Semiconductors, magnetism, phase transitions, superconductivity. S/U or letter grading.

**242A-242B. Advanced Solid-State Theory. (4-4)** Requisites: courses 241A, 241B, 241C (may be taken concurrently). Many body methods in solid-state physics.

**242C. Topology of Condense Matter. (4)** Lecture, four hours. Requisites: courses 241A, 241B, 241C, 242A, 242B. Covers advanced topics in condensed matter physics with focus on topology (both in real and momentum spaces). Systematic exposition of Berry phases and Chern numbers, along with underlying differential-geometric structure. Concrete practical examples including Su-Schrieffer-Heeger model for polyacetylene and Majorana modes in one-dimensional superconductors, quantum Hall effects and topological insulators in two and three dimensions. Insights drawn from quantum pumping and bulk-edge correspondence especially emphasized. Range of topics based on topological defects in magnetic and superconducting systems and exploration of notions of topology for quantum transport and quantum information applications. Focus on aspects whose robustness is rooted in topological characteristics. S/U or letter grading.

**243A-243K. Special Topics in Solid-State Physics. (4 each)** Lecture, three hours. S/U or letter grading.

**243A. Disordered Systems; 243B. Magnetic Resonance; 243C. Quantum Criticality; 243D. Magnetism;**

**243E. Superconductivity; 243F. Macromolecules; 243G. Nanosystems; 243H. Optical Interactions; 243I. Nonlinear Optics; 243J. Topological Phases; 243K. Low-Temperature Physics.**

**M243L. Condensed Matter Physics of Cells. (4)** (Same as Biomathematics M243.) Seminar, four hours. Designed for graduate students. Basic paradigms of condensed matter physics and applications to biophysical modeling. S/U or letter grading.

**243M. Statistical Mechanics of Living Systems from Active Matter to Immune System. (2 to 4)** Seminar, four hours. Exploration of how concepts and models from statistical physics can be used to gain quantitative and intuitive understanding of biological phenomena. Introduction to analytical and computational methods for describing stochastic complex systems, with application to problems in mechanics and dynamics of active matter and evolutionary dynamics of immune system. S/U or letter grading.

**245. Quantum Computation. (4)** Lecture, three hours; discussion, one hour. Requisite: course 115A. Recommended requisites: courses 115B, 115C, 131. Quantum circuits, quantum Fourier transform, quantum algorithms, physical implementations and Jaynes-Cummings model. May not be repeated for credit. Letter grading.

**250. Introduction to Acceleration of Charged Particles. (4)** Lecture, three hours. Requisites: courses 210A, 210B, 215A. Principles of charged-particle acceleration, including principles of synchrotrons and storage rings, beam parameter determination, statistical behavior of beams and beam cooling techniques, synchrotron light sources, colliding beam storage rings, medical accelerators, and free electron lasers.

**260. Seminar: Problems in Plasma Physics. (4)** Seminar, four hours. S/U or letter grading.

**261. Seminar: Special Problems in Theoretical Physics. (4)** Seminar, four hours. S/U or letter grading.

**262. Seminar: Physics of the Solid State. (2 to 4)** Seminar, three hours. S/U or letter grading.

**264. Seminar: Advanced Physical Acoustics. (4)** Seminar, four hours. S/U or letter grading.

**266. Seminar: Propagation of Waves in Fluids. (2 to 4)** Seminar, three hours. S/U or letter grading.

**268. Seminar: Spectroscopy. (2 to 4)** Seminar, three hours. S/U or letter grading.

**269A. Seminar: Nuclear Physics. (2 to 4)** Seminar, three hours. S/U or letter grading.

**269B. Seminar: Elementary Particle Physics. (2 to 4)** Seminar, three hours. S/U or letter grading.

**269C. Seminar: Accelerator Physics. (2 to 4)** Seminar, three hours. Physics principles governing design and performance analysis of particle accelerators, using existing accelerators as examples and emphasizing interplay among design goals, component performance, and operational experience. S/U grading.

**269D. Strobe Seminar Series: Frontiers in Imaging and Microscopy. (2)** Seminar, one hour. Discussion with leading figures of frontiers of imaging and microscopy fields, including multi-dimensional electron microscopy at atomic resolution, real-time functional three-dimensional X-ray imaging of advanced materials, advanced optical nano-imaging, and integrative approaches and underpinning technologies for different imaging modalities. May be repeated twice for credit. S/U grading.

**C270M. Machine Learning for Physical Sciences Laboratory. (4)** Lecture, two hours; laboratory, four hours. Requisites: courses 1A, 1B, 1C (or 1AH, 1BH, 1CH), Mathematics 32A, 33A, or equivalent. Preparation: some experience in programming using Python. Project-based course designed for students with no previous experience in machine learning to learn about methods and algorithms in machine learning and their application to scientific problems in physical sciences. Development of experience in compilation, analysis, and cleaning of data. Machine learning topics include classification, regression, dimensionality reduction, clustering, and kernel methods. Concurrently scheduled with course C170M. S/U or letter grading.

**C286. Neurophysics: Brain-Mind Problem. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1A, 1B, and 1C, or 5A, 5B, and 5C, or 6A, 6B, and 6C, Chemistry 14A or 20A, Mathematics 3A, 3B, 3C, 33A. How does mind emerge from brain? Provides summary of basic biophysics of neurons, synapses, and plasticity. Introduction to commonly used experimental and theoretical techniques of measuring, quantifying, and modeling neural activity, and their relative strengths and weakness and use of them to understand link between neural circuits, their emergent neural dynamics, and behavior in example model systems. Discussion of mechanisms of interaction between neural circuits and their role in cognition, learning, and sleep. Computer laboratory component where students learn to write simple codes to quantify neural activity patterns. Concurrently scheduled with course C186. S/U or letter grading.

**C287A. Biological Physics I: Life at Rest. (4)** Lecture, three hours. Enforced requisites: courses 105A, 110A, 115A, Chemistry 110A, Molecular, Cell, and Developmental Biology 100 (or M140 or 165A). Equilibrium phenomena. Application of basic mechanics, optics, and thermodynamics to biological design: structure of skeleton, scaling of bone and muscle mass, swim bladders, and animal vision. Application of elementary statistical physics, electrostatics, and elasticity to structure of proteins, DNA, and biomembranes. Concurrently scheduled with course C187A. S/U or letter grading.

**C287B. Biological Physics II: Life in Motion. (4)** Lecture, three hours. Enforced requisites: courses 105A, 110A, 115A, C287A, Chemistry 110A, Molecular, Cell, and Developmental Biology 100. Nonequilibrium phenomena. Application of mechanics, hydrodynamics, diffusion, and electrical transport to dynamical phenomena. Macroscopic phenomena: swimming, flying, thermoregulation, blood circulation, breathing, electrical transport along membranes. Physics of cells: Brownian motion, molecular motors, and cytoskeleton. Concurrently scheduled with course C187B. S/U or letter grading.

**290. Research Tutorial: Plasma Physics. (2 or 4)** Three terms required of each graduate student doing research in this field, ordinarily during second or third year. Seminar and discussion by staff and students directed toward problems of current research interest in plasma physics group, both experimental and theoretical. May be repeated for credit. S/U grading.

**291. Research Tutorial: Elementary Particle Theory. (2 or 4)** Requisites: courses 226A, 230A, 230B. Required of each graduate student doing research in this field, ordinarily during second or third year. Seminar and discussion by staff, postdoctoral fellows, and graduate students. May be repeated for credit. S/U grading.

**292. Research Tutorial: Spectroscopy, Low-Temperature, and Solid-State Physics. (2 or 4)** Required of each graduate student doing research in these fields, ordinarily during second or third year. Seminar and discussion by staff and students on problems of current research interest in spectroscopy, low-temperature, and solid-state physics. May be repeated for credit. S/U grading.

**293. Research Tutorial: Current Topics in Physics. (2)** Lecture, one hour. Seminar and discussion by staff and students on current topics in physics, both experimental and theoretical (topics not limited to one field of physics). Strongly recommended for graduate students in physics. May be repeated for credit. S/U grading.

**294. Research Tutorial: Accelerator Physics. (2 or 4)** Lecture, one hour; discussion, two hours. Required of each graduate student doing research in this field. Seminar and discussion by faculty, postdoctoral fellows, and graduate students on topics of current interest in accelerator physics. May be repeated for credit. S/U grading.

**295. Research Tutorial: Soft Matter/Biological Physics. (2)** Tutorial, one hour. Required of each graduate student doing research in this field. One-hour presentation by students either on their ongoing research or on agreed on topic. Students answer critical questions and participate in critical examination of research. May be repeated for credit. S/U grading.

**296. Research Topics in Physics. (2)** Advanced study and analysis of current topics in physics. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**490. Scientific Writing. (2)** Seminar, 90 minutes. Practical guidelines for improved scientific writing and oral presentation. Writing of several short papers with subsequent analysis in class. Short blackboard and/or viewgraph presentations. Topics vary. S/U grading.

**495. Teaching College Physics. (2)** Seminar, two hours; multi-day intensive training at beginning of Fall Quarter. Required of all new teaching assistants. Special course for teaching assistants designed as an introduction to teaching college physics, with emphasis on applying discussed techniques in classroom. Ideas and skills learned are evaluated in the sections of each teaching assistant. May be repeated for credit. S/U grading.

**596. Directed Individual Studies. (2 to 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

**597. Preparation for Master's Comprehensive Examination or PhD Qualifying Examinations. (4)** Tutorial, to be arranged. May be repeated twice for credit. S/U grading.

**598. Master's Thesis Research and Writing. (4)** Tutorial, to be arranged. May be repeated twice for credit. S/U or letter grading.

**599. PhD Research and Writing. (4 to 12)** Tutorial, to be arranged. May be repeated for maximum of 18 units. S/U grading.

## Quantum Science and Technology Graduate Courses

**M205. Quantum Programming. (4)** (Same as Computer Science M238.) Lecture, four hours; discussion, two hours; outside study, six hours. Requisite: Mathematics 115A. History of quantum computing; notion of qubit; four postulates that provide interface to quantum mechanics; concepts of quantum circuit and universal gate set; quantum teleportation; superdense coding; no-cloning theorem; suite of fundamental quantum algorithms including Shor's algorithm, Grover's algorithm, and quantum approximate optimization algorithm; several quantum programming languages and how they compare; quantum simulators; quantum compilers; quantum error correction; quantum advantage. Students implement several quantum algorithms in multiple languages and run them on both simulators and quantum computer. Letter grading.

**402. Quantum Information. (4)** Lecture, three hours; discussion, one hour. Requisite: Physics 245. Density matrix evolution, decoherence, characterization of quantum states, distance measures between quantum states, fidelity, quantum error correction, entropy and information, and quantum information theory. May not be repeated for credit. Letter grading.

**403. Theory of Quantum Devices. (4)** Lecture, four hours. Requisites: course 402, Physics 245. Study of advanced theories, with some elements of quantum transport and advanced many-body physics. Introduction and comparison of different types of physical building blocks available for quantum computing. Addresses practical issues, such as scalability and comparison between different physical platforms and associated devices. Letter grading.

**410. Quantum Optics Laboratory. (4)** Laboratory, eight hours. Limited to Master of Quantum Science and Technology students. Examination and use of modern optics, including lasers, optics, fibers, polarization manipulation, and photon counting. Use of

techniques of quantum optics to demonstrate concepts of quantum mechanics, including superposition, quantum measurement, hidden variable theories, and Bell's inequality. Application of quantum optics to quantum information science. Letter grading.

**411. Ensemble Quantum Computing Laboratory. (4)** Laboratory, four to eight hours. Limited to Master of Quantum Science and Technology students. Introduction to dynamics of ensembles of quantum mechanical spins, theoretical description in language of density matrices, and experimental techniques using nuclear magnetic resonance to prepare, manipulate, and measure their properties. Letter grading.

**412. Solid State Quantum Computing Laboratory. (4)** Laboratory, four to eight hours. Requisites: courses 410, 411. Introduction to materials, devices, and techniques of semiconductor-based qubit technology. Students choose total of 10 weeks of laboratory modules from among following list according to their interests and availability: semiconductor device processing and metrology; transmission electron microscopy (TEM); pulsed control of NV<sup>-</sup> centers in diamond; quantum options and single photon interferometry; quantum key distribution and quantum random number generation; quantum zeno effects. Letter grading.

**597. Master of Quantum Science and Technology Comprehensive Examination Preparation. (4)** Tutorial, to be arranged. Limited to Master of Quantum Science and Technology students. Students conduct an independent research project in the field of quantum science and technology in a supervised setting, either a research group at UCLA (or other affiliated and approved university setting) or through an internship at a company, national laboratory, or similar institution. S/U grading.

## PHYSICS AND BIOLOGY IN MEDICINE

*Interdepartmental Program  
David Geffen School of Medicine*

B2-115 Center for Health Sciences  
Box 951721  
Los Angeles, CA 90095-1721

**Physics and Biology in Medicine**  
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**Michael McNitt-Gray, PhD, Chair**  
**Magnus Dahlbom, PhD, Graduate Adviser**

## Faculty Committee

Stephen C. Cannon, MD, PhD (*Molecular and Medical Pharmacology, Physiology*)  
Magnus Dahlbom, PhD (*Molecular and Medical Pharmacology*)  
Dieter R. Enzmann, MD (*Radiological Sciences*)  
Michael McNitt-Gray, PhD (*Radiological Sciences*)  
Michael L. Steinberg, MD, FACR (*Radiation Oncology*)

## Overview

The Physics and Biology in Medicine Master of Science (MS) and Doctor of Philosophy (PhD) Program is a **CAMPEP**-accredited interdepartmental graduate program supported by the



departments of Molecular and Medical Pharmacology, Radiation Oncology, and Radiological Sciences. It offers training in four specialties: medical imaging, molecular and cellular oncology, molecular imaging, and therapeutic medical physics.

## Facilities

Specialized facilities for training and research are available in the departmental laboratories, as well as in the [Crump Institute for Molecular Imaging](#), [Center for Medical Countermeasures against Radiation](#), and [Center for Computer Vision and Imaging Biomarkers](#), among others. Highly specialized equipment includes state-of-the-art medical imaging modalities such as MRI, CT angiography, and PET/CT in both clinical and preclinical settings, as well as advanced radiotherapy treatment and planning facilities. The program prepares students for careers as independent researchers or professional medical physicists, and graduates pursue academic, industrial, governmental, and clinical careers, regardless of which specialty they pursue.

## Career Prospects

Graduates in physics and biology in medicine can expect to engage in any combination of research, teaching, clinical service, and consultation. Biomedical physicists are usually employed in hospitals frequently associated with a medical school, where they are members of the academic staff. They are also in demand in high-technology private industry engaging in research and development of diagnostic equipment. In government agencies, biomedical physicists are involved in the formulation and enforcement of regulations applied to the use of radiation in health care delivery.

## Graduate Major

### Physics and Biology in Medicine MS, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Physics and Biology in Medicine

#### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-divi-

sion students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Course

**199. Directed Research in Biomedical Physics. (2 to 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Physics and Chemistry of Nuclear Medicine. (4)** Lecture, three hours; discussion, one hour. Nuclear structure, statistics of radioactive decay, nuclear radiations and their interaction with matter, nuclear decay processes, nuclear reactions, and compartment models. Physical and chemical properties of radioactive preparations used in nuclear medicine. Basic principles of nuclear medicine imaging, SPECT, and PET. S/U or letter grading.

**200B. Nuclear Medicine Instrumentation. (4)** Lecture, one hour; laboratory, three hours. Requisite: course 200A. Introduction to nuclear medicine instrumentation, including well ionization chambers, probe and well scintillation detectors, scintillation cameras, and single photon and positron emission computed tomography. S/U or letter grading.

**201. Medical Radiation Accelerator Design. (4)** Lecture, three hours. Requisite: course 216. Overview of physical principles involved in design of current particle accelerators (electron, proton, heavy particle) and analysis of characteristics of current accelerators and facility design. S/U or letter grading.

**202A. Applications of Medical Physics to Clinical Problems: Nuclear Medicine. (4)** Clinic, four hours. Requisite: course 200B. Selected studies in clinical use of radioisotopes. S/U or letter grading.

**202B. Applications of Medical Physics to Clinical Problems: Diagnostic Radiology. (1)** Clinic, one hour. Requisite: course 205. Clinical medical physics in radiological imaging rotation covering variety of diagnostic imaging modalities. Students gain experience in performing acceptance testing and annual surveys, establishing and maintaining modality-specific quality control program, obtaining modality-specific accreditation, radiation shielding design and calculation, patient dose monitoring, and patient dose calculation. S/U grading.

**202C. Applications of Medical Physics to Clinical Problems: Radiation Therapy. (4)** Clinic, four hours. Requisites: courses 203, 204, 208B, 221. Selected studies in clinical use of radioisotopes. S/U grading.

**203. Physics of Radiation Therapy. (4)** Lecture, three hours; discussion, one hour. Requisite: course 216. Radiation quantities and units. Radiation dosimetry, clinical applications in treatment planning. Methods of measuring radiation quantities. Calibration of radiation therapy equipment. Letter grading.

**204. Introductory Radiation Biology. (4)** Lecture, four hours. Effect of ionizing radiation on chemical and biological systems. S/U or letter grading.

**205. Physics of Diagnostic Radiology. (4)** Lecture, three hours; laboratory, one hour. Production of X rays, basic interactions between X rays and matter, X-ray system components, physics principles of medical radiography, radiographic image quality, fluoroscopy, image intensifiers, special procedures, X-ray protection. Laboratory experiments illustrate basic theory. S/U or letter grading.

**206. Advanced Instrumentation. (4)** Lecture, three hours; discussion, one hour. Requisite: course 205. Introduction to recent advances in digital diagnostic imaging systems, with topics centered on instrumentation including digital subtraction angiography (DSA) methods of producing three-dimensional images. S/U or letter grading.

**207. Monte Carlo Methods with Applications for Radiological Sciences. (4)** Lecture, two hours; laboratory, one hour. Requisites: courses 200A, 205, 216. Introduction to Monte Carlo methods, with application to radiation transport of charged and uncharged particles. Specific applications in radiological sciences. Letter grading.

**208A. Medical Physics Laboratory: Medical Imaging. (4)** Discussion, two hours; laboratory, four hours. Requisite: course 205. Hands-on experience performing acceptance testing and quality control checks of imaging equipment such as fluoroscopy, digital subtraction angiography, mammography, ultrasound, magnetic resonance imaging, computed tomography, and computed radiography. S/U or letter grading.

**208B. Medical Physics Laboratory: Radiation Therapy. (4)** Discussion, two hours; laboratory, four hours. Requisite: course 203. Hands-on experience calibrating treatment planning and radiation therapy equipment. S/U or letter grading.

**M209. Signal and Image Processing for Biomedicine. (4)** (Same as Bioengineering M209.) Lecture, three hours. Preparation: basic calculus or linear algebra and undergraduate probability. Mathematics and statistical fundamentals prevalent in biomedical physics studies. Notion and basic descriptions of linear shift-invariance and point spread functions in continuous and discrete time. Sampling theory and Fourier analysis. Signal representation of vector spaces, projection theorem, and least-squares approximations. Discussion of signal subspace methods, correlation and independence, principal component analysis, and independent component analysis. Basic ideas in inverse problems and optimization. Application in medical and signal processing. Development of geometric and informatics intuitions behind mathematics and statistics. Light derivations and MATLAB programming. S/U or letter grading.

**210. Computer Vision in Medical Imaging. (4)** Lecture, three hours; discussion, one hour. Recommended requisites: Mathematics 155, Program in Computing 10A. Study of image segmentation, feature extraction, object recognition, classification, and visualization with biomedical applications. Topics include region-growing, edge detection, mathematical morphology, clustering, neural networks, and volume rendering in lectures, case studies, and programming projects. S/U or letter grading.

**211. Medical Ultrasound. (4)** Lecture, 90 minutes; laboratory, two hours. Preparation: one calculus course. Production of real-time ultrasound images, transducer modeling and design, Doppler and color flow instrumentation, biohazards of ultrasound, ultrasound phantom design, and ultrasound tissue characterization techniques. Laboratory included. S/U or letter grading.

**212. Biochemical Basis of Positron-Emission Tomography (PET). (4)** Lecture, three hours; discussion, one hour. Introduction to biochemical processes and application of radioisotopes to study metabolism non-invasively by positron-emission tomography (PET). Validation of kinetic models to derive quantitative information from PET. Introduction to clinical and experimental application of PET. S/U or letter grading.

**213. Quantitative Autoradiography. (4)** Lecture, three hours; discussion, one hour. Application of quantitative autoradiography for estimating brain and heart functions. Topics include 2-deoxyglucose method for metabolic rate; iodoantipyrine method for blood flow; amino acid method for protein synthesis; quantitative receptor autoradiography; neuroanatomy and neurophysiology of autoradiogram and PET scan interpretation. S/U or letter grading.

**214. Medical Image Processing Systems. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 209, 210. Advanced image processing and image analysis techniques applied to medical images. Discussion of approaches to computer-aided diagnosis and image quantitation, as well as application of pattern classification techniques (neural networks and discriminant analysis). Examination of problems from several imaging modalities (CT, MR, CR, and mammography). S/U or letter grading.

**215. Breast Imaging Physics and Instrumentation.** (4) Lecture, three hours; laboratory, two hours. Requisite: course 205. Special requirements of mammography, design of dedicated mammography X-ray units from generators and tubes through screen/film cassettes. Stereotactic biopsy units, cost/benefit controversy of screening mammography, digital mammography, computer-aided diagnosis, telemammography, breast MRI, and breast ultrasound. S/U or letter grading.

**216. Fundamentals of Dosimetry.** (4) Lecture, three hours; laboratory, one hour. Review of fundamental interactions of radiation and matter and introduction to fundamentals of radiation dosimetry. Overview of dosimetry instrumentation as well as radiation sources. S/U or letter grading.

**217. Statistics and Data Analysis in Biomedical Physics.** (4) Lecture, four hours. Requisites: Mathematics 31A, 31B, 32A, 32B, 33A, 33B. Introduction to computer-based statistical concepts, data analysis, and experimental design within biomedical physics research. Standard statistical packages and various statistical computing algorithms on relevant data sets within radiological sciences. Letter grading.

**218. Radiologic Functional Anatomy.** (4) Lecture, three hours; discussion, one hour. Introduction to human anatomy, cell biology, and physiology as visualized through microscopy, molecular imaging, radiography, CT, MRI, ultrasonography, PET, and SPECT. Letter grading.

**M219. Principles and Applications of Magnetic Resonance Imaging.** (4) (Same as Bioengineering M219.) Lecture, three hours; discussion, one hour. Basic principles of magnetic resonance (MR), physics, and image formation. Emphasis on hardware, Bloch equations, analytic expressions, image contrast mechanisms, spin and gradient echoes, Fourier transform imaging methods, structure of pulse sequences, and various scanning parameters. Introduction to advanced techniques in rapid imaging, quantitative imaging, and spectroscopy. Letter grading.

**220A-220D. Laboratory Rotations in Biomedical Physics.** (2-2) Laboratory, two hours. Laboratory projects to provide students with introduction to field. One oral and one written presentation required. S/U grading. **220A.** Biophysics; **220B.** Medical Imaging; **220C.** Therapeutic Medical Physics; **220D.** Radiation Biology and Experimental Radiation Therapy.

**221. Applied Health Physics.** (4) Lecture, three hours; discussion, one hour. Requisite: course 216. Basics of radiation safety as applied to medical applications. Introduction to all regulatory issues pertaining to medical uses of radioactivity. Letter grading.

**222. Advances in Medical Magnetic Resonance: Clinical MR Spectroscopy and Fast MRI Techniques.** (4) Lecture, three hours; laboratory, one hour. Requisite: course 219. Basic principles of NMR spectroscopy, localized spectroscopic sequences on wholebody environment, single/multishot localization, water/fat suppression, chemical shift imaging sequences, processing with multidimensional Fourier transforms, gradient/spin-echo based echo-planar imaging, diffusion/perfusion imaging techniques. Letter grading.

**223. Seminar: Radiation Biology.** (4) Seminar, four hours. Exploration of physiologic and molecular mechanisms that impact on response of normal and malignant tissues to ionizing radiation, with particular emphasis on critical and high in-depth analysis of approaches through which such responses can be modified in therapeutic setting. Understanding of rationale for integrating biological information into process of treatment planning and delivery. S/U grading.

**225. Contrast Mechanisms and Quantification in Magnetic Resonance Imaging.** (4) Lecture, four hours. Requisite: course M219. Introduction to magnetic resonance contrast mechanisms and quantification techniques in magnetic resonance imaging. Topics include exogenous and endogenous contrast mechanisms, measuring tissue perfusion and permeability, advanced diffusion and q-space analysis, chemical exchange and magnetization transfer imaging, and relaxometry. Letter grading.

**227. Human Disease: Current and Future Role of Biomedical Physics.** (4) Lecture, three hours; discussion, one hour. Present and future roles of biomedical physics in diagnosis and treatment of human disease, with focus on interdisciplinary nature of this field. Exploration of two diseases in depth with detailed description of roles of physics-based diagnostic imaging and therapeutic options for each disease. Description of current and future technologies, as well as techniques that exploit interaction between diagnosis and therapy. Letter grading.

**M229. Advanced Topics in Magnetic Resonance Imaging.** (4) (Same as Bioengineering M229.) Lecture, four hours. Requisite: course M219. Designed for students interested in pursuing research related to development or translation of new magnetic resonance imaging (MRI) technique. Basic tools and understanding of recent MRI developments that have had high impact on field, involve novel pulse sequence design or image reconstructions, and enable imaging of anatomy or function in way that surpasses what is currently possible with any modality. Topics include in-depth sequence simulation, RF pulse design, rapid image acquisition, parallel imaging, compressed sensing, image reconstruction and processing, motion encoding and compensation, chemical-shift imaging and understanding, and understanding/avoiding artifacts. Programming exercises in MATLAB to provide hands-on experience. Letter grading.

**231. Advanced Treatment Planning in Radiation Therapy.** (3) Lecture, four hours. Enforced requisites: courses 203, 216. Designed to provide theoretical and practical understanding of treatment planning techniques utilized in radiation therapy. Topics include clinical treatment planning work flow, general planning principles and strategies, and specific considerations for various treatment delivery modalities and advanced treatment techniques. Detailed discussion on dose calculation algorithms and inversed planning and optimization. Clinical treatment planning demonstration using commercial treatment planning systems used to provide practical understanding of clinical applications and implementation. S/U or letter grading.

**M248. Introduction to Molecular Imaging.** (4) (Same as Bioengineering M248 and Pharmacology M248.) Lecture, three hours; laboratory, one hour; outside study, seven hours. Exploration of role of molecular imaging in modern biology and medicine, including imaging physics, instrumentation, image processing, and applications of imaging for range of modalities. Practical experience provided through series of imaging laboratories. Letter grading.

**260A-260B-260C. Seminars: Biomedical Physics.** (1-1-1) Seminar, one hour. Joint critical study by students and instructors in fields of knowledge pertaining to biomedical physics. Periodic contributions by visiting scientists. Discussion of research in progress. Student presentations required in spring term. May be repeated. S/U (260A, 260B) and letter (260C) grading.

**268. Radiopharmaceutical Chemistry.** (4) Lecture, two hours; discussion, two hours. Introduction to advanced concepts in chemistry of radiopharmaceuticals and technologies for radiopharmaceutical production and analysis. Areas of focus are (1) radiochemistry with fluorine-18 and other isotopes, (2) technologies for synthesis automation and optimization, (3) analytical instrumentation and tools in radiochemistry, and (4) PET tracer design and development. Introduction to multistep process of target identification, tracer design, radiosynthesis development, in vitro and in vivo tracer evaluation, radiochemistry automation for routine production, and preparation of clinical grade doses (as prerequisite for clinical translation of novel molecular imaging tracers). Lectures covering fundamentals complemented with practical sessions that provide hands-on training with technologies and methods used in routine synthesis, synthesis optimization, analysis (and quality control testing), and in vitro and in vivo evaluation of PET probes. S/U or letter grading.

**269. Seminar: Medical Imaging.** (1) Seminar, one hour. Continuous registration required of students in medical imaging specialty. Topics of current interest in

medical imaging, with lecturers from department, other universities, and private industry. S/U or letter grading.

**M285. Functional Neuroimaging: Techniques and Applications.** (3) (Same as Bioengineering M284, Neuroscience M285, Psychiatry M285, and Psychology M278.) Lecture, three hours. In-depth examination of activation imaging, including MRI and electrophysiological methods, data acquisition and analysis, experimental design, and results obtained thus far in human systems. Strong focus on understanding technologies, how to design activation imaging paradigms, and how to interpret results. Laboratory visits and design and implementation of functional MRI experiment. S/U or letter grading.

**286. Image Registration Techniques.** (4) Lecture, four hours. Preparation: strong mathematical background. Examination of state-of-art image registration methods that exist today. Mathematical descriptions of each different class of registration methods and two-dimensional/three-dimensional/four-dimensional implementation details. Programming of registration methods in MATLAB/C/C++/CUDA/JAVA interfaces so students learn all registration methods currently investigated. Letter grading.

**M424. Functional Magnetic Resonance Imaging Journal Club.** (2) (Same as Psychiatry M424.) Discussion, 90 minutes. Limited to 10 students. Current topics in functional neuroimaging, with emphasis on novel applications, analysis, and acquisition methods. Presentation and critique of student papers. Overall emphasis on magnetic resonance imaging. Example areas include tractography through diffusion tensor imaging, jittered event-related experimental designs, parallel receiver MR imaging, integrated electrophysiological and image acquisition. S/U grading.

**495. Special Studies in Biomedical Physics.** (4) Seminar, two hours; laboratory, four hours. Teaching assistance in graduate laboratory courses under supervision of faculty member. S/U grading.

**596. Research in Biomedical Physics.** (4 to 12) Tutorial, to be arranged. Directed individual study or research. Only one 596 course may be applied toward MS degree requirements. May be repeated for credit. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations.** (4) Tutorial, to be arranged. May not be applied toward MS degree requirements. May not be repeated. S/U grading.

**598. Research for and Preparation of MS Thesis.** (4 to 12) Tutorial, to be arranged. Two 598 courses (or 598 and 596 combined) may be applied toward MS degree requirements. May be repeated. S/U grading.

**599. Research for PhD Dissertation.** (4 to 12) Tutorial, to be arranged. Preparation: successful completion of screening examinations. Research for and preparation of PhD dissertation. May be repeated. S/U grading.

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## PHYSIOLOGY

David Geffen School of Medicine

53-231 Center for Health Sciences  
Box 951751  
Los Angeles, CA 90095-1751

Physiology

310-825-5882

E-mail contact

Stephen C. Cannon, MD, PhD, *Chair*  
Yousang Gwack, PhD, *Executive Vice Chair*

## Overview

Physiology is the science of the functional activities of living systems. This covers a wide

range, including observations on humans and experiments on animals and model systems in order to understand principles. Physiology is the science most directly relevant to human medicine in all its specialties and to understanding all environmental factors affecting human life. It is also a pure science of great challenge because of the complexity of its problems and its extensive interaction with mathematical, physical, biochemical, and engineering sciences, as well as with other branches of biology.

Within the prescribed curriculum, students may specialize in cellular and molecular physiology, theoretical and mathematical physiology, and organ systems and integrative phenomena, including neuroscience and behavioral physiology.

The Department of Physiology offers post-doctoral training in research and welcomes students interested in articulated MD/PhD programs.

Applicants interested in pursuing graduate study may apply directly to the interdepartmental **Molecular, Cellular, and Integrative Physiology Doctor of Philosophy (PhD)** program.

**Physiology faculty** information is available from the department.

## Physiology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**199. Directed Research in Physiology. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M210. Molecular and Cellular Mechanisms of Neural Integration. (5)** (Same as Neuroscience M230 and Physiological Science M210.) Lecture, four hours; discussion, one hour. Requisite: Neuroscience M202. Introduction to mechanisms of synaptic processing. Selected problems of current interest, including regulation and modulation of transmitter release, molecular biology and physiology of receptors, cellular basis of integration in sensory perception and learning, neural nets and oscillators, and molecular events in development and sexual differentiation. Letter grading.

**220. Methods in Cell Physiology. (6)** Linear circuit analysis, including admittance, transfer admittance, transfer function, and filters using transform methods. Application of these concepts to electronic analog circuits in lectures and laboratory, with emphasis on operational amplifiers. Applications to electrophysiology include microelectrode amplifiers, voltage clamp and patch clamp techniques, with circuit analysis and noise considerations. Digital electronics cover logic gates, sequential circuits, and A/D and D/A conversion, with introduction to sampling theory.

**221. Cell Physiology: Excitability. (6)** Requisite: course 220. In-depth coverage of general properties of excitable cells, linear cable properties, nonlinear conductance changes, and generation and propagation of the nerve impulse. Voltage gating and gating currents, as well as relationship between macroscopic conductance and single channel properties discussed in analytical detail using original publications.

**298. Current Topics in Physiology. (2 to 4)** Lecture, one hour; discussion, one hour. Designed for graduate students. Students read primary literature in a specified area and conduct or participate in discussions on these papers. May be repeated for credit. S/U or letter grading.

**596. Directed Individual Study or Research. (2 to 12)** Tutorial, to be arranged. S/U grading.

**597. Preparation for MS Comprehensive Examination or PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. S/U grading.

**598. Thesis Research for MS Candidates. (2 to 12)** Tutorial, to be arranged. S/U grading.

**599. Dissertation Research for PhD Candidates. (2 to 12)** Tutorial, to be arranged. S/U grading.

## POLITICAL SCIENCE

*College of Letters and Science*

4289 Bunche Hall  
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Los Angeles, CA 90095-1472

### Political Science

310-825-4331

**Davide Panagia, PhD, Chair**

**Araceli (Cesi) Cruz, PhD, Vice Chair,  
Graduate Studies**

**Michael L. Ross, PhD, Vice Chair,  
Undergraduate Studies**

## Faculty Roster

### Professors

Matthew A. Barreto, PhD

Kathleen Bawn, PhD

Michael S.Y. Chwe, PhD

Joshua F. Dienstag, PhD (*Shapiro Family  
Endowed Professor of Modern Political  
Theory*)

Lorrie A. Frasure, PhD (*Ralph Bunche  
Professor of International Studies*)

Leslie N. Johns, PhD

Jeffrey B. Lewis, PhD

Michael F. Lofchie, PhD

Susanne Lohmann, PhD

Kirstie M. McClure, PhD

Barry O'Neill, PhD

Karen J. Orren, PhD

Anthony R. Pagden, PhD

Davide Panagia, PhD

Efrén O. Pérez, PhD

Mark A. Peterson, PhD

Daniel N. Posner, PhD (*James S. Coleman  
Professor of International Development  
Studies*)

Michael L. Ross, PhD

Gary M. Segura, PhD

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Richard H. Steinberg, JD, PhD (*Jonathan D.  
Varat Endowed Professor of Law*)

Robert F. Trager, PhD

Daniel S. Treisman, PhD

Lynn Vavreck, PhD (*Marvin Hoffenberg  
Professor of American Politics and Public  
Policy*)

David O. Wilkinson, PhD

### Professors Emeriti

Joel D. Aberbach, PhD

Richard D. Anderson, Jr., PhD

James D. DeNardo, PhD

Barbara Geddes, PhD

Robert S. Gerstein, PhD

Miriam A. Golden, PhD

Edmond J. Keller, PhD

Deborah W. Larson, PhD

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David C. Rapoport, PhD

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Richard L. Sklar, PhD

Steven L. Spiegel, PhD

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Marc Trachtenberg, PhD

Charles E. Young, PhD

John R. Zaller, PhD

### Associate Professors

Graeme D. Blair, PhD

Darin E. Christensen, PhD

Araceli (Cesi) Cruz, PhD

Chad J. Hazlett, PhD

Scott C. James, PhD

Natalie R. Masuoka, PhD

Margaret E. Peters, PhD

Christopher N. Tausanovitch, PhD

Michael F. Thies, PhD

### Assistant Professors

Lachlan A. McNamee, PhD

Eric A. Min, PhD

Tejas Parasher, PhD

Daniel M. Thompson, MPP, PhD

### Adjunct Assistant Professor

James A. Desveaux, PhD

## Overview

Political science investigates the nature, causes, and consequences of politics. The Department of Political Science has gained dis-



tion in political economy, electoral behavior, comparative politics, and political theory. The department is strongly committed to teaching as well as research, with the primary goal of providing the best possible education for students seeking to develop an expertise in the field of political science by instilling skills in research and analytic reasoning.

## Undergraduate Major

### Political Science BA

The undergraduate major in the Department of Political Science aims to provide students with understanding of basic political processes and institutions as these operate in different national and cultural contexts. It also covers the interaction between nation states, the changing character of the relations between citizens and governments, and the values and criteria by which the quality of political life is judged. The program may be individually focused to serve the needs of the liberal arts major, the student seeking preparation for graduate work in political science, public administration, law, and other professional fields, and the student preparing for specialized roles in political and public organizations.

### Learning Outcomes

The Political Science major has the following learning outcomes:

- Critical thinking about basic political processes, institutions, and concepts as they operate in different national and cultural contexts
- Impartial evaluation of arguments
- Application of mathematical and logical reasoning to political processes
- Use and evaluation of statistical and other types of evidence in arguments
- Recognition of limits of quantitative and non-quantitative analysis
- Knowledge of diverse theories of politics by engaging critically with texts, media, and contexts
- Employment of cultural, hermeneutical, normative, and historical approaches
- Location, evaluation, and use of information and scholarship needed to place particular political events in broader historical, cross-national, and theoretical contexts
- Demonstrated familiarity with various approaches to the study of politics, and their application to specific questions, puzzles, and debates
- Written and oral arguments using appropriate evidence, with sensitivity to opposing perspectives, about significant political processes, events, and concepts

### Entry to the Major

#### Pre-major

All students intending to major in Political Science must enroll as Political Science pre-majors. After completion of preparation for the major courses, they need to petition to enter

the major in the Undergraduate Office, 4269 Bunche Hall.

#### Transfer Students

Transfer applicants to the Political Science major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one statistics course and four courses from political theory, world politics, game theory, American politics, or comparative politics.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Policies

Students must complete all pre-major courses with a 2.0 grade-point average by the time they attain 135 units. Admission to the major is granted only after successful completion of all lower-division requirements.

### Requirements

#### Preparation for the Major

*Required:* Four lower-division courses from Political Science 10, 20, 30, 40, 50. Students must also take Political Science 6 or 6R. Statistics 10 or 12 may be substituted for course 6 or 6R.

#### The Major

*Required:* Ten upper-division courses (40 units) selected from Political Science M105 through 199.

Upper-division political science courses are organized into six fields: Field I: Political Theory (numbered 111–119), Field II: International Relations (120–139), Field III: American Politics (140–149), Field IV: Comparative Politics (150–169), Field V: Methods and Models (170–179), and Field VI: Race and Ethnic Politics (180–187).

In fulfilling the requirement of 10 upper-division political science courses, students must satisfy the following:

1. A concentration in one field consisting of at least three upper-division courses in that field
2. A distribution requirement of at least one upper-division course in each of three different fields outside the field of concentration; multifield courses from the concentration field may not satisfy a distribution field
3. Four additional political science courses

#### Honors Program

To qualify for departmental honors at graduation, students must complete a senior thesis. Highest honors are awarded at the discretion of the honors program director and are based on both cumulative grade-point average in the major and the quality of the honors thesis to students who graduate with a final GPA in the major of at least 3.85, and who complete the senior honors thesis with a letter grade of A+.

#### Policies

##### The Major

Each course must be taken for a letter grade. Students are required to maintain a 2.0 overall grade-point average in all upper-division political science courses.

Courses 191H, 195CE, 198, and 199 may not be applied toward either the concentration or distribution requirement.

#### Honors Program

The department honors program is open to seniors and to students who (1) have completed five upper-division political science courses (two of which are in one field), (2) have a 3.5 grade-point average in upper-division political science courses, and (3) are eligible for College of Letters and Science honors. Students should have substantial experience in writing research papers before they enter the honors program or course 191H.

Successful completion of the honors program is indicated on the transcript and diploma.

## Graduate Major

### Political Science MA, CPhil, PhD

The graduate program leads to the PhD degree in Political Science (a master's degree may be earned in the process of completing PhD requirements). It is designed to give students a strong foundation in the discipline while enabling them to acquire additional skills for advancing their professional careers.

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Political Science

### Lower-Division Courses

**6. Introduction to Data Analysis. (5)** Lecture, three or four hours; discussion, one hour (when scheduled). Not open for credit to students with credit for course 6R. Introduction to collection and analysis of political data, with emphasis on application of statistical reasoning to study of relationships among political variables. Use of computer as aid in analyzing data from various fields of political science, among them comparative politics, international relations, American politics, and public administration. P/NP or letter grading.

**6R. Introduction to Data Analysis—Research Version. (5)** Lecture, three or four hours; discussion, one hour (when scheduled). Enforced corequisite: course 50R. Not open for credit to students with credit for course 6. Introduction to collection and analysis of political data, with emphasis on application of statistical reasoning to study of relationships among political variables. Use of computer as aid in analyzing data from comparative politics. P/NP or letter grading.

**10. Introduction to Political Theory. (5)** Lecture, three hours; discussion, one hour. Exposition and analysis of selected political theorists and concepts from Plato to the present. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.



**20. World Politics. (5)** Lecture, three hours; discussion, one hour. Required of all students concentrating in Field II. Introduction to problems of world politics. P/NP or letter grading.

**30. Politics and Strategy. (5)** Lecture, three or four hours; discussion, one hour (when scheduled). Introduction to study of strategic interaction in political applications. Use of game theory and other formal modeling strategies to understand politics. P/NP or letter grading.

**40. Introduction to American Politics. (5)** Lecture, three hours; discussion, one hour. Basic institutions and processes of democratic politics. Treatment of themes such as constitutionalism, representation, participation, and leadership coupled with particular emphasis on the American case. P/NP or letter grading.

**50. Introduction to Comparative Politics. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 50R. Comparative study of constitutional principles, governmental institutions, and political processes in selected countries. P/NP or letter grading.

**50R. Introduction to Comparative Politics—Research Version. (5)** Lecture, three or four hours; discussion, one hour (when scheduled). Enforced corequisite: course 6R. Not open for credit to students with credit for course 50. Comparative study of constitutional principles, governmental institutions, and political processes in selected countries, with emphasis on presentation and evaluation of quantitative evidence. P/NP or letter grading.

**60. Ethics and Governance. (5)** Lecture, three or four hours; discussion, one hour (when scheduled). To study question of can't we all just get along, students play games of cooperation, coordination, collaboration, and competition and examine whether and how diversity, disagreement, and democracy influence game play, to understand under what conditions diversity feeds productively or counterproductively into group effort. Development of self- and other-awareness of emergent properties of disagreement to appreciate how different kinds of social organization promote or undercut social cognition and collective action. Such understanding needs to develop bottom-up through experiential and interactive learning, active and analytical learning, systems thinking, and real-world application. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**M105. Economic Models of Public Choice. (4)** (Same as Economics M135.) Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: any lower-division political science course. Enforced prerequisite: Economics 11. Designed for juniors/seniors. Analysis of methods and consequences of arriving at collective decisions through political mechanisms. Topics include free-rider problem, voting and majority choice, demand revelation, and political bargaining. P/NP or letter grading.

## Field I: Political Theory

**M111A. Ancient and Medieval Political Theory. (4)** (Same as Classics M121.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exposition and critical analysis of major thinkers such as Plato, Aristotle, Thucydides, St. Augustine, Aquinas, Machiavelli, and More and questions such as forms of government, citizenship, justice, happiness, rhetoric, religion, emotion. P/NP or letter grading.

**111B. Early Modern Political Theory. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exposition and critical analysis of major thinkers such as Machiavelli, More, Montaigne, Hobbes, Locke, Rousseau, Smith, Condorcet, and Kant and questions such as representation, property, autonomy, and political economy. P/NP or letter grading.

**111C. Late Modern Political Theory. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exposition and critical analysis of major thinkers such as Bentham, De Tocqueville, Hegel, Mill, Marx, Nietzsche, Arndt, and Foucault and questions such as alienation, power, participation, and difference. P/NP or letter grading.

**112A. Democratic Theory. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Critical analysis of selected major authors, issues, and arguments in contemporary democratic theory.

**M112B. Invention of Democracy. (5)** (Same as Classics M125.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Democracy was invented in ancient Greece as political form grounded on equality before law, citizenship, and freedom. It came into existence as struggle by *demoi*, people, aware of its excellence and proud of its power, *kratos*. It became only regime capable of including all members of community while disregarding wealth, status, and diverging interests. Examination of history and theory of ancient democracy. P/NP or letter grading.

**113A. Problems in 20th-Century and Contemporary Political Theory. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study and interpretation of theorists who have focused their analyses on social and political problems of 20th century. P/NP or letter grading.

**113B. Politics, Theory, and Film. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Recommended prerequisite: course 10. Designed for juniors/seniors. Intense and individualized examination of politically significant films with respect to central issues in political theory such as power and truth in light of relevant political theorists. P/NP or letter grading.

**114A. American Political Thought I, 1620 to 1865. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exposition and critical analysis of American political thinkers from Puritan period to Civil War. P/NP or letter grading.

**114B. American Political Thought II, 1865 to Present. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Course 114A is not requisite to 114B. Designed for juniors/seniors. Exposition and critical analysis of American political thinkers from Reconstruction to present. P/NP or letter grading.

**M115C. Citizenship and Public Service. (4)** (Same as Community Engagement and Social Change M115.) Lecture, three or four hours; discussion, one hour (when scheduled). Recommended prerequisite: course 10. Designed for juniors/seniors. Study of ways in which political thinkers have conceived of ideas of citizenship and public service, how these ideas have changed over time, and frameworks for thinking about citizenship in era of markets and globalization. P/NP or letter grading.

**115D. Diversity, Disagreement, and Democracy: Can't We All Just Get Along? (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Can't we all just get along? Study of diversity, disagreement, and democracy. Diversity covers individual differences, cultural

differences, and human universals; groupism, factionalism, and identity politics; multiculturalism and one-world ethics. Disagreement includes moral, ideological, and party-political disagreement; resolvable and irresolvable kinds of disagreement; groupthink and group polarization; herding and information cascades. Democracy stands for political mechanisms of information aggregation; political mechanisms to resolve differences, or to keep peace among people with irresolvable differences; emergence and spread of democracy, liberty, and rule of law. Letter grading.

**115E. Humanist Practice and Civic Culture. (4)** Seminar, three hours. Enforced requisites: courses 10, M115C. Designed for juniors/seniors. Exploration of connection between humanist practices (philosophy, sociability, science, republican self-fashioning) and promotion of civic ethos—culture that would promote flourishing civil society. How has humanism informed our Western understanding of republicanism and civic responsibility? What aspects of our humanist heritage maintain relevance for world that many describe as posthumanist? What form of civic culture is most appropriate for North American citizens in 21st century? P/NP or letter grading.

**116A. Marxism. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Critical analysis of origins, nature, and development of Marxist political theory. P/NP or letter grading.

**116B. Continental Political Thought. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study of important text in continental political theory, including relationship between politics and reason, skepticism, and political freedom. P/NP or letter grading.

**117. Jurisprudence. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Development of law and legal systems; consideration of fundamental legal concepts; contributions and influence of modern schools of legal philosophy in relation to law and government. Letter grading.

**118. Laws of War and Peace from Conquest of America to Declaration of Human Rights (1948). (4)** Lecture, three hours; discussion, one hour (when scheduled). Enforced prerequisite: course 10. Designed for juniors/seniors. Examination of theories of international relations and international law, with special emphasis on warfare, from conquest of America to end of World War II. P/NP or letter grading.

**119. Special Studies in Political Theory. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: one course in Field I. Requisite: course 10. Designed for juniors/seniors. Intensive examination of one or more special problems appropriate to political theory. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change. P/NP or letter grading.

**M119A. Modern Receptions of Ancient Political Thought. (4)** (Same as Classics M124.) Lecture, three hours. Designed for juniors/seniors. Study of how Western culture has conceived and reinterpreted political thought of ancient Greeks and Romans. Topics include examination of influential case(s) of modern reception of classical antiquity. P/NP or letter grading.

## Field II: International Relations

**120A. Foreign Relations of U.S. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of factors and forces entering into formation and implementation of American foreign policy, with special emphasis on contemporary problems. P/NP or letter grading.

**120B. World Politics and U.S. Foreign Policy after September 11. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Video lectures by leading scholars as well as live lectures and discussion on complex problems such as terrorism, nuclear proliferation, and Arab-Israeli conflict. P/NP or letter grading.

**121A. Studies in Formulation of American Foreign Policy.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Study of formation of American foreign policy with respect to individual cases. Consult Schedule of Classes for topics to be offered in specific term. P/NP or letter grading.

**122A. World Order.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 20. Designed for juniors/seniors. Study of problems of international system seen as community capable of cooperation and development. P/NP or letter grading.

**M122B. Global Environment and World Politics.** (4) (Same as Environment M161.) Lecture, three or four hours; discussion, one hour (when scheduled). Recommended requisite: course 20. Politics and policy of major global environmental issues such as climate change, integrating law, policy, and political science perspectives. P/NP or letter grading.

**122C. Global Catastrophic Risk: Clash of Science, Politics, and Ethics** (5) Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Global catastrophic risks pose challenge to modern civilization because of their superhuman extension in space, time, and knowledge realm. Their reach is global; their impact is long-term; and their comprehension is complex. Human interests and outlooks are local, regional, and national as well as egoistical, particularistic, and tribal. Overlapping generations spell intergenerational conflicts among living—young, middle-aged, and old—and between ancestors and descendants. Deeply and variably specialized experts struggle to communicate across scientific disciplines, across natural and human sciences, and across pure and applied sciences—only to hit brick wall in their communications with lay public, which is variously represented by elected politicians, appointed bureaucrats, organized interest groups, and fluid social movements. Study of ensuing clash of science. P/NP or letter grading.

**123A. International Law.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 20. Designed for juniors/seniors. Study of nature and place of international law in conduct of international relations. P/NP or letter grading.

**123B. International Organizations.** (4) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Overview of both theory and functioning of international organizations in promoting international cooperation. Required readings include both statistical and formal models. P/NP or letter grading.

**124A. International Political Economy.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 20. Designed for juniors/seniors. Study of political aspects of international economic issues. P/NP or letter grading.

**124C. Politics of Latin American Economic Development.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Interaction of international and domestic factors in political and economic evolution of Latin America. P/NP or letter grading.

**125A. Arms Control and International Security.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Arms control in context of international security in nuclear age. Nuclear arms race; relationship between deterrence doctrines and nuclear war; roles of technology and ideology; nuclear proliferation; outer space. P/NP or letter grading.

**126. Peace and War.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 20. Designed for juniors/seniors. Theory and research on causes of war and conditions of peace.

**127A. Atlantic Area in World Politics: Western Europe.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. External relations of United Kingdom, West Germany, France, Italy, and other European members of NATO, in regard to European security in context of Atlantic Alliance. P/NP or letter grading.

**128A. U.S./Soviet Relations.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 20. Designed for juniors/seniors. Survey of relations between the U.S. and former Soviet Union from Revolutions of 1917 to collapse of the USSR in 1991.

**128B. International Relations of Post-Communist Russia.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisites: courses 20, 128A. Designed for juniors/seniors. Survey of foreign policy of post-Communist Russia, with special emphasis on Russia's relations with NATO, the former communist states of East Central Europe, China, and the Commonwealth of Independent States.

**129. Diplomacy and War.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 20 or 137A. Designed for juniors/seniors. Analysis of role of diplomacy in great power politics, history of diplomatic institutions, advantages of public and private diplomacy, bilateral and multilateral settings, and theory and practice of deterrence and coercion. Use of game theoretic reasoning and historical analysis. Prior exposure to both useful but not required. P/NP or letter grading.

**132A-M132B. International Relations of Middle East.** (4-4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. P/NP or letter grading. **132A.** Requisite: course 20. Contemporary regional issues and conflicts, with particular attention to inter-Arab politics, Arab-Israeli problem, and Persian Gulf area. **M132B.** (Same as Honors Collegium M157.) Role of great powers in Middle East, with emphasis on American, Soviet, and West European policies since 1945.

**134. Foreign Policy Decision Making and Tools of Statecraft.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 120A. Designed for juniors/seniors. Contrasts purposive and process models of individual and group decision making. Impact of strategic interaction and situational factors on foreign policy decision making. Implications for policy choice of tools of statecraft (i.e., threats/promises, military/economic/diplomacy). P/NP or letter grading.

**135. International Relations of China.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 20. Designed for juniors/seniors. Relations of China with its neighbors and other powers, with emphasis on contemporary interests and policies of China vis-à-vis U.S. P/NP or letter grading.

**137A. International Relations Theory.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of various theoretical approaches to international relations. P/NP or letter grading.

**138A. International Politics, 1815 to 1914.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Classic period of European great power politics, beginning with peace settlement at end of Napoleonic wars and ending with coming of World War I. P/NP or letter grading.

**138B. International Politics, 1914 to the Present.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. First World War, failure of peace settlement, origins of Second World War, Cold War, and post-Cold War period. P/NP or letter grading.

**139. Special Studies in International Relations.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisites: two courses in Field II, or course 20 and one course in Field II. Designed for juniors/seniors. Intensive examination of one or more special problems appropriate to international relations. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change. P/NP or letter grading.

### Field III: American Politics

**140A-140B-140C. National Institutions.** (4-4-4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. **140A.** Congress. Study of those factors

which affect character of the legislative process and capacity of representative institutions to govern in contemporary society. **140B.** The Presidency. Study of nature and problems of presidential leadership, emphasizing impact of the bureaucracy, congress, public opinion, interest groups, and party system on the presidency and national policy-making. **140C.** Supreme Court. Introduction to American constitutional development and role of Supreme Court as interpreter of the U.S. Constitution. Reading of Supreme Court cases as well as various historical and current commentaries.

**M141A. Electoral Politics: Political Psychology.** (4) (Same as Psychology M138.) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Examination of political behavior, political socialization, personality and politics, racial conflict, and psychological analysis of public opinion on these issues. P/NP or letter grading.

**141B. Electoral Politics: Public Opinion and Voting Behavior.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Study of character and formation of political attitudes and public opinion. Role of public opinion in elections, relationship of political attitudes to vote decision, and influence of public opinion on public policy formulation. P/NP or letter grading.

**141C. Electoral Politics: Political Behavior Analysis.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisites: courses 6, 40, 141B. Designed for juniors/seniors. Advanced course in use of quantitative methods in study of political behavior, especially in relation to voting patterns, political participation, and techniques of political action. Students conduct computer-aided analyses of issues and problems treated in course 141B and similar courses. P/NP or letter grading.

**141E. Electoral Politics: Elections, Media, and Strategy.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 30. Designed for juniors/seniors. Analysis of elections and media, including game-theoretic analysis, Downs spatial model of elections, valence characteristics in elections, campaign finance, endogeneity problems in social sciences, liberal bias in media, industrial organization of news industry, and effects of media on voter decisions. May be applied toward Field III or V. P/NP or letter grading.

**142A. Political Parties and Interest Groups.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Organization and activities of political parties in the U.S. Attention to historical development of the parties, nature of party change, campaign functions and electoral role of the parties, membership problems and party activists, political finance, and policy formulation practices. P/NP or letter grading.

**M142D. Understanding Public Issue Life Cycle.** (4) (Same as Public Policy M127.) Lecture, three or four hours; discussion, one hour (when scheduled). Recommended preparation: courses 10, 40, and one course from Economics 1, 2, 5, 11, or 101. Examination of how public issue life cycle is shaped by (1) economic and political incentives of various actors—business, news media, mass public, organized interests, Congress, the president, regulatory agencies, and courts and (2) ideology, cognitive biases, and ethical reasoning. P/NP or letter grading.

**143A. Subnational Government: American State Government.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Examination of governments of states of federal union as major sources of public policy in U.S., with government of California as principal topic. P/NP or letter grading.

**143B. Metropolitan Governance.** (4) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of how political, social, economic, and cultural factors influence metropolitan governance in both U.S. central cities and suburban areas. Study of some major issues in metropolitan governance through classic and contemporary readings on political power, political economy

of cities, and racial/ economic segregation, as well as political incorporation and racial/ethnic coalitions. P/NP or letter grading.

**143C. Politics of American Suburbanization. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of political, social, and economic evolution of American suburbs, particularly in post-WWII era. Dominant themes focus primarily on historical patterns and implications of U.S. racial/ethnic inclusion and exclusion; class conflict and gender roles; classic and contemporary theories of metropolitan governance; and civic/political implications of American suburbanization. Select topics and case studies include housing, schools, and taxes; immigrant and ethnic minority suburbanization; suburban sprawl and uneven growth; suburban decline; and regionalism. P/NP or letter grading.

**145A. Public Law and Judicial Process: Anglo-American Legal System. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Evolution of English common law courts and their legal system, with emphasis on development of basic concepts of law which were received from that system in U.S. and remain relevant today. P/NP or letter grading.

**145B. Public Law and Judicial Process: Constitutional Law—Separation of Powers. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Constitutional questions concerning separation of powers, federalism, and relationship between government and property. P/NP or letter grading.

**145C. Public Law and Judicial Process: Constitutional Law—Civil Liberties. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Protection of civil and political rights and liberties under constitution. P/NP or letter grading.

**145D: Public Law and Judicial Process: Judicial Oversight of Bureaucracy. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Legal controls of administration action. Substantive and procedural limits on administrative discretion imposed by legislation, executive and judicial agencies, and sources of legal powers of administrative bodies within these limits. P/NP or letter grading.

**145A. Public Law and Judicial Process: Law—Rights of Accused. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Constitutional rights of persons suspected, accused, and convicted of crimes, with attention to how protections have changed through history. P/NP or letter grading.

**146B. Organization Theory, Public Policy, and Administration: Bureaucracy and Public Management. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: familiarity with American government. Requisite: course 40. Designed for juniors/seniors. Nature of bureaucracy in modern government, with emphasis on U.S.; explanation of why government agencies behave as they do. Focus on real and imagined problems with bureaucratic rule; evaluation of commonly proposed solutions for these problems. Examples from schools, armies, welfare bureaus, regulatory agencies, and intelligence services, among others. P/NP or letter grading.

**146D. Organization Theory, Public Policy, and Administration: Theories of Organization and Decision Making. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Examination of theoretical frameworks for studying public and private bureaucracies, with emphasis on ideologies, values, behavioral patterns, and concepts of organization. P/NP or letter grading.

**146E. Organization Theory, Public Policy, and Administration: National Policy Development and Implementation. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Investigation of complex process of policy development and implementation in U.S., including roles of federal, state, and local

agencies as well as private organizations. Subsections offered on particular policy areas, with topics announced in preceding term. P/NP or letter grading.

**147A. American Political Development: Overview. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Introduction to historical development of American politics and ideas and institutions that drive durable change over time. Examination of theories, concepts, and analytical tools at center of developmental inquiry. P/NP or letter grading.

**147B. American Political Development: Period Inquiry. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Examination of one period in American political history. Critical features fostering stability and change. Discussion of contributions to structure and content of contemporary American politics. Possible periods, Founding, Reconstruction, Progressive Era, New Deal, and Cold War. Consult Schedule of Classes for topics to be offered in specific term. P/NP or letter grading.

**147C. American Political Development: Institutional Development. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 40. Designed for juniors/seniors. Examination of one American political institution and its development over time, or interaction of American politics and some aspect of culture and society. Assessment of broader political environment of politics, isolating points of contact, conflict, and pressure for change. Possible topics include party development, Constitution, business regulation, and politics and religion. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change. P/NP or letter grading.

**149. Special Topics in American Government and Politics. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisites: course 40, two courses in Field III. Designed for juniors/seniors. Intensive examination of one or more special problems appropriate to American politics. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change. P/NP or letter grading.

## Field IV: Comparative Politics

**150. Political Violence. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of one or several different uses of violence in revolutionary process: demonstrations, mass uprisings, coup d'état, assassination, and terrorism. P/NP or letter grading.

**151A. African Politics: Government and Politics of Africa. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Comparative study of government and politics in contemporary Africa, with special attention to state/society relations, interaction of politics and economic development, political institutions, and conflict and conflict resolution. Letter grading.

**151B. African Politics: Political Economy of Africa. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of interactions of economic and political factors in African development, with special attention to political basis of inappropriate economic policy during early post-independence period and change toward a more appropriate economic strategy in recent times. Letter grading.

**151C. African Politics: Special Topics in African Politics. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Consult Schedule of Classes for topics to be offered in a specific term. Letter grading.

**M152. Political Economy of Climate Change. (4)** (Same as International Development Studies M150.) Lecture, three hours; discussion, one hour (when scheduled). Exploration of how governments at international, national, and regional levels are addressing—or not addressing—extraordinary challenge of climate change. Use of combination of readings, lectures, and discussions to better understand causes, consequences, and policies to address most important po-

litical problem of our time—not just in U.S., but in other major countries as well. Concentration on challenge of mitigating, rather than adapting to, climate change; and concentration on energy use, rather than agriculture, forestry, and land use. Letter grading.

**153A. Comparative Government and Politics of Western Europe: West European Government and Politics. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 50. Designed for juniors/seniors. Comparison of constitutional and political structure of West European states, with particular attention to contemporary problems. P/NP or letter grading.

**154A-154B. Government and Politics in Latin America. (4-4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Comparative study of governmental and political development, organization, and practices. P/NP or letter grading. **154A.** States of Middle America. Enforced requisite: course 50 or 50R; **154B.** States of South America.

**156A. Government and Politics of Post-Communist States: Russia. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Intensive study of institutions and political development in Russia, with special attention to legacy of Soviet Union. P/NP or letter grading.

**157. Government and Politics in the Middle East. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Comparative study of government in the Arab States, Turkey, Israel, and Iran. P/NP or letter grading.

**158. Southeast Asian Politics. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 50. Designed for juniors/seniors. Survey of political environment in major Southeast Asian states. Use of comparative analysis to address major problems confronting region, including democratization, economic growth, drug trade, deforestation, and security threats. Letter grading.

**159A. Government and Politics of China: Chinese Revolution and Age of Mao Zedong. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of modern Chinese politics from decline of Manchu dynasty and rise of revolutionary nationalism to death of Mao Zedong, with emphasis on socioeconomic foundations and political dynamics of revolution in modern China.

**159B. Government and Politics of China: China in Age of Reform. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of China's political and ideological transformation in post-Mao era. Assessment of impact of changing socioeconomic conditions on revolutionary policies and programs of Chinese Communist Party. Exploration of etiology of 1989 Tiananmen crisis and consequences for China of collapse of Communism in East Europe and the Soviet Union.

**160. Government and Politics of Japan. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 50. Designed for juniors/seniors. Structure and operation of contemporary Japanese political system, with special attention to domestic political forces and problems.

**163A. Discourse before Democracy. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Regularities in language used to talk or write about politics across states preceding emergence of universal adult franchises. Problems of collective action in oppression, contribution of shared identities to organizing collective action, role of discourse in cueing awareness of shared identity, evidence across time and space of association between discursive distancing and undemocratic rule (monarchy, exclusive republics, dictatorship). Letter grading.

**163B. Colonialism, Discourse, and Democracy. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Transformation of language used to talk or write about politics during era of European colonialism and resulting shifts in identity ensuing in political change. Theories of democracy, dynamics of colonial encounter between Europeans and peoples

living outside Europe, problems of collective action in tyranny and democracy, consequences of sharing identity for collective action, transformation of discourse in response to colonialism and ensuing enfranchisement in Europe, North America, and Southwest Pacific, spread of enfranchisement following discursive transformations in Russia and in selected states emerging in formerly colonized territories. Letter grading.

**164A. Roots of Democracy. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of development of democracy around world from its beginnings in ancient Greece to present day. Techniques of comparative politics used to evaluate major arguments about why different countries become democratic at different times, and why some remain authoritarian. P/NP or letter grading.

**164B. Fascism and Right-Wing Extremism: Historical and Present Day. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Historical rise of Fascism in Germany, Italy, Japan, and Eastern Europe; its social support and ideology. Focus on Germany, including Nazi economic policy (Tooze, *Wages of Destruction*). Do today's xenophobic movements in Europe and U.S. resemble earlier Fascism in ideology and social base? P/NP or letter grading.

**165. Islam and Politics. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Religious and spiritual foundations of Islamic legal and political institutions; legitimacy of historical and contemporary Islamic regimes, movements, and ideologies; political strategies of Islamic activism. P/NP or letter grading.

**166. Comparative Constitutional Design. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Comparison of major institutional structures such as presidentialism versus parliamentarism, unicameralism versus bicameralism, two-party versus multiparty systems, federal versus unitary systems, plurality versus proportional electoral systems, etc. Method of analysis is rational choice (political actors are assumed to optimize their results given institutional constraints and action of other actors). Result is that institutions affect political outcomes in systematic ways. P/NP or letter grading.

**M167C. Political Economy of Development. (4)** (Same as International Development Studies M120.) Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 50. Political economy approach to puzzle of why some countries are rich and others are poor and why, among latter, some have been able to achieve rapid rates of economic growth and others have not. Explanation and review of logic behind most important arguments that have been advanced to account for differences across countries in rates and levels of economic development. May be applied toward either Field IV or V. Letter grading.

**167D. Political Institutions and Economic Development. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: one statistics course. Designed for juniors/seniors. Data analytic approach to question of why some countries are rich and others are poor, with special attention to evidence about how governments and political institutions affect economic development. May be applied toward either Field IV or V. Letter grading.

**168. Comparative Political Analysis. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisites: two courses in Field IV, or course 50 and one course in Field V. Designed for juniors/seniors. Major approaches to study of comparative politics. Concepts and methodology of comparative analysis. Letter grading.

**169. Special Studies in Comparative Politics. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: two courses in Field IV. Designed for juniors/seniors. Intensive examination of one or more special problems appropriate to comparative politics. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change. P/NP or letter grading.

## Field V: Methods and Models

**170A. Studies in Statistical Analysis of Political Data. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Enforced requisite: course 6 or 6R. Designed for juniors/seniors. Use of statistical methods to interpret data and test theories from various fields in political science and use of quantitative evidence in construction of convincing and truthful arguments related to world of politics. Consult Schedule of Classes for topics to be offered in specific term. P/NP or letter grading.

**171A. Applied Formal Models: Collective Action and Social Movements. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 30. Designed for juniors/seniors. How do social and political movements convince people to participate? Consideration of various theoretical perspectives, including game-theoretic, social network, structural, and identity approaches, illustrated by case studies. P/NP or letter grading.

**171B. Collective Choice and Majority Rule. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 30. Designed for juniors/seniors. How do different ways of counting and casting votes affect political decisions? When can voting rules be manipulated by leaders and voters? Examples from legislative, electoral, and judicial politics. P/NP or letter grading.

**171C. Legislative Strategy. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 30. Designed for juniors/seniors. How do politicians get policy changes passed by legislatures, city councils, and other voting bodies? Applications of game-theoretic reasoning to common strategies and tactics in legislative settings. P/NP or letter grading.

**171D. Negotiation. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 30. Designed for juniors/seniors. Study of negotiation and bargaining in different contexts. Experiential exercises with emphasis on various aspects of negotiation, including coalition formation, honesty, and role of agents. P/NP or letter grading.

**172. Strategy and Conflict. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Enforced requisite: course 30. Designed for juniors/seniors. Intermediate topics in game theory applied to political problems, with special attention to strategic consequences of incomplete information and information asymmetries. P/NP or letter grading.

**179. Special Topics in Methods and Models. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Requisite: course 30. Designed for juniors/seniors. Intensive examination of one or more special problems related to methods and models in political science. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change. P/NP or letter grading.

## Field VI: Race and Ethnic Politics

**M180A. African American Political Thought. (4)** (Same as African American Studies M114C and Labor Studies M114C.) Lecture, three or four hours; discussion, one hour (when scheduled). Intensive introduction to African American political thought, with focus on major ideological trends and political philosophies as they have been applied and interpreted by African Americans. Debates and conflicts in black political thought, historical contest of African American social movements, and relationship between black political thought and major trends in Western thought. P/NP or letter grading.

**181A. Politics of Latino Communities. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: one 140-level course or one upper-division course on race or ethnicity from history, psychology, or sociology. Requisite: course 40. Designed for juniors/seniors. Focus on understanding relationships of power and interaction between institutional contexts of Latino life, such as economy, state, and cultural system on one hand and structure of everyday life in Latino households, neighborhoods, and communities on other. P/NP or letter grading.

**M181B. U.S. Latino Politics. (5)** (Same as Chicana/o and Central American Studies M155B.) Lecture, four hours; discussion, one hour (when scheduled). Examination of history and contemporary role of Latinos in U.S. political system. Topics include historical analysis of Latino immigration and migration; civil rights movement; increases in citizenship, registration, and voting in 1980s and 1990s; new wave of anti-immigrant attitudes; Development, Relief, and Education for Alien Minors (DREAM) Act and subsequent DREAMer movement; and response by Latinos today, with discussion of role of Latino vote in recent presidential elections. P/NP or letter grading.

**M182. Ethnic Politics: African American Politics. (4)** (Same as African American Studies M144.) Lecture, three or four hours; discussion, one hour (when scheduled). Preparation: one 140-level course or one upper-division course on race or ethnicity from history, psychology, or sociology. Requisite: course 40. Designed for juniors/seniors. Emphasis on dynamics of minority group politics in U.S., touching on conditions facing racial and ethnic groups, with black Americans being primary case for analysis. Three primary objectives: (1) to provide descriptive information about social, political, and economic conditions of black community, (2) to analyze important political issues facing black Americans, (3) to sharpen students' analytical skills. P/NP or letter grading.

**M183. Experiments in Racial and Ethnic Politics. (4)** (Same as Psychology M136C.) Lecture, three hours; laboratory, one hour. Research practicum consisting of designing, analyzing, and reporting effective research results. Topics include studying people's political attitudes, beliefs, and behaviors through carefully-designed experiments. P/NP or letter grading.

**M184A. Black Experience in Latin America and Caribbean I. (4)** (Same as African American Studies M154C.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Culture, history, politics, and identity of African Americans in Spanish and Lusophone Caribbean, South America, and Central America. Exploration of issues of identity in context of Afro/Latino migration to U.S. P/NP or letter grading.

**M184B. Black Experience in Latin America and Caribbean II. (4)** (Same as African American Studies M154D.) Lecture, three or four hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of issues regarding race and ethnicity in Latin America, with emphasis on comparisons to U.S. and within Latin America. Covers populations of African and indigenous origins, with emphasis on former. P/NP or letter grading.

**186. Special Studies in Race, Ethnicity, and Politics. (4)** Lecture, three or four hours; discussion, one hour (when scheduled). Recommended requisite: course 40. Designed for juniors/seniors. Intensive examination of one or more special problems related to race, ethnicity, and politics in political science. Sections offered on regular basis, with topics announced in preceding term. May be repeated for credit with topic change. P/NP or letter grading.

## Special Studies

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with fac-



ulty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Political Science. (1)** Seminar, one hour. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for credit. P/NP grading.

**190H. Honors Research Colloquia in Political Science. (1)** Seminar, one hour. Designed to bring together students writing departmental honors theses in seminar setting with one or more faculty members to discuss their thesis work in progress. Led by one supervising faculty member. P/NP grading.

**191A-191F. Variable Topics Research Seminars for Majors. (4 each)** Seminar, three hours. Preparation: two upper-division courses in field in which seminar is offered. Limited to junior/senior Political Science majors with 3.25 grade-point average in upper-division political science courses. Consult Schedule of Classes for topics to be offered in specific term. Reading, discussion, and development of culminating project. May be applied toward distribution or concentration requirement. May be repeated for credit. P/NP or letter grading. **191A.** Political Theory; **191B.** International Relations; **191C.** Politics; **191D.** Comparative Government; **191E.** Methods and Models; **191F.** Race, Ethnicity, and Politics.

**M191DC. CAPP Washington, DC, Research Seminars. (8)** (Same as Communication M191DC, History M191DC, Public Affairs M191DC, and Sociology M191DC.) Seminar, three hours. Limited to CAPP Program students. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**191H. Research Design Seminar for Honors Thesis. (4)** Seminar, four hours. Preparation: one course in 191 series, 3.5 grade-point average in upper-division political science courses, eligibility for Letters and Science honors. Required of all students who wish to write honors thesis. Students define their research topic, select suitable research method, determine appropriate sources of information, prepare research proposal, find thesis director, begin their research, and submit progress reports or preliminary drafts. Class sessions emphasize critical and constructive discussions of students' topics, methods, and problems in research, as well as general consideration of political science research topics and methods of current or continuing interest. May be repeated for credit. Letter grading.

**193. Journal Club Seminars: Political Science. (1)** Seminar, two hours. Limited to undergraduate students. Discussion of readings selected from current literature of field. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit. P/NP grading.

**194. Research Group Seminars: Political Science. (2)** Seminar, three hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field of research of faculty members or students. May be repeated for credit. P/NP grading.

**M194DC. Quarter in Washington, DC, Research Seminar. (4)** (Same as History M194DC and Sociology M194DC.) Seminar, three hours. Limited to Quarter in Washington students and other students enrolled in UC Washington Center programs. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**195CE. Community and Corporate Internships in Political Science. (4)** Tutorial, to be arranged; field-work, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend biweekly meetings with graduate student instructor, and write final research paper. Faculty mentor and graduate student instructor construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major; units applied must be taken for letter grade. May not be applied toward concentration or distribution requirements. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195DC. Quarter in Washington, DC, Internships. (4)** (Same as Community Engagement and Social Change M195DC, History M195DC, Public Affairs M195DC, and Sociology M195DC.) Tutorial, four hours. Limited to junior/senior Quarter in Washington program students. Internships in Washington, DC, through Center for American Politics and Public Policy. Students meet on regular basis with instructor and provide periodic reports of their experience. Individual contract with supervising faculty member required. P/NP grading.

**198. Honors Research in Political Science. (1 to 4)** Tutorial, two hours. Requisite: course 191H. Limited to juniors/seniors. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research in Political Science. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for maximum of 16 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

### Formal Theory and Quantitative Methods

**200A. Probability and Inference for Social Science. (4)** Lecture, three hours; discussion, one hour; field work, eight hours. Basic topics in probability, the mathematical framework developed to help us think systematically and logically in face of uncertainty. Letter grading.

**200B. Regression Analysis for Social Science. (4)** Lecture, three hours; discussion, one hour; field work, eight hours. Requisite: course 200A. Preparation: prior exposure to coding in R. Introduction to research design and regression analysis. Basic tools of statistical inference and application to practice of regression analysis. Emphasis on relationship of these statistical tools for drawing causal inferences; prediction and description also covered. Focus on principles of statistical inference, difference between design-based inference and model-based inference, identification versus estimation, building blocks of causal inference, char-

acterization of regression model, diagnostics and extensions of regression model, threats to validity of our estimates. Students become comfortable coding in statistical programming language R. S/U or letter grading.

**200C. Causal Inference for Social Science. (4)** Lecture, three hours; discussion, one hour; field work, eight hours. Requisites: courses 200A, 200B. Preparation: familiarity of basic probability theory and statistics, multivariate calculus, basic linear/matrix algebra. Clarification of conditions under which estimates made using non-experimental data can be given causal interpretation. Strategies for accessing and maximizing credibility of causal claims made from non-experimental evidence. Designs and methods, including experiments, matching, regression, panel methods, difference-in-differences, synthetic control methods, instrumental variable estimation, regression discontinuity designs, and sensitivity analyses. Reinforcement of some basic skills from probability and statistics. S/U or letter grading.

**200D. Maximum Likelihood for Social Science. (4)** Seminar, three hours; field work, eight hours. Introduction to theory and practice of maximum likelihood analysis in political science, including discrete choice models, event count models, and duration models. Lectures combine traditional formal mathematical derivations of various estimators and their properties with Monte Carlo simulations and discussion of applications and practice. S/U or letter grading.

**200E. Experimental Design for Social Science. (4)** Seminar, three hours; field work, eight hours. Preparation: familiarity with statistics of causal inference at level of course 200D. Covers design, analysis, and implementation of experimental research in social sciences. Emphasis on field experiments, though most issues that are covered are relevant for other modes including laboratory, laboratory-in-the-field, and survey experiments. S/U or letter grading.

**200F. Advanced Statistical Topics for Social Science. (4)** Seminar, three hours; field work, eight hours. Preparation: courses 200A through 200E. Topics vary according to student interest. May be repeated for credit. S/U or letter grading.

**200X. Data Analysis Workshop. (4)** Seminar, three hours. Enforced requisite: course 200C. Not open for credit to students with credit for course 200Y. Practice in applying statistical techniques to political science data. S/U or letter grading.

**200Y-200Z. Data Analysis Workshops. (2-2)** Seminar, two hours. Enforced requisite: course 200C. Course 200Y is enforced requisite to 200Z. Not open for credit to students with credit for course 200X. Practice in applying statistical techniques to political science data. S/U or letter grading.

**201A. Introduction to Formal Political Analysis. (4)** Seminar, three hours. Survey of formal political theory to enhance literacy and provide analytical tools without presupposing mathematical background. Model building, collective goods, unanimity and the social contract, voting rules, paradoxes and impossibility theorems, stability, individual liberty and decentralization, strategic manipulation representation, vote trading.

**201B. Theory of Collective Choice. (4)** Seminar, three hours. Recommended preparation for political science students: course 201A. Open to any student of politics, economics, philosophy, or mathematics with ability for deductive reasoning. Introduction to abstract, deductive study of voting systems and other collective-choice processes. Axiomatic method applied to politics and political economy, concept of rationality, and agenda control, choice-set or solution concepts.

**202. Mathematics for Political Science. (4)** Lecture, three hours. Preparation: working knowledge of high school algebra. Survey of mathematical methods useful in political science. Topics include differential and integral calculus, differential equations, optimization, and linear algebra.

**203A. Economic Theory and Methods for Political Science I. (4)** Discussion, three hours. Preparation: knowledge of elementary calculus. Introduction to techniques of economic analysis and survey of major

topics in formal political economy. Investigation of models of regulation, trade protection, collective bargaining, and economic growth as time permits.

**203B. Economic Theory and Methods for Political Science II. (4)** Discussion, three hours. Requisite: course 203A. Continuing survey of microeconomic techniques used in formal political science, with focus on market failures and on modeling individual choice in nonmarket situations. Specific topics include externalities, public goods and allocation mechanisms, collective action, spatial models, structure-induced equilibrium, and information asymmetries.

**204A. Game Theory in Politics I. (4)** Seminar, three hours. Survey of game theory, with emphasis on utilizing mathematical models to understand political and economic phenomena. Applications concern political participation, public goods, legislatures, industrial regulation, bureaucracies, interest groups, and party competition. Designed to help students become informed consumers of game-theoretical literature in political science. S/U or letter grading.

**204B. Game Theory in Politics II. (4)** Seminar, three hours; fieldwork, eight hours. Requisite: course 204A. Intermediate game theory course. Topics include games of incomplete information, cheap talk games, and bargaining theory. Applications concern political participation, public goods, legislatures, bureaucracies, conflict, and communication. Designed to help students use game theory in their research. S/U or letter grading.

**204C. Game Theory in Politics III. (4)** Seminar, three hours; fieldwork, eight hours. Requisites: courses 204A, 204B. Advanced game theory course, with emphasis on new and/or advanced techniques. Topics include timing games, stochastic games, and mechanism design. Applications concern bureaucracies, conflict mediation, and political transitions. Designed to help students use advanced game theory in their research. S/U or letter grading.

**M208B. Topics in Applied Game Theory. (4)** (Same as Economics M215.) Lecture, three hours. Preparation: calculus or introductory probability. Designed for graduate economics and political science students. Survey and applications of major solution concepts to models of bargaining, oligopoly, cost allocation, and voting power. S/U or letter grading.

**M208D. Multivariate Analysis with Latent Variables. (4)** (Same as Psychology M257 and Statistics M242.) Lecture, three hours. Introduction to models and methods for analysis of data hypothesized to be generated by unmeasured latent variables, including latent variable analogues of traditional methods in multivariate analysis. Causal modeling: theory testing via analysis of moment structures. Measurement models such as confirmatory, higher-order, and structured-means factory analytic models. Structural equation models, including path and simultaneous equation models. Parameter estimation, hypothesis testing, and other statistical issues. Computer implementation. Applications. S/U or letter grading.

**M208E. Bayesian Econometrics. (4)** (Same as Economics M232A.) Lecture, three hours. Requisites: Economics 231A, 231B. Subjective probability, introduction to decision theory, Bayesian analysis of regression, sensitivity analysis, simplification of models, criticism. May be repeated for credit. S/U or letter grading.

**209. Special Topics in Formal Theory and Quantitative Methods. (4)** Seminar, three hours. S/U or letter grading.

## Political Theory

**210A-210B. Political Theory Field Seminar 1, 2. (4-4)** Lecture, three hours; field work, eight hours. S/U or letter grading. **210A.** Exploration of major texts and issues in political theory. **210B.** Further exploration of major texts and issues in political theory.

**212. Seminar: Political Theory. (4)** Seminar, three hours. S/U or letter grading.

**214. Political Theory in Transnational Context. (4)** Seminar, three hours; discussion, one hour (when scheduled). Critical analysis of selected text from postcolonial, spatial, feminist, postmodern, and post-structuralist theories that assess impact of processes

of globalization on such major concepts and problems of traditional social and political theory as sovereignty, citizenship, rights, community, representation, and democracy. S/U or letter grading.

**215. Liberalism and Its Critics. (4)** Seminar, three hours; discussion, one hour (when scheduled). Examination of works of one or more major contemporary liberal theorists (Rawls, Dworkin, Habermas, Nussbaum, etc.) in light of alternatives which have been proposed to the liberal position (communitarianism, post-structuralism, group rights theories, etc.). S/U or letter grading.

**217. Selected Texts in Political Theory. (4)** Seminar, three hours. Critical examination of major texts in political theory, with particular attention to their philosophical system, their relations to contemporary political and intellectual currents, and importance of system for present-day political analysis. S/U or letter grading.

**218. Selected Topics in Political Theory. (4)** Seminar, three hours. Critical examination of major problem in political theory. S/U or letter grading.

**219. Workshop: Political Theory. (4)** Discussion, three hours. S/U or letter grading.

## International Relations

**220A. International Relations Core Seminar I. (4)** Seminar, three hours. Introduction to international relations theory: main schools of thought, methods of analysis, and research styles. Letter grading.

**220B. International Relations Core Seminar II. (4)** Seminar, three hours. Further analysis of academic work in international relations and introduction to design of research project in this area. Letter grading.

**220C. International Relations Research Seminar. (4)** Seminar, three hours; tutorial meetings, to be arranged. Design, implementation, and presentation of research project in international relations within combination of seminar and tutorial settings. Letter grading.

**222. Seminar: Strategic Interaction. (4)** Seminar, three hours. A strategic move influences the other person's choice by affecting his expectations of how we will behave. Discussion of theories of deterrence, coercive diplomacy, crisis management, war termination, and negotiation. Use of various theoretical approaches to explaining strategic interaction, including psychology, bargaining theory, and game theory.

**223. Politics and Strategies of Modern War. (4)** Seminar, three hours. Analysis of various national security problems in both their military/technical and political dimensions. Letter grading.

**225. American Foreign Policy. (4)** Discussion, three hours. Discussion of approaches used to explain foreign policy-making at individual, small group, bureaucratic, and domestic politics levels. Application to selected cases in American foreign policy.

**226. Making of American Foreign Policy. (4)** Seminar, three hours. Intensive analysis of policy formulation process and substance of selected contemporary problems in foreign policy. Political and institutional factors affecting foreign policies; analysis of policy options. S/U or letter grading.

**227. Foreign Policy Process. (4)** Seminar, three hours. Requisites: courses 120A, 220A, 220B. Political science and policy science approaches to national foreign policy process, with primary focus on formulation and implementation of American foreign policy. S/U or letter grading.

**230. Contending Perspectives on International Political Economy. (4)** Discussion, three hours. Survey of various theoretical approaches to international political economy.

**231. International Political Economy I. (4)** Seminar, three hours. Interaction between international trade and investment and domestic political economics of both industrialized and industrializing societies.

**232. International Political Economy II. (4)** Seminar, three hours. Designed to develop PhD students' skills in setting up and solving simple institutional design, political economy macro, signaling, and participation models, as well as two-level game models of do-

mestic politics and international conflict and cooperation, with emphasis on applications in international political economy and comparative politics.

**233A-233B-233C. Political Economy Workshops (4-4-4).** Discussion, two hours. Preparation: successful completion of major field examinations. Workshops for students writing or preparing to write dissertations. Reading and discussion of research in progress presented by UCLA faculty, visiting scholars, and advanced graduate students. Research paper of publishable length and quality required. S/U or letter grading.

**234A-234B-234C. Workshops: National Security, Foreign Policy, and International Relations (0-0-12).** Discussion, two hours. Preparation: successful completion of major field examinations. Course 234A is requisite to 234B, which is requisite to 234C. Courses must be taken in sequence. Workshops for students preparing for or working on dissertations. Reading and discussion of research in progress presented by UCLA faculty, visiting scholars, and advanced graduate students. Major research paper required. In Progress (234A, 234B) and letter (234C) grading.

**239. Selected Topics in International Relations. (4)** Seminar, three hours. S/U or letter grading.

## Comparative Politics

**240A-240B. Seminars: Comparative Politics. (4-4)** Seminar, three hours. Course 240A is not requisite to 240B. Letter grading. **240A.** Survey of ideas and approaches that have been historically important in field of comparative politics, with selection of theories and methodologies that have comprised field over time.

**240B.** Survey of contemporary research approaches and problems in field of comparative politics, with a range of theories and methodologies used by practitioners in the field.

**241. African Politics. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in African politics. S/U or letter grading.

**242. Chinese and East Asian Politics. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in Chinese and East Asian politics. S/U or letter grading.

**243. Japanese and Western Pacific Politics. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in Japanese and Western Pacific politics. S/U or letter grading.

**244. Latin American Politics. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in Latin American politics. S/U or letter grading.

**245. Middle Eastern Politics. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in Middle Eastern politics. S/U or letter grading.

**246A. Western European Politics. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in Western European politics. S/U or letter grading.

**246B. Political Development of Modern Europe. (4)** Seminar, three hours; discussion, one hour (when scheduled). Principal phases of political development from high feudalism to the present, together with theories of causation.

**247. Politics of Soviet Union and Post-Soviet Region. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in Soviet Union and post-Soviet region politics. S/U or letter grading.

**247A. Evolution of Soviet and Russian Politics. (4)** Seminar, three hours; discussion, one hour (when scheduled). Discussion seminar surveying political evolution of Soviet Union and its transformation.

**247B. Domestic Context of Russian Foreign Policy. (4)** Seminar, three hours. Examination of domestic social, political, bureaucratic, and organizational sources of Russian foreign and strategic policy. S/U or letter grading.

**248. South Asian Politics. (4)** Seminar, three hours. Survey of contemporary research approaches and problems in South Asian politics. S/U or letter grading.

**251. Political Economy of Economic Reform. (4)** Discussion, three hours. Some familiarity with economics helpful. Principal political and economic arguments for economic reform and consideration of political issues that arise from this process. Letter grading.

**252. Parties and Party Systems. (4)** Seminar, three hours; discussion, one hour (when scheduled). Theories and practices of political parties, party systems, and elections in comparative perspective.

**253. Political Change in Communist Systems. (4)** Discussion, three hours. Examination of political context and consequences of structural reform in Communist systems; theories of post-Leninist political pluralization and convergence.

**254A. Institutions and Comparative Politics: Comparative Institutional Analysis. (4)** Seminar, three hours; discussion, one hour (when scheduled). Use of advances of rational choice theory and new institutionalism to compare and analyze major institutional structures, including presidentialism vs. parliamentarism, unicameralism vs. bicameralism, two-party vs. multiparty systems, cadre vs. mass parties, and plurality vs. proportional electoral systems.

**254B. Institutions and Comparative Politics: Political Institutions, Delegation, and Policy-Making. (4)** Seminar, three hours; discussion, one hour (when scheduled). Analysis of political foundations of policy-making. Characterization of democratic institutions as a series of delegations, from voters to elected officials, within parties and legislatures, and from elected politicians to unelected bureaucrats. Examination of implications of different institutional designs for how those delegations are made and controlled.

**255. Seminar: Political Economy of Developing Countries. (4)** Seminar, three hours. Interdisciplinary seminar directed toward comparative analysis of political development and modernization. S/U or letter grading.

**256. External Sources of Domestic Politics. (4)** Discussion, three hours. Theoretical and historical studies of impact of war and trade on domestic cleavages, policy, and institutions. S/U or letter grading.

**257. Labor and Working-Class Politics. (4)** Discussion, three hours. Questions and topics on comparative labor and working-class politics. S/U or letter grading.

**258. Comparative Politics Proseminar. (2)** Seminar, 90 minutes. Biweekly speaker series featuring presentation of unpublished research papers by comparative politics faculty members as well as external scholars. Required participation and written assignments. S/U grading.

**259. Selected Topics in Comparative Politics. (4)** Discussion, three hours. Critical examination of major problems in comparative politics. S/U or letter grading.

## American Politics

**260A. Survey Course in American Politics: Political Parties and Electoral Process. (4)** Discussion, three hours. S/U or letter grading.

**260B. Survey Course in American Politics: American Political Institutions. (4)** Discussion, three hours. S/U or letter grading.

**M261A. Proseminar: Political Psychology. (4)** (Same as History M236A and Psychology M228A.) Seminar, three hours. Introduction to political psychology: psychobiography, personality and politics, mass attitudes, group conflict, political communication, and elite decision making.

**261B. Mass Attitudes and Political Behavior. (4)** Seminar, three hours. Requisite: course 141B or 260A. Analysis of development and change of political attitudes in mass publics and their relationship to voting, protest, and violence. S/U or letter grading.

**261C. Political Communication. (4)** Discussion, three hours. Broad survey of research bearing on role of mass media in the American political process. Topics include theories of persuasion, evolution of media effects research, reporting and advertising as determinants of election outcomes, adversarial versus deferential journalism, and analyses of media bias.

**M261D. Seminar: Political Psychology. (4)** (Same as Psychology M228B.) Discussion, three hours. Requisite: course M261A or Psychology 220A. Examination of political behavior, political socialization, racial conflict, mass political movements, and public opinion. S/U or letter grading.

**M261E. Critical Problems in Political Psychology. (4)** (Same as Psychology M228C.) Discussion, three hours. S/U or letter grading.

**262. Political Parties. (4)** Seminar, three hours. Critical examination of literature on party systems and organization. Special attention to political functions, electoral campaigns, and party cadres. S/U or letter grading.

**264. Politics and Society. (4)** Seminar, three hours. Application of selected classical and contemporary sociological theories to politics. S/U or letter grading.

**265. Politics and Economy. (4)** Discussion, three hours. Analysis of theoretical and practical relationships between economic organization and governmental institutions. Development and political implications of market system, banking and finance, corporate enterprise, and organized labor. S/U or letter grading.

**266. Group Theories of Politics. (4)** Discussion, three hours. Critical appraisal of group theory approaches to study of political decision making, with special attention to empirical research problems and findings. S/U or letter grading.

**268. Seminar: Political and Electoral Problems. (4)** Seminar, three hours. Preparation: two graduate courses in politics. S/U or letter grading.

**269. Seminar: Political Behavior. (4)** Seminar, three hours. S/U or letter grading.

**270. Legislative Behavior. (4)** Seminar, three hours. Analysis of major approaches to study of representative institutions, with special emphasis on assumptions, concepts, methods, and theoretical implications associated with each approach. S/U or letter grading.

**271. Executive Politics and Presidency. (4)** Seminar, three hours. Analysis of executive organization and leadership, with emphasis on American Presidency. Special attention to theories of organization and personality and relationship between executive and other institutions and groups. S/U or letter grading.

**272. Political Environment of Federal Executive. (4)** Discussion, three hours. Examination of political environment of federal executive in the U.S. Special attention to executive/legislative relations. S/U or letter grading.

**273. American Political Development. (4)** Discussion, three hours. National political institutions in historical perspective, theories of state building, state societal relations, political culture. S/U or letter grading.

**275. Seminar: American Political Institutions. (4)** Seminar, three hours. S/U or letter grading.

## Race, Ethnicity, and Politics

**280A. Race and Ethnic Politics Field Seminar 1. (4)** Seminar, three hours; field work, eight hours. Theories, methods, and development of paradigms in study of race and ethnic politics. S/U or letter grading.

**280B. Research Methods in Race-Ethnicity Politics. (4)** Seminar, three hours; field work, eight hours. Second course in race-ethnicity politics field seminar sequence. Review, dissection, discussion, and debate of different research methods that are used in race-ethnicity politics scholarship and advantages and disadvantages of different approaches and methodologies. S/U or letter grading.

**289A. Approaches to Study of Race, Ethnicity, and Politics. (4)** Seminar, three hours. Analysis of alternative theoretical, methodological, and empirical approaches to study of race, ethnicity, and politics. S/U or letter grading.

**289B. Current Research on Race, Ethnicity, and Politics. (4)** Seminar, three hours. Exploration of current research on race, ethnicity, and politics. S/U or letter grading.

## Special Studies

**290. Modern Political Economy. (4)** Discussion, three hours. Discussion of implications for understanding politics of thinking of politicians, bureaucrats, pro-

ducers, consumers, and nations as utility maximizers. Topics include microfoundations for macromodels, forms of political participation, state, government regulation, growth of government, bureaucracy elections, public policy, inflation. S/U or letter grading.

**292A. Introduction to Political Inquiry: Problems of Scientific Inquiry and Normative Discourse. (2)** Seminar, two hours; discussion, one hour (when scheduled). S/U grading.

**292B. Introduction to Political Inquiry: Research Design. (4)** Seminar, three hours; discussion, one hour (when scheduled). Design of qualitative and quantitative empirical research projects. S/U or letter grading.

**293. Great Ideas in Social Sciences. (2)** Seminar, two hours. Vehicle for faculty and visitors to teach research seminars of variable length. Special training opportunities on advanced quantitative methods, including complexity theory, agent-based modeling, experimental economics, social cognitive neuroscience, and evolutionary psychology, to be offered at irregular intervals. May be repeated for credit. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Political Science. (4)** Seminar, to be arranged. Seminar in teaching techniques, including evaluation of each student's own performance as a teaching assistant. Normally to be taken by all new teaching assistants in first term of their assistantships. May be taken only in term in which students are teaching assistants. May not be applied toward MA or PhD course requirements. S/U grading.

**495A. Teaching Political Science 1. (4)** Seminar, three hours. Intensive training during Spring Quarter. Required of all new PhD students and potential departmental teaching assistants. Practical and theoretical issues in teaching of political science. S/U grading.

**495B. Teaching Political Science 2. (4)** Seminar, two hours. Requisite: course 495A. Workshop in teaching techniques, including evaluation of each student's own performance as teaching assistant. Normally to be taken by all new teaching assistants in first term of their assistantships. May be taken only in term in which students are teaching assistants. May not be applied toward MA or PhD course requirements. S/U grading.

**501. Cooperative Program. (2 to 8)** Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. Directed Individual Study or Research. (2 to 4)** Tutorial, to be arranged. May be applied only three times toward minimum course requirement in first two years. May be repeated. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. May be repeated. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 12)** Tutorial, to be arranged. May be repeated. S/U grading.

# PSYCHIATRY AND BIOBEHAVIORAL SCIENCES

David Geffen School of Medicine

37-357 Semel Institute

Box 951759

Los Angeles, CA 90095-1759

## Psychiatry and Biobehavioral Sciences

310-206-5110

Helena Hansen, MD, PhD, *Interim Executive Chair*

Barry H. Guze, MD, *Vice Chair*

Alex J. Kopelowicz, MD, *Vice Chair*

Ira M. Lesser, MD, *Vice Chair*

Stephen R. Marder, MD, *Vice Chair*

James T. McCracken, MD, *Vice Chair*

Thomas B. Strouse, MD, *Vice Chair*

Margaret L. Stuber, MD, *Associate Chair, Medical Student Education*

Bonnie T. Zima, MD, MPH, *Associate Chair, Academic Affairs*

## Overview

The Department of Psychiatry and Biobehavioral Sciences offers interdisciplinary courses related to the mental health professions of the biobehavioral sciences in addition to its programs for psychiatry interns and residents and for medical students.

Enrollment in department courses is limited to registered UCLA students, students registered in programs officially affiliated with UCLA, and students enrolled concurrently through UCLA Extension. Students who meet these requirements, but who are not affiliated with a departmental training program, must also meet required course requisites determined by specific educational programs.

## Doctoral Internship Program in Clinical Psychology

The department offers a 12-month [Doctoral Internship Program in Clinical Psychology](#). Students enrolled in clinical psychology doctoral programs at APA-approved universities are eligible to apply. Applications are accepted from September 1 through November 1. The primary goal of the internship is to provide a year of intensive exposure to a wide variety of clinical experiences. The training is designed to maximize the personal growth of each intern. Interns are expected to develop proficiency in an area of focus as well as gain experience outside of their specific area of interest. At the beginning of the year, trainees design a program, both to supplement and complement previous development. Within the learning settings chosen by the trainee, every effort is made to teach

the specific techniques necessary to gain competence. The great variety of resources makes both the individualized choice and the acquisition of skills possible. Students interested in this program should contact the program office, 37-357 Semel Institute, 310-206-5110.

## Psychiatry and Biobehavioral Sciences Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**79. Applied Positive Neuroscience: Skills for Improving Productivity and Well-Being.** (5) Lecture, three hours; discussion, one hour. Not open to students with credit for Community Health Sciences 179. Intrapersonal, interpersonal, and extrapersonal contributions to well-being, and how activity and chemistry of key brain regions contribute to each, e.g. influences of mindfulness on prefrontal cortex activity, or how oxytocin system is altered by social interaction. Students learn to recognize relationship between cognitive, social, and emotional competence for healthy development, and how to apply it to their own lives. Through neuroscientific context, introduction to multidisciplinary perspectives on variety of topics that are widely considered significant maturational tasks for young adults, including emotion regulation, managing social relationships, enhancing productivity, and identity development. Letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**173. Mental Health: Bias, Inequities, and Racism.** (4) (Formerly numbered 188.) Lecture, three hours. Our brains bias our behaviors to optimize functioning in our environment but often based on premises that are contrary to society goals of equality. Biases, both implicit and explicit are prevalent, and their existence leads to both overt and covert decision-making based on race, financial status, gender, and disabilities. Focus on biases, inequities, and disparities that surround mental health. Exploration of relevant biases in society and how they may arise. Students learn about implicit and explicit bias, and discuss instruments attempting to measure biases including implicit-association test. Exploration of multiple areas related to structural racism and how it contributes to mental health inequities. Review of biases against those with mental health disorders, exacerbation of mental health disorders, health inequities because of racism and discrimination, and treatment biases for mental health

disorders. Consideration of current and historical research and relevance of public policies and criminal justice system in creating and perpetuating health inequities. P/NP or letter grading.

**174. Brain and Behavioral Health: Childhood and Adolescence.** (5) Seminar, three hours. Limited to junior/senior Neuroscience or Psychology majors. Integration of problem-based learning approach to teach foundational information about application of brain and behavioral science to understanding and promotion of child and adolescent mental health. Exploration of integration of developmental psychopathology, applied treatment research, and public policy to identify and dismantle barriers to problems. Focus on set of key topics (e.g., autism, mood disorders, anxiety disorders, and substance use disorders) during childhood and adolescence. Research of childhood and adolescent mental health and public policy literature. Guest facilitators with expertise complement study of emerging treatment advances, applications, and barriers. Letter grading.

**175. Mindfulness Practice and Theory.** (4) Seminar, five hours. Designed for beginners; prior experience with meditation not required. Introduction to mindfulness, including basic mindfulness meditation practices, both sitting and moving, ways to deepen positive emotions like gratitude, kindness, and joy, and methods for integrating more awareness and creativity into ordinary activities. Examination of varying meditative traditions as well as emerging science on beneficial effects of mindfulness practice for mental and physical health. Beneficial effects include reduced stress, improved attention, reduced emotional reactivity, and greater mind-body awareness. Learning and development of practical skills of relational mindfulness in interactions with others. Offered in summer only. P/NP or letter grading.

**176. Brain and Behavioral Health: Adulthood and Aging.** (5) Seminar, five hours. Limited to junior/senior Neuroscience or Psychology majors. Integration of problem-based learning approach to teach foundational information about application of brain and behavioral science to understanding and promotion of mental health during adulthood and aging. Exploration of integration of developmental psychopathology, applied treatment research, and public policy to identify and dismantle barriers to problems. Focus on set of key topics (e.g., depression, dementia, post-traumatic stress disorder) during adulthood and aging. Research of mental health and public policy literature. Guest facilitators with expertise complement study of emerging treatment advances, applications, and barriers. Letter grading.

**177A-177B. Brain and Behavioral Health Clinical Practicum.** (4-4) Fieldwork, six hours; discussion, one hour. Designed to provide students with integrated set of learning experiences related to mental health and wellness across lifespan. Through applied approach to brain and behavioral science, exploration of integration of developmental psychopathology, assessment and treatment research, and public policy to address issues related to psychological health and wellness. Focus on key topics (e.g., different classes of psychiatric illness) during childhood, adolescence, and adulthood offering direct exposure to health-care settings, clinical populations, and interdisciplinary teams that treat them. Students participate in assigned health setting under supervision of faculty mentor. Through observation of activities in clinical health setting, students see firsthand how brain and behavior science translates into real-world care. In Progress (177A) and letter (177B) grading.

**178. Cannabis and Cannabinoids: From Pharmacology to Public Policy.** (4) Lecture, three hours. Designed for undergraduate students with biology, human biology and society, neuroscience, physiology, or psychology background and graduate students in neuroscience-related programs. Relevant for those considering career in medical, social science, or policy fields. Offers comprehensive didactic information concerning Cannabis plant and relates basic information with clinical and societal use of plant and its extracts. Analysis of pharmacology of exogenous and endogenous cannabinoids at the molecular, cellular, and behavioral levels. Study of physiological and psycholog-



ical actions of phytocannabinoids (focusing on THC and CBD) and synthetic cannabinoids and evidence-based research of potential benefits and harms of different cannabinoids. Review of issues related to cannabinoid policy including legislation, FDA regulation, and health care services. P/NP or letter grading.

**M182. Personal Brain Management. (4)** (Same as Neuroscience M161.) Seminar, four hours. Basic overview of brain function and consideration of some management methods that exist already, and what future may hold. New methods for predicting our own futures and modeling what if scenarios that might alter risks and benefits of different courses of action, based on individual genetic background and other elements of personal history and environmental exposures. Introduction to key principles from science of behavior change, illustrating how important health-related behavioral habits are and how difficult these can be to change and why. Coverage of series of topics that center on personal enhancement of well-being through consideration of stress management, long-term goal and value identification, mapping of long-term goals onto immediate actions, reinforcement learning, meditation, neurofeedback, and time management. Critical appraisal of tools to help students distinguish scientifically validated procedures. Offered in summer only. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Psychiatry. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be taken for letter grade once only. May be repeated for credit. Individual contract required. Additional information and contract forms are available in Office of Education, 38-216 Semel Institute. P/NP or letter grading.

**199. Directed Research in Psychiatry and Biobehavioral Sciences. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M210. Editorial Board Apprenticeship. (2)** (Same as Health Policy and Management M249Q.) Seminar, two hours. Designed for postdoctoral fellows and advanced PhD students. Participation in peer review process for academic journal, *Health Psychology*, with consideration of interface between behavioral science, health, and medicine. Reading and discussion of submissions and advising of editor on suitability for full review. S/U or letter grading.

**226A-226B. Childhood Psychopathology Research Seminars. (2-2)** Seminar, 90 minutes. Current research in causes and behavioral manifestations of childhood psychopathology. Discussion on diagnosis and etiology of childhood disturbances.

**M230. Communication of Science. (2)** (Same as Biomathematics M262.) Lecture, two hours; discussion, one hour. Presentation of various types of scientific writings and their good practice. Details of writing specific articles: methods, results, discussion. Writing of review article. Grant submissions: aims, background, results, design. Role of appendices. Communication with lay public. S/U or letter grading.

**M232. Causal Inference. (4)** (Same as Biostatistics M235.) Lecture, three hours; discussion, one hour. Requisites: Biostatistics 200C, 202B, or equivalent. Philosophical foundations, logical paradoxes, decision analysis, selection bias, confounding, ecological paradox, historical development, potential outcomes, Rubin causal model, propensity scores, competing perspectives on path analysis and graphical/structural-equation models, experiments with noncompliance, principal stratification, decision making when causality is disputed, role of ethics in decision making. S/U or letter grading.

**M234. Affective Disorders. (2 or 4)** (Same as Psychology M280.) Seminar, two hours. General topics related to primary affective disorders (depression, manic depressive illness), including diagnosis, pharmacology, epidemiology, psychology, phenomenology, biology, and treatment. Students enrolled for 4 units are assigned a more intensive reading list and required to make a presentation or prepare a research paper.

**236A-236B-236C. Psychology Interns Seminars. (1-1-1)** Seminar, 90 minutes. Current topics in clinical psychology. Group-selected topics for discussion pertaining to psychopathology, diagnostic evaluation, and modalities of treatment. S/U grading.

**237. Seminar: Behavioral Neuroimmunology. (1)** Seminar, one hour per month; discussion, 30 minutes per month. Series of lectures presented the second Wednesday of each month throughout academic year by invited speakers. S/U grading.

**M238. Survey Research Techniques in Psychocultural Studies. (4)** (Same as Psychology M238.) Seminar, three hours. Designed for graduate students. Techniques for conceptualizing, conducting, and analyzing survey data; instruction in qualitative strategies for enhancing survey research on psychocultural problems.

**M240. Assessment and Treatment of African American Families. (3)** (Same as African American Studies M240.) Seminar, two hours. Designed for graduate students. Course aids mental health professionals and trainees in evaluation and treatment of African American families in terms of their cultural milieu, historical background, and economic status. Didactic presentations by instructors and invited guests form basis for supervised evaluation and case management with African American children and families. Letter grading.

**243A-243B-243C. Mental Retardation and Chronic Medical Illness Interdisciplinary Core Curriculum. (1-1-1)** Lecture, 90 minutes. Survey series on major topic areas of mental retardation and chronic medical illness, covering epidemiology, nosology, assessment, healthcare delivery systems, basic genetics, nutrition, direct care, and special deficits. Presented in interdisciplinary framework as generic information independent of discipline. S/U grading.

**253. Seminar: Child Development. (1)** Theories of development, systems of child development, and chronological aspects of child development. Presentation of assigned readings by students plays major role in each session.

**256. Basic Clinical Child Psychopathology. (1)** Weekly seminar covering basic clinical aspects of child psychopathology. Readings provided for basis of discussion on topics including interviewing of parents and children, diagnosis, and related syndromes. S/U grading.

**259. Legal and Ethical Issues with Vulnerable Populations. (3)** Lecture, 90 minutes; laboratory, three and one half hours. Discussion of current laws dealing with vulnerable populations (e.g., children, developmentally disabled people, elderly people); philosophies, ethics, ethical codes, issues, and how to resolve them. Use of videotapes and discussion of cases.

**261. Advanced Seminar: Child and Adolescent Psychopharmacology. (1)** Use of problem-based teaching methods and critical reviews of medical literature as basis for rational pharmacotherapy in children and adolescents. Major focus on development of a clinical decision-making process, given the limited scientific evidence supporting pharmacological practice in the field. S/U grading.

**M263. Clinical Pharmacology. (2)** (Same as Biomathematics M263 and Medicine M263.) Lecture, two hours. Preparation: completion of professional health sciences degree (MD, DDS, DNSc, or PhD). Overview of principles of clinical pharmacology, especially as they relate to clinical and translational medicine and to advances in contemporary medicine such as targeting, gene therapy, and genomics. Letter grading.

**264. Health and Mental Health Disparities from Psychosocial and Cultural Perspectives. (4)** Seminar, three hours. Designed for graduate and medical students, resident physicians, and juniors/seniors (with consent of instructor) interested in learning about general, sexual, and mental health disparities. Survey course to introduce students to health disparities that exist for ethnic minorities and factors that may contribute to disproportionate prevalence rates. Review and discussion of research literature, with focus on specific diseases such as HIV/AIDS, substance abuse, depression, and breast and prostate cancer. Discussion of stereotypes and myths about healthcare of ethnic populations. Examination of psychosocial and cultural contexts as potential or contributing factors. S/U or letter grading.

**M270. Neural Basis of Memory. (4)** (Same as Neuroscience M273.) Lecture, two hours; discussion, one hour. Anatomical, physiological, and neurological data integrated into models for how behavioral phenomena of memory arise. Discussion of invertebrate memory, cortical conditioning, hippocampus and declarative memory, and frontal lobes and primary memory.

**M272. Psychological Anthropology. (4)** (Same as Anthropology M237.) Seminar, three hours. Various psychological issues in anthropology, both theoretical and methodological. Areas of interest include such things as culture and theory, culture and personality, and culture psychiatry. Discussion of questions relating to symbolic and unconsciousness process as they relate to culture. Topics vary from term to term. May be repeated for credit with topic change. S/U or letter grading.

**274A-274B-274C. Research Seminar: Psychoneuroimmunology. (2-2-2)** Seminar, two hours. Research foundations for basic and clinical psychoneuroimmunology and clinical implications of relationship between brain, behavior, and immunity. S/U grading.

**275. Psychoneuroimmunology Research Seminar. (1)** Seminar, one hour. Topics to be centered around current directions in psychoneuroimmunology (PNI), including social genomics, inflammation, and biological aging. Common molecular and immunological protocols used in PNI and current directions in PNI research, with emphasis on basic immunology and immunological/molecular biology and role of behavioral and psychological factors on immune and cell-aging processes. S/U grading.

**M277. Cognitive Behavior Therapy with Children: Treatment and Systems of Care. (2 or 4)** (Same as Psychology M285.) Seminar, 90 minutes. Designed for graduate students. Cognitive/behavioral approaches to prevention and treatment of mental health problems in children. Examination of service delivery systems for treating troubled youth and discussion of issues with respect to current systems of care. Major problems include conduct disorders, attention deficit disorder, depression, anxiety, and learning disabilities. Letter grading.

**281A-281B-281C. Behavioral Therapy in Educational Settings. (4-4-4)** Lecture, one hour; laboratory, seven hours. Supervised experience in classroom working with exceptional children in conducting systematic observations, administering formal assessments, and developing and carrying out individualized educational and behavioral programs. Theoretical background furnished through one-hour weekly lecture. S/U or letter grading.

**M284A-M284B. Principles of Neuroimaging I, II. (4-4)** (Same as Neuroscience M284A-M284B and Psychology M288A-M288B.) Lecture, four and one half hours. Preparation: competence in integral calculus, electricity and magnetism, computer programming (any language), general statistics. Requisite: course 292. Course M284A is requisite to M284B. Instrumental imaging methods for study of nervous system, with emphasis on quantitative understanding and data interpretation and features common to modalities. X-ray computed tomography, magnetic resonance imaging, positron emission tomography, magnetoencephalography, transcranial magneto stimulation, near infrared imaging. Letter grading.

**M285. Functional Neuroimaging: Techniques and Applications. (3)** (Same as Bioengineering M284, Neuroscience M285, Physics and Biology in Medicine M285, and Psychology M278.) Lecture, three hours. In-depth examination of activation imaging, including MRI and electrophysiological methods, data acquisition and analysis, experimental design, and results obtained thus far in human systems. Strong focus on understanding technologies, how to design activation imaging paradigms, and how to interpret results. Laboratory visits and design and implementation of functional MRI experiment. S/U or letter grading.

**287. Small Group Cognitive/Behavioral Interventions. (4)** Lecture, three hours. Presentation of brief therapeutic interventions for adults and children at risk for suicide, depression, conduct problems, and HIV, with didactic and experiential techniques.

**M288. Social and Behavioral Factors of HIV/AIDS: Global Perspective. (4)** (Same as Community Health Sciences M294.) Lecture, four hours. Requisites: Community Health Sciences 100 and Epidemiology 100, or prior social sciences courses. Overview of social and behavioral factors which influence both transmission and prevention of HIV/AIDS throughout the world. Letter grading.

**289. Intervention to Reduce HIV and Its Consequences. (4)** Lecture, three hours. Examination of interventions to reduce HIV/AIDS transmission. Review of theory and research supporting efficacy of HIV interventions for variety of high-risk populations. Letter grading.

**290. Los Angeles HIV-Community Colloquia. (1)** Lecture, two hours. Examination of emerging scientific HIV-related research. Discussion of policy issues, theories, and designs of HIV-related services and programs and shifting epidemiology of the virus and disease. S/U grading.

**292. Functional Neuroanatomy for Neuropsychologists. (2)** Lecture, two hours. Preparation: graduate-level neuroanatomy course. Designed for neuropsychology and radiology postdoctoral fellows and neuroscience graduate students. Human functional anatomy from systems perspective, integrating results from lesion research and functional neuroimaging. Students learn to identify gyri and major sulci on MR images and memorize associated Brodmann's region. Letter grading.

**293. Professional Development: Presentations and Preparation for Academic Interviews. (2)** Seminar, two hours. Exposure to range of professional development skills essential to academic career development. Hands-on skills and practice in preparing and delivering presentations for various audiences, and preparing research and/or teaching statements for job applications. S/U grading.

**294. Essentials of Clinical Investigation. (2)** Lecture, two hours; discussion, two hours. Designed for graduate students. Introduction to initial steps in clinical research through preparation of research proposal. Small working groups develop grant proposal on specific topic. S/U grading.

**295A. Substantive Issues in Substance Abuse I. (2)** Seminar, two hours; discussion, one hour. Neurobiology and psychopharmacology of drug abuse, as well as epidemiology and prevention. Discussion of pros and cons of various treatment modalities for drug dependence. S/U grading.

**295B. Substantive Issues in Substance Abuse II. (2)** Seminar, two hours; discussion, one hour. Drug use patterns and treatment issues in specific populations such as women, adolescents, homeless, multiply diagnosed, as well as different ethnic populations. Exploration of relationship between drug abuse, sexuality, and HIV/AIDS. S/U grading.

**295C. Substantive Issues in Substance Abuse III. (2)** Seminar, two hours; discussion, one hour. Theoretical perspectives on drug use and abuse as well as policy and ethical aspects of drug abuse research. Research design and analysis issues pertinent to drug abuse research. S/U grading.

**296. Research Group Seminar: Practicum. (2)** Research group meeting, three hours. Designed for graduate students who plan to conduct research studies. Coverage of (1) publishing process—submitting manuscripts to journals, selecting appropriate journals, frequent reasons for journal rejection of manuscripts, and key points in writing articles for publication, (2) overview of National Institutes of Health (NIH), including organization structure and mission, grant application process, funding mechanisms, and review process, (3) preparing/writing grants for submission to NIH, including review of components of successful applications, criteria by which applications are judged, and what to emphasize in each section, (4) grant mechanisms specifically designed for new investigators, (5) human subjects section for grant applications and IRB issues, and (6) preparation of budgets (modular and detailed) and budget justification for NIH submissions. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**402. Journal Club. (1)** Seminar, two hours; outside study, two hours. Presentation of participants' current research. Critical review of recent articles on drug abuse. Training sessions included in areas in which fellows believe they have a recognized need. S/U grading.

**403. Individual Case Supervision. (1 to 4)** Preparation: submission of written proposal to be structured by instructor and student prior to enrollment; additional information and proposal forms available in Office of Education, 38-216 Semel Institute. One-to-one supervision of individual therapy cases, including analyses of patient data, supervision of ongoing treatment, informal didactic sessions on personality theory, and applications to patient management. S/U or letter grading.

**405. Trauma and Sexual Abuse Research Seminar. (4)** Seminar, three hours; discussion, one hour. Designed for graduate and medical students and resident physicians interested in learning about biobehavioral trauma research. Introduction to DSM-IV TR diagnostic criteria for posttraumatic stress disorder (PTSD), as well as biopsychosocial sequelae. Examination and discussion of child and adult sexual abuse in context of being causative precursors of acute and

chronic causes of PTSD. Evaluation of allostatic load, among other biologic variables, within context of physiological markers for PTSD. Review of current modes of treatment, including therapeutic and pharmacological interventions. Discussion of research methods particularly important for trauma research. S/U or letter grading.

**407A-407B-407C. Clinical Hypnosis Seminars. (2-2-2)** Seminar, two hours. Integrated, experientially oriented sequence with lecture, discussion, demonstration, practice, and assigned readings. Guest speakers with expertise in specific hypnotic applications and populations, and video programs included. Trainees and faculty members in healthcare professions as well as licensed healthcare providers from community (MCEP credit available) encouraged to enroll. For trainees in social work, psychology, and psychiatry, completion of minimum of one year of supervised training in psychotherapy or behavior therapy required. S/U grading. **407A.** Cultural and historical context for hypnosis; development of technical competence in trance induction, deepening, management, and re-alerting; and gaining familiarity with trance experiences. **407B.** Fundamentals of trance utilization, including diagnosis, creating safety, and facilitating exploratory trance experiences. **407C.** Application of hypnotic interventions in specific clinical situations and with specific populations.

**M424. Functional Magnetic Resonance Imaging Journal Club. (2)** (Same as Physics and Biology in Medicine M424.) Discussion, 90 minutes. Limited to 10 students. Current topics in functional neuroimaging, with emphasis on novel applications, analysis, and acquisition methods. Presentation and critique of student papers. Overall emphasis on magnetic resonance imaging. Example areas include tractography through diffusion tensor imaging, jittered event-related experimental designs, parallel receiver MR imaging, integrated electrophysiological and image acquisition. S/U grading.

**425. Teaching Case Conference. (1)** Review of diagnosis and treatment of full spectrum of disorders, with expert off-unit consultants. S/U or letter grading.

**429. Child Outpatient Team. (1)** Weekly team meetings to coordinate clinical activities of trainees in Child Outpatient Department. Discussion of literature and theories related to selected cases. S/U grading.

**431A-431B-431C. Pediatric Neuropsychology: Assessment, Diagnosis, and Treatment Planning. (1-1-1)** Seminar, one hour. Presentation of didactics on developmental disorders, pediatric syndromes, and acquired brain injury in children. Coverage of methods of assessment in children, with focus on neuropsychological testing. Presentation of differential diagnosis and treatment planning. S/U grading. **431A.** Developmental disorders, including autism, Asperger's, mental retardation, specific learning disabilities, and Attention Deficit/Hyperactivity Disorder. Current conceptualizations of these disorders used to form assessment techniques, including choice of instruments and interpretation of results. Practical issues in pediatric neuropsychology, including ethics, educational law, and interdisciplinary interventions. **431B.** Neurodevelopmental disorders, head injury, low birth weight, tumors, and epilepsy. **431C.** Implementation of research from previous two terms in case presentation format, supplemented with various guest speakers.

**434. Seminar: Addiction Psychiatry. (1)** Seminar, one hour. Cutting-edge research in neuroscience of addictive behavior, using both animal models and human participants. Neuroscience findings regarding multiple addictive substances (e.g., stimulants, alcohol, nicotine) and related behavioral traits (e.g., impulsivity, risky decision making). Some lectures provided by nationally recognized invited guest speakers. S/U grading.

**449. Parent Training Intervention Workshop. (2)** Lecture, 90 minutes; discussion, one hour. Advanced clinical trainees learn behavioral techniques of assessment and treatment of parent/child problems. Lectures, case presentations, and workshops on various skills necessary.

**454. Advanced Topics in Neuropsychology. (1)** Seminar, one hour. Coverage of topics in even years that involve interface of neuropsychology with other disci-

plines, such as cognition and psychopharmacology, cognitive remediation, ecological validity of neuropsychological assessment, cognition and genomics, and psychometrics/test development. Focus in odd years on current models of human neuropsychology, such as models of working memory, neuropsychology of emotion and social cognition, models of implicit versus explicit learning, types of attention, and models of executive processes. S/U grading.

**468. Translational Neuroscience of Drug Addiction. (1)** Lecture, one hour. Designed for graduate students. Students need cross-disciplinary knowledge to understand drug abuse etiology, behavior, consequences, and treatment. Coverage of major topics in drug addiction by emphasizing use of animal models to understand human addiction and to disclose how findings derived from human studies can be used to expand development of animal models. S/U grading.

**479. Genetics Clinic Presentation. (No credit)** Weekly clinical teaching session on patients seen in preceding genetics clinic. In-depth discussion on genetics of each disorder.

**480. Analysis of Human Chromosome Studies. (1)** Chromosome karyotypes prepared in cytogenetics laboratory during preceding week presented and discussed with reference to clinical findings. Teaching includes interpretation of abnormal karyotypes and technical aspects of routine and special chromosome stains.

**482. Clinical Practicum in Childhood Anxiety and Related Disorders. (3)** Clinic, two hours. Training in cognitive/behavioral assessment and treatment of children and adolescents with anxiety and related disorders. Didactic and experiential training, including direct patient care, clinical supervision, and participation in weekly team meetings. Letter grading.

**485. Human Genetics Seminar. (No credit)** Seminar, one hour. Preparation: introductory genetics course. Weekly lecture series intended for those interested in human genetics or in specific topic to be presented. Speakers are invited for their expertise or research in some special area related to human genetics and may be from UCLA or elsewhere. No grading.

**M490. Educational Advocacy. (2)** (Same as Law M431.) Clinic, two hours (12 weeks). How to provide educational advocacy based on IDEA, ADA, and Section 504 of Rehabilitation Act on behalf of children with learning disabilities, behavior disorders, and mental retardation. S/U or letter grading.

**596P. Individual Studies in Psychiatry. (2 to 12)** Tutorial, to be arranged. Preparation: submission of written proposal outlining course of study (to be structured by instructor and student at time of initial enrollment). Additional information and course proposal forms available in Office of Education, 38-216 Semel Institute. Directed individual research and study in psychiatry at graduate level. S/U or letter grading.

## PSYCHOLOGY

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Barbara Knowlton, PhD, *Vice Chair, Undergraduate Programs*

Theodore F. Robles, PhD, *Vice Chair, Graduate Programs*

## Faculty Roster

### Professors

Howard S. Adelman, PhD  
Robert F. Asarnow, PhD, *in Residence (Della Martin Professor of Psychiatry)*  
Carrie E. Bearden, PhD, *in Residence*  
Robert M. Bilder, PhD, *in Residence (Michael E. Tennenbaum Family Endowed Professor of Creativity Research)*  
James W. Bisley, PhD (*Ethel Scheibel Professor of Neuroscience*)  
Hugh T. Blair, PhD  
Aaron P. Blaisdell, PhD  
Susan Y. Bookheimer, PhD, *in Residence (Joaquin M. Fuster Professor of Cognitive Neuroscience)*  
Julienne E. Bower, PhD  
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Dean V. Buonomano, PhD  
Li Cai, PhD  
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Denise A. Chavira, PhD  
Patricia Cheng, PhD  
Bruce F. Chorpita, PhD  
Michelle G. Craske, PhD (*Kevin Love Fund Centennial Professor*)  
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Adriana Galván, PhD  
Noah J. Goldstein, MA, PhD (*Ho-Su Wu Professor of Management*)  
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Keith Holyoak, PhD  
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Margaret J. Shih, PhD (*Neil Jacoby Professor of Management*)  
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A. Janet Tomiyama, PhD  
Miguel M. Unzueta, PhD  
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Jackson Beatty, PhD  
Peter M. Bentler, PhD  
Elizabeth L. Bjork, PhD  
Robert A. Bjork, PhD  
Janet B. Blacher, PhD  
William E. Broen, Jr., PhD  
Andrew Christensen, PhD  
Christine A. Dunkel Schetter, PhD  
Michael S. Fanselow, PhD (*Staglin Family Professor Emeritus of Psychology*)  
Charles R. Gallistel, PhD  
R. Edward Geiselman, PhD  
Rochel Gelman, PhD  
Gerald M. Goodman, PhD  
Carlos V. Grijalva, PhD  
Constance L. Hammen, PhD  
Eric W. Holman, PhD  
John P. Houston, PhD  
Franklin B. Krasne, PhD  
Steven R. Lopez, PhD  
Donald G. MacKay, PhD  
Albert Mehrabian, PhD  
Gregory A. Miller, PhD  
Hector F. Myers, PhD  
Allen Parducci, PhD  
L. Anne Peplau, PhD  
Rena L. Repetti, PhD  
Tara K. Scanlan, PhD  
Stanley J. Schein, MD, PhD  
David O. Sears, PhD  
David Shapiro, PhD  
James H. Sidanius, PhD  
Shelley E. Taylor, PhD  
James P. Thomas, PhD  
Jill M. Waterman, PhD  
Bernard Weiner, PhD  
John R. Weisz, PhD  
Nancy J. Woolf, PhD

### Associate Professors

Erica A. Cartmill, PhD  
Jesse A. Harris, PhD  
Katherine H. Karlsgodt, PhD  
Ian M. Krajbich, PhD  
Carolyn M. Parkinson, PhD (*Bernice Wenzel and Wendell Jeffrey Term Endowed Professor of Cognitive Neuroscience*)  
Jesse A. Rissman, PhD  
Jennifer A. Silvers, PhD (*Bernice Wenzel and Wendell Jeffrey Term Endowed Professor of Developmental Neuroscience*)  
Nanthia A. Suthana, PhD, *in Residence*

### Assistant Professors

Avishek Adhikari, PhD

Idan A. Blank, PhD  
 Tiffany N. Brannon, PhD  
 Bridget L. Callaghan, PhD  
 David Clewett, PhD  
 Han Du, PhD  
 Tao Gao, PhD  
 Tiffany C. Ho, PhD  
 Falk Lieder, PhD  
 Amanda K. Montoya, PhD  
 Lauren C. Ng, PhD  
 Jennifer A. Sumner, PhD  
 Andrew M. Wikenheiser, PhD

#### Lecturers PSOE

Steven J. Bennoun, PhD  
 Melissa Paquette-Smith, PhD

#### Adjunct Professors

Iris Firstenberg, PhD  
 Karen B. Givvin, PhD  
 William E. Grisham, PhD  
 Dahlia Zaidel, PhD

#### Adjunct Associate Professors

Danielle Keenan-Miller, PhD  
 Philip Sayegh, PhD

#### Adjunct Assistant Professors

Melissa J. Sharpe, PhD  
 Yalda J. Uhls, PhD

## Overview

Psychology is a subject of considerable interest to most people—we all tend to practice some form of intuitive psychology in an attempt to understand ourselves and the people and groups with whom we interact. The curriculum offered by the Department of Psychology presents psychology as a scientific discipline that employs systematic methods of inquiry to study and explain human and animal behavior—both normal and abnormal—in terms of a variety of underlying variables, including neural, physiological, and cognitive processes; developmental factors and individual differences; and social and interpersonal influences and contexts. According to recent surveys, the Psychology Department is ranked as one of the top departments in the country.

## Undergraduate Study

The undergraduate curriculum has been designed to reflect the extensive breadth of psychology—both the range of behavioral phenomena studied and the variety of methods and theoretical approaches employed—while allowing students to pursue in greater depth those areas in which they become most interested. Beyond basic core courses, students can take many specialized courses in areas such as behavioral neuroscience, animal behavior, learning and memory, motivation, perception, cognition, measurement, personality, and clinical, social, developmental, community, and health psychology. The curriculum also provides excellent opportunities for research experience—either in the form of laboratory courses or by participation with faculty members and graduate students in a wide variety of research projects.

Three undergraduate majors are offered: a Bachelor of Arts (BA) in Psychology, a Bachelor of Science (BS) in Cognitive Science, and a BS in Psychobiology. While the majors overlap in certain fundamental and basic knowledge bases, they differ considerably in their focus (i.e., the extent to which certain areas of psychology and related disciplines are studied) and in terms of the different student interests and needs they satisfy. For nonmajors, the department offers many courses that provide students with new and valuable insights into the understanding of human behavior, including their own.

## Honors Courses

Each year the department offers a selection of honors courses, designated with an H suffix. The courses provide close contact with faculty members, emphasize readings in the original literature, student reports, and small group discussions, and may include field or research experience. Contact the College of Letters and Science for information on requirements for College Honors.

## Graduate Study

At the graduate level, the department offers training leading to the PhD degree with emphases in the areas of behavioral neuroscience, clinical, cognitive, cognitive neuroscience, computational cognition, developmental, health, learning and behavior, social and affective neuroscience, and quantitative psychology. The graduate program is designed to prepare future psychologists for careers as scientific investigators, college and university teachers, and clinical scientists.

## Fieldwork and Research Opportunities

Many research and fieldwork opportunities are open to students who wish to expand their knowledge and broaden their background in the field of psychology. These experiences can be enriching and help bring undergraduate students closer to understanding the importance of research and internships, including their applications in the everyday world. At least one of the following courses is recommended for students planning postgraduate study: Psychology 99, 185, 192, 194A through C194D, 195A, 195B, 196A, 196B, 199A, or 199B. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward the undergraduate degree. Information about these courses and programs is available from the Undergraduate Advising Office.

Only one 4-unit 199 course may be taken per term, and only 16 units of course 199 may be applied toward the degree. Only one 199 course may be taken for a letter grade (additional 199 courses may be taken on a P/NP basis). If approved in advance by the Undergraduate Advising Office, 8 units of course 199 may be applied toward the Psychology 195B/196B requirement for the Cognitive Science major and 4 units of course 199B may be applied to-

ward the elective course requirements for the Psychology major.

## Psychology Research Opportunity Programs

The [Psychology Research Opportunity Programs](#) (PROPS) represent a vital effort to identify and mentor underrepresented minority and/or low-income students. The purpose of PROPS is to encourage such students to participate in research and pursue graduate studies leading to careers in academia. The recruitment and application process for PROPS takes place each fall quarter. Students selected to participate are awarded stipends for winter and spring quarters, during which time they do research under the mentorship of a psychology faculty member. In addition, students are required to attend weekly seminars covering such topics as graduate school, careers in academia, and research opportunities in various fields of psychology. Prior research experience is not required. This is an excellent opportunity for students to begin their research careers and acquire the needed experience to pursue advanced studies.

## Infant Development Program

The [Megan E. Daly Infant Development Program](#) (IDP), established in May 1983, is located at the Fernald Center at 320 N. Charles E. Young Drive and has two primary functions: (1) to offer quality group care for infants and toddlers of the students, staff, and faculty of the Psychology Department and other UCLA departments, and (2) to serve as a teaching and research facility for the Psychology Department and the UCLA community. The program's two classrooms each serve children from three months to three years old and accommodate both cross-sectional and longitudinal investigation of infants, toddlers, their families, and caregivers. In addition, the program serves as a primary internship site for students in the Applied Developmental Psychology (ADP) minor, enabling ADP students to acquire firsthand experience observing and caring for infants and toddlers in a professional group setting.

## UCLA Psychology Clinic

The UCLA [Psychology Clinic](#) in the Department of Psychology is a major training center for students in the clinical psychology PhD program, one of the top-ranked programs in the country. It provides a broad range of psychological services to children and adults, including assessment and individual, couples, family, and group therapy. Clients cover the entire age range and represent diverse populations in the community.

Student therapists receive very close supervision and utilize research-based cutting-edge psychological interventions. Students and faculty members are also involved in a variety of research projects through the clinic.



# Undergraduate Majors

## Psychology BA

The Psychology major is the most general of the three majors and offers both broad and in-depth coverage of the fundamental and traditional areas of psychology. It provides students with a strong foundation for postgraduate education in psychology and can serve as excellent background to prepare them for further training in such fields as law, education, government and public policy, business, and many of the health-related professions. Its basic liberal-arts orientation also provides students with an excellent foundation for immediate postbaccalaureate careers in many areas, particularly ones in which an understanding of human behavior and its diversity of expression would be an asset.

The requirements described below represent the minimum requirements in satisfaction of the preparation and the major. Additional courses in psychology, statistics, and related sciences, as well as other types of research and fieldwork experiences, are highly recommended if students plan to pursue graduate work in psychology and related fields. Under special circumstances, graduate-level courses can be taken by undergraduate students, although such courses may not be applied toward degree requirements for the major. For additional information, contact the Undergraduate Advising Office.

## Learning Outcomes

The Psychology major has the following learning outcomes:

- Demonstrated ability to design an experiment in a field of psychology
- Ability to formulate a hypothesis based on knowledge of current literature
- Demonstrated application of principles of control groups and appropriate methodology
- Demonstrated awareness of major research methods in chosen area of psychology
- Demonstrated ability to apply appropriate statistical methods in analyzing data
- Demonstrated ability to write up of results of an experiment
- Ability to relate finding to current literature and interpret them in this context
- Ability to discuss results in front of a group of other students
- Ability to verbally communicate ideas motivating experiments
- Ability to clarify experiment to those not familiar with the methods and answer questions

## Entry to the Major

### Pre-major

Students need to file a petition in the [Undergraduate Advising Office](#) to declare the Psychology pre-major. Psychology pre-majors can petition to declare the Psychology major once they have (1) satisfied all the preparation for the major requirements and (2) are accepted into the major through a competitive application process (for students who entered UCLA as

first years) or file a petition to declare the Psychology major (for students who entered UCLA as transfers).

### First-Year Students

Students may declare the Psychology pre-major once they have established a 2.5 grade-point average in at least one preparation for the major course.

Students must petition to declare the Psychology major and can do so once they complete all seven preparation for the major courses and submit an application to enter the major by the end of the fall quarter of their third year at UCLA. Admission into the major is based on student academic performance in the preparation courses. Students who have a grade-point average of 2.9 or higher in the preparation coursework and have met all other Psychology pre-major requirements are guaranteed entry into the major after they submit the application by the above deadline. Students with a grade-point average between 2.5 and 2.89 in the preparation coursework enter a competitive application pool and are admitted only if there is space available in the major. Students with a grade-point average below 2.5 in the preparation coursework are not eligible to apply for admission to the major.

### Transfer Students

Transfer applicants to the Psychology major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one biology course equivalent to Life Sciences 7A or 15 or Physiological Science 3, one general chemistry or general physics course, one philosophy course, one introduction to psychology course, and one course from statistics (recommended), finite mathematics, calculus, computer science theory, or computer programming in C++.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Undergraduate Advising Office.

### Policies

Students who repeat more than two preparation courses or any preparation course more than once are denied admission to the major.

## Requirements

### Preparation for the Major

*Required:* Life Sciences 7A or 15 or Physiological Science 3; Chemistry and Biochemistry 14A or 17 or 20A or Physics 1A or 5A or 10 or 11; one course from Program in Computing 10A, Statistics 10, or one term of calculus; one course from Philosophy 1, 2, 3, 4, 5, 6, 7, 8, 9, 21, 22, 22W, 23, 31; Psychology 10, 100A, 100B.

### The Major

*Required:* (1) Five core courses, with at least two from each category and a fifth course from either category: (a) Psychology 110, 115 (or M117A, M117B, and M117C), 120A, 120B, and (b) 127A or 127B or 127C, 130 (or one course

from 133A through 133I or 161), 135, 150; (2) one laboratory/fieldwork course from 101, 111, M116A, 116B, 121, 126, 131, 136A, 136B, M136C, 151, 186A through 186D; (3) four additional upper-division elective courses (16 units) in psychology.

### Honors Program

Students work for one year (fall through spring quarters) with a Psychology Department faculty sponsor on a research project that is the basis of a formal honors thesis. During that year they also participate in a weekly seminar (Psychology 191AH, 191BH, 191CH) in which thesis projects are presented and discussed and other topics of interest are explored with invited faculty members and other guests. Other requirements may apply.

## Policies

### Preparation for the Major

Each of the courses must be taken for a letter grade (C or better in Psychology 10, 100A, and 100B, C– or better in the remaining courses).

Students cannot take Psychology 100B until they have passed course 100A with a grade of C or better. Psychology 100A and 100B are only open to students who have declared the Psychology pre-major before the term in which they plan to enroll. It is recommended that students with no background in introductory statistics take Statistics 10 before enrolling in course 100A.

### The Major

Students who complete Psychology M117A, M117B, M117C receive equivalent credit for course 115 and two upper-division psychology electives. All three courses must be completed to receive psychology elective credit.

Each upper-division course must be taken for a letter grade. A C– or better is required in each core course and in at least one laboratory/fieldwork course. Students must have a 2.0 grade-point average in all upper-division courses elected to satisfy major requirements.

### Honors Program

Majors intending to continue study at the graduate level are encouraged to apply for the departmental honors program. Contact the [Undergraduate Advising Office](#) during spring quarter for more information and application forms. Satisfactory completion of the program and the other requirements for the major leads to awarding of the degree with honors or high-est honors.

## Cognitive Science BS

The Cognitive Science major focuses on the study of intelligent systems, both real and artificial. While including a strong foundation in the traditional areas of psychology, the major is interdisciplinary in nature and emphasizes subject matter within cognitive psychology, computer science, mathematics, and related disciplines.

The requirements described below include sufficient preparation if students plan to pursue graduate work in cognitive science or related

fields; however, they may want to include additional advanced courses in psychology and fields related to cognitive science (e.g., computer science, linguistics, mathematics, philosophy, and statistics) as well as other types of research and fieldwork experiences.

## Capstone Major

The Cognitive Science major is a designated capstone major. Students are required to produce a paper based on each term of their experience in a research laboratory or approved fieldwork site. Through completion of the capstone experience students are expected to identify a research topic and hypothesis to be tested or a fieldwork project and goals, show that they can organize and integrate information related to the topic or project in a clear manner in their own words, demonstrate ability to find and utilize supporting literature relevant to their project or topic, and successfully relate the paper to their experience in the laboratory or fieldwork setting.

## Learning Outcomes

The Cognitive Science major has the following learning outcomes:

- Ability to identify a research topic and hypothesis to test, or a fieldwork project and goals
- Demonstrated organization and integration in a clear manner and in the student's own words, of information related to a topic or project
- Demonstrated ability to find and utilize supporting literature relevant to a project or topic
- Successful relation of the paper to the student's laboratory or fieldwork experience
- Ability to discuss results in front of a peer group: verbally communicate ideas motivating the experiment, make the experiment clear to those not familiar with the methods, and answer questions

## Entry to the Major

### Pre-major

Students need to file a petition with the [Undergraduate Advising Office](#) to declare the Cognitive Science pre-major. They are then identified as Cognitive Science pre-majors until they (1) satisfy the preparation for the major requirements and (2) are accepted into the major through a competitive application process (for students who entered UCLA as first years) or file a petition to declare the Cognitive Science major (for students who entered UCLA as Cognitive Science pre-major transfers). Questions about the major should be directed to the Undergraduate Advising Office.

### First-Year Students

Students may declare the Cognitive Science pre-major once they have established a 2.9 grade-point average (GPA) in at least one preparation for the major course.

Students must petition to declare the Cognitive Science major and can do so once they complete all preparation for the major courses and submit an application to enter the major by the end of the fall quarter of their third year at UCLA. Admission into the major is based on

student academic performance in the preparation courses. Students must have a minimum 2.9 GPA in preparation coursework and submit the application by the above deadline in order to be admitted to the major. A minimum 3.2 GPA is required for guaranteed admittance to the major.

Students with a GPA between 2.9 and 3.19 in the preparation coursework enter a competitive application pool and are admitted only if there is space available in the major. Students with a GPA below 2.9 in the preparation coursework are not eligible to apply for admission to the major.

### Transfer Students

Transfer applicants to the Cognitive Science major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one biology course, one general chemistry or general physics course, two calculus/analytical geometry courses, one general physics course, one philosophy course, one introduction to psychology course, one introduction to cognitive science course, one psychological statistics course, one psychology research methods course, one computer programming course in C++, and one other computer programming course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Policies

Students who repeat more than two preparation courses or any preparation course more than once are denied admission to the major.

Each of the required courses must be taken for a letter grade (C or better in each course and a 2.5 overall grade-point average in the preparation courses) by the end of the summer quarter of the third year to be eligible to petition to declare the Cognitive Science major.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Undergraduate Advising Office.

## Requirements

### Preparation for the Major

*Required:* Life Sciences 7A or 15 or Physiological Science 3; Chemistry and Biochemistry 14A or 17 or 20A or Linguistics 1 or 20 or Physics 1A or 5A or 10 or 11; Mathematics 3A, 3B, and 3C, or 31A or 31AL and 31B; Philosophy 7 or 8 or 9 or 23 or 31; Program in Computing 10A and two courses from 10B, 10C, 15, 16A, 20A, 40A, Psychology 20A, 20B, 30, Statistics 20, 21; and Psychology 10, 85, 100A, 100B.

### The Major

*Required:* (1) Psychology 115 (or M117A, M117B, and M117C), 120A or 120B, and one course from 124A through 124K; (2) one course from 111, M116A, 116B, 121, 186A through 186D, Computer Science 161; (3) five upper-division elective courses (20 units) from Psychology 110, 111, 112A through 116B, 118 through 119Y, 120A, 120B, 121, 124A through 124K (if taken for the major, may not be applied as an elective), 130, 133B, 133C, 133E, 135, 137A,

M137B, 137G, 142H, 161, M166, 186A through 186D, 196B (one quarter may be applied if course has not been applied toward capstone requirement), 191CH (if content is approved by the [Undergraduate Advising Office](#) and course has not been applied toward the Psychology 195B or 196B requirement), Anthropology 124Q, M124R, 136A, M150, Communication 115, 118, 119, 122, 126, M127, 129, 130, 131, 155, Computer Science 111 through CM186, Linguistics 103 through 185B, Mathematics 110A through 171, Music Industry M103, Neuroscience 102, M145, C177, 180, 181, 182, Philosophy 124 through 138, 154, C154B, 170, 172, 174, 180, 181, Psychiatry M182, Statistics 100A, 100B, 100C, 101B, 101C, 115, C161, C180; and (4) in the junior or senior year, one capstone term of Psychology 195B or 196B (may be fulfilled by taking any one course from 195B or 196B or 196B/194C, provided content is approved by the Undergraduate Advising Office).

### Honors Program

Students work for one year (fall through spring quarters) with a Psychology Department faculty sponsor on a research project that is the basis of a formal honors thesis. During that year they also participate in a weekly seminar (Psychology 191AH, 191BH, 191CH) in which thesis projects are presented and discussed and other topics of interest are explored with invited faculty members and other guests. Other requirements may apply.

## Computing Specialization

Majors may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the specified major, (2) completing four courses from Program in Computing 10A, 10B, 10C, 15, 16A, 20A, 40A, Psychology 20A, 20B, 30, Statistics 20, 21, and (3) completing at least two courses from Psychology 85, 121, 142H, 186A through 186D (one 199 course may be substituted for one of these courses provided project has been approved by vice chair). A grade of C or better is required in each course. Students graduate with a bachelor's degree in their major and a specialization in Computing. Students planning to enter this specialization should contact the Undergraduate Advising Office.

### Policies

#### Preparation for the Major

Each of the required courses must be taken for a letter grade, and complete with a C or better.

Students cannot take Psychology 100B until they have passed course 100A with a grade of C or better. Psychology 100A and 100B should be taken early in the career; these courses are open only to students who have declared the Cognitive Science pre-major before the term in which they plan to enroll. Students with no background in introductory statistics should take Statistics 10 before enrolling in course 100A.

#### The Major

Students who complete Psychology M117A, M117B, M117C receive equivalent credit for course 115 and two upper-division cognitive

science electives. All three courses must be completed to receive cognitive science elective credit.

Students must have a 2.0 grade-point average in all upper-division courses selected to satisfy major requirements. With the exception of Psychology 195B and 196B, each course must be taken for a letter grade.

### Honors Program

Majors intending to continue study at the graduate level are encouraged to apply for the departmental honors program. Contact the [Undergraduate Advising Office](#) during spring quarter for more information and application forms. Satisfactory completion of the program and the other requirements for the major leads to awarding of the degree with honors or highest honors.

## Psychobiology BS

The Psychobiology major is designed for students who plan to go on to postgraduate work in physiological psychology, neuroscience, behavioral aspects of biology, or the health sciences. Psychobiology is the study of behavior from a biological perspective. It includes neural, experimental psychological, natural history, genetic, comparative/evolutionary, and developmental approaches to understanding human and animal behavior.

The requirements described below include sufficient preparation if students plan to pursue graduate work in any of the above fields; however, they may want to include additional advanced courses in psychology and related sciences as well as other types of research and fieldwork experiences.

### Learning Outcomes

The Psychobiology major has the following learning outcomes:

- Demonstrated ability to use working knowledge of the nervous system to deduce the consequence of nervous system dysfunctions
- Demonstrated understanding of molecular events at a cellular level by describing the physiological consequences of such events in qualitative and quantitative terms
- Demonstrated ability to utilize knowledge of sensory systems by describing their processes in both quantitative and phenomenological terms
- Demonstrated ability to choose and apply the appropriate quantitative analysis tools to a data set and meaningfully interpret the results of the analysis
- Demonstrated ability to read primary literature in the field and evaluate the validity of conclusions in light of the methodology and statistical analyses used as well as the logic of assertions presented
- Demonstrated ability to communicate the results of laboratory work orally or in writing with appropriate graphic depictions of the data
- Ability to relate work in literature in meaningful ways, explaining the motivation for the study and the interpretation of the results

- Demonstrated thorough knowledge of neuroanatomy, including lobes of the brain, major anatomical landmarks, cranial nerves, and major subcortical structures
- Demonstrated thorough knowledge of the sequence of events that results in an action
- Demonstrated thorough knowledge of sensory systems, including signal transmission, neuroanatomical connections, and response properties of neurons in primary cortical areas
- Ability to analyze the behavior of neurons in circuits and predict how other neurons in the circuit will react when other neurons are depolarized or hyperpolarized

## Entry to the Major

### Pre-major

Students need to file a petition in the [Undergraduate Advising Office](#) to declare the Psychobiology pre-major. They are then identified as Psychobiology pre-majors until they (1) satisfy the preparation for the major requirements and (2) file a petition to declare the Psychobiology major.

### Transfer Students

Transfer applicants to the Psychobiology major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C; one year of calculus; one year of general chemistry with laboratory for majors; one semester of organic chemistry with laboratory; one introduction to psychology course; one psychological statistics course; and one psychology research methods course. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Policies

Student must complete all preparation for the major courses by the end of the summer quarter of their third year to be eligible to petition to declare the Psychobiology major.

Students who repeat more than two preparation courses or any preparation course more than once are denied admission to the major.

After satisfying the preparation for the major requirements, students need to petition to enter the major at the Undergraduate Advising Office.

## Requirements

### Preparation for the Major

*Required:* Psychology 10, 100A, 100B, and the Life Sciences Core Curriculum.

### Life Sciences Core Curriculum

*Required:* Chemistry and Biochemistry 14A, 14B, 14BL, 14C, and 14D, or 20A, 20B, 20L, 30A, 30AL, and 30B; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, and 3C, or 31A or 31AL, 31B, and 32A; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C.

## The Major

*Required:* (1) Ecology and Evolutionary Biology 100 or 129 or Psychology 118, and Psychology 110, 115 (or M117A, M117B, and M117C), M116A or 116B or Neuroscience 101L, 120A or 120B; (2) one course from Psychology 127A, 127B, 127C, 130, 133A through 133I, 135, 150, 161; (3) 16 units of graded elective courses from the following list: Ecology and Evolutionary Biology 112, 113A, 114A (no more than one from this group), Psychology 111, 112A through 112E, M117A, M117B, M117C, 119A through 119Y, 124K, 137A, 137G, 152, 161, 162, 164, M166, 186D, 191CH (only if content is approved by the undergraduate vice chair), Chemistry and Biochemistry 153A, 153L, Computational and Systems Biology M187, Ecology and Evolutionary Biology 100, 102, 105, 106, 110, 111, 115, 117, C119A, 120, 121, 122, 124A (only 4 units may be applied toward the major), 129, C135, 164, 170, Life Sciences 107, Microbiology, Immunology, and Molecular Genetics C185A, Molecular, Cell, and Developmental Biology 100, 104AL, 138, M140, CM156, Neuroscience 102, Physiological Science C130, C144, 146, 147, 166, 173.

### Honors Program

Students work for one year (fall through spring quarters) with a Psychology Department faculty sponsor on a research project that is the basis of a formal honors thesis. During that year they also participate in a weekly seminar (Psychology 191AH, 191BH, 191CH) in which thesis projects are presented and discussed and other topics of interest are explored with invited faculty members and other guests. Other requirements may apply.

## Policies

### Preparation for the Major

Each of the preparation for the major courses must be taken for a letter grade (C or better in Psychology 10, 100A, and 100B, C– or better in the remaining courses) with a 2.0 overall grade-point average.

Students cannot take Psychology 100B until they have passed course 100A with a grade of C or better. Psychology 100A and 100B should be taken early in the career; these courses are open only to students who have declared the Psychobiology pre-major before the term in which they plan to enroll. Students with no background in introductory statistics should take Statistics 10 before enrolling in course 100A.

### The Major

Students who complete Psychology M117A, M117B, M117C receive equivalent credit for course 115 and 10 units of upper-division psychobiology electives. All three courses must be completed to receive psychobiology elective credit.

Students must have a 2.0 grade-point average in all upper-division courses selected to satisfy major requirements, and each must be taken for a letter grade.



## Honors Program

Majors intending to continue study at the graduate level are encouraged to apply for the departmental honors program. Contact the [Undergraduate Advising Office](#) during spring quarter for more information and application forms. Satisfactory completion of the program and the other requirements for the major leads to awarding of the degree with honors or highest honors.

## Undergraduate Minors

### Applied Developmental Psychology Minor

The Applied Developmental Psychology (ADP) minor is designed to (1) provide a coherent, challenging academic program focused on investigating, understanding, and supporting the development of young children and their families, (2) teach undergraduate students how to apply theories, research methods, and research findings to practical concerns, and (3) prepare students to join or receive further training in various child-related professions.

### Admission

The minor is open to all enrolled UCLA students (including Cognitive Science, Psychobiology, and Psychology majors) who have an overall grade-point average of 2.0 or better and have applied and been accepted into the program. Qualified students are admitted into one of two annual cohorts (one beginning in fall, the other in spring) to complete three consecutive terms of specialized coursework alongside a hands-on teaching internship (86 hours per term) at one of several UCLA child care centers. For more information about applying to the minor, contact the [ADP academic coordinator](#) by e-mail or see the [department website](#). For questions about additional course requirements for the minor, contact a counselor in the Undergraduate Advising Office.

### The Minor

*Required Lower-Division Course (4 units):* Psychology 10.

*Required Upper-Division Courses (24 units):* Psychology 134A (must be taken concurrently with course 134D), 134B (must be taken concurrently with course 134E), and four additional courses from Education 120, 132, Psychology 127C, 129F, 130, 131, 132A, 132B, 133B through 133I, 134F, 134G, 134I, 134J, 134K, 161, 167, 199A or 199B (content must be approved by the Undergraduate Advising Office), Sociology M174. One of the four additional courses must include either Psychology 130 or one course from 133B through 133I.

*Internship Requirement/Fieldwork Component (8 units):* Psychology 134C, 134D (must be taken concurrently with course 134A), 134E (must be taken concurrently with course 134B). Students work as interns for three consecutive academic terms at one of several UCLA child care centers serving infants, toddlers, and/or preschool-age children. The internship pro-

vides hands-on experience working with young children and opportunities to closely observe children and teachers.

### Policies

No more than two courses may be applied toward both this minor and a student's major.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course, except for the fieldwork component of the internship courses, must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

### Cognitive Science Minor

The Undergraduate Council of the UCLA Academic Senate voted to suspend admissions to the Cognitive Science minor effective Fall Quarter 2021. Students currently in the minor are not affected by the admissions suspension.

The Cognitive Science minor is designed to introduce students to cognitive science topics as addressed in a number of different disciplines, such as biology, computer science, engineering, linguistics, mathematics, philosophy, and psychology, while allowing them to pursue a more in-depth study of cognitive science topics within specific areas of their own choice.

The minor consists of two parts. In the first part students complete background courses and satisfy a computer programming experience requirement. In the second part they select courses from three clusters of upper-division courses that have been organized to reflect different aspects of cognitive science. Students take five courses from three clusters, with no more than three courses from any one cluster.

### Admission

The minor is open to all enrolled UCLA students, other than Cognitive Science majors, who have an overall grade-point average of 2.0 or better. After completing two background courses, students must make an appointment with an adviser in the Psychology [Undergraduate Advising Office](#) by e-mail to declare the minor. The three background courses must be completed by the end of the summer quarter of the third year.

### The Minor

*Required Courses (32 units):* Psychology 85; one course from 15, 100B, Linguistics 1, or 20; and either Program in Computing 10A or Psychology 20A.

Students must complete five total courses from the following three clusters, with no more than three courses from any particular cluster: (1) *biological basis of cognition cluster*—Linguistics C135, Music Industry M103, Neuroscience 102, M145, C177, 180, 181, 182, Psychology 110, 112E, 115, M116A or 116B, M117C (or Molecular, Cell, and Developmental Biology M175C or Neuroscience M101C or Physiological Sci-

ence M180C), 119C, 119F, M119L, M119N, 137A, 137G, 161, M166; (2) *human cognition cluster*—Anthropology 124Q, 136A, Communication 129, Psychology 120A, 120B, 121, 124A through 124K, 133B, 133C, 133E, 186A through 186D; (3) *mind and language cluster*—Anthropology M150, Communication 118, 119, 126, M127, Linguistics 120A, 120B, 120C, 130, 132, C135, 185A, Philosophy 124, 125, 126, C127A, C127B, 129, 170, 172, Psychology 124A.

### Policies

No more than two courses may be applied toward both this minor and a student's major.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Psychology MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Psychology

### Lower-Division Courses

**10. Introductory Psychology. (4)** Lecture, four hours. General introduction including topics in cognitive, experimental, personality, developmental, social, and clinical psychology; six hours of psychological research and a grade of C or better required of all departmental premajors. P/NP or letter grading.

**15. Introductory Psychobiology. (4)** Lecture, three hours. Designed for nonmajors. Survey of genetic, evolutionary, physiological, pharmacological, and experiential factors affecting behavior. Using comparative approach where appropriate, emphasis on relevance of biological mechanisms to understanding of humans and their interaction with their environment. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20A. MATLAB Programming for Behavioral Sciences. (4)** Lecture, two hours; laboratory, one hour. Prior programming experience not required. Introduction to MATLAB and programming methods useful in experimental psychology. Reading and writing of code for conducting experiments, analyzing data, and modeling. P/NP or letter grading.

**20B. Advanced Topics in MATLAB Programming for Behavioral Sciences. (4)** Lecture, two hours; laboratory, one hour. Requisite: course 20A. Introduction of advanced topics in MATLAB programming for behavioral sciences, including Psychtoolbox, advanced MATLAB graphics and input/output, simulations and



modeling, and efficient MATLAB coding. Active programming during class and for homework required. P/NP or letter grading.

**30. Web Programming for Psychology. (4)** Lecture, one hour; laboratory, three hours. Introduction to core technologies of Internet, with focus on applications that collect and analyze data. Server side programming includes Perl and MySQL databases. Client-side programming includes HTML and JavaScript. P/NP or letter grading.

**85. Introduction to Cognitive Science. (4)** Lecture, three hours. Exploration of computer metaphor of mind as an information-processing system, focusing especially on perception, knowledge representation, and thought based on research in cognitive psychology, neuropsychology, and artificial intelligence. Many examples from visual information processing.

**88A. Lower-Division Seminar: Stress, Adaptation, and Coping. (4)** Seminar, three hours. Enforced requisite: course 10. Limited to freshmen. Physiological and psychological processes related to stresses and strains of daily living and potential relation of these processes to disease states. Examination of multifaceted nature of coping with stressors and exploration of strategies for stress management. May be repeated for credit. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics in Psychology. (4)** Seminar, three hours. Enforced requisite: course 10. Study of selected topics in psychology at introductory level; seminar format designed for freshmen/sophomores. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**100A. Psychological Statistics. (4)** Lecture, four hours. Requisites: course 10 with a grade of C or better, and one course from Mathematics 2, Program in Computing 10A, Statistics 10, or one term of calculus. Designed for premajors. Basic statistical procedures and their application to research and practice in various areas of psychology. P/NP or letter grading.

**100B. Research Methods in Psychology. (5)** Lecture, two hours; laboratory, two hours. Enforced requisites: courses 10 and 100A, with grades of C or better. Introduction to research methods and critical analysis in psychology. Lecture and laboratory topics include experimental and nonexperimental research methods, statistical design and analysis as applied to a broad range of basic and applied research issues. P/NP or letter grading.

**101. General Psychology Laboratory. (4)** Laboratory, four hours. Requisites: courses 10, 100A, 100B. General laboratory course for psychology students to acquire key concepts in psychology through active participation in enriched environment. Use of current technologies (e.g., Web-based teaching, interactive computer demonstrations) in challenging atmosphere to learn how mind works. P/NP or letter grading.

**M107. Asian American Personality and Mental Health. (4)** (Same as Asian American Studies M117.) Lecture, three hours. Requisite: course 10. Foundations of personality development and mental health among Asian Americans. Topics include culture, family patterns, achievements, stressors, resources, and immigrant and minority group status. P/NP or letter grading.

**110. Fundamentals of Learning. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 100A. Designed for juniors/seniors. Experimental findings on animal and human conditioning; retention and transfer of training; relation of learning and motivation. Intended to provide empirical basis for theory and research in this area. P/NP or letter grading.

**111. Learning Laboratory. (4)** Lecture, two hours; laboratory, three hours. Requisites: courses 10, 100A, 100B, 110. Designed for departmental majors. Laboratory experience with techniques in study of learning, especially with animals. Letter grading.

**112A. Basic Processes of Motivated Behavior. (4)** Lecture, 90 minutes; discussion, 90 minutes. Requisites: courses 10, 100A, 110. Designed for juniors/seniors. Examination of some basic processes underlying motivated behavior, stressing environmental determinants of behaviors such as feeding, drinking, and reproduction-related behavior. Discussion of physiological mechanisms that contribute to such behaviors. Consideration of topics such as reinforcement, acquired motivation, and drug addiction. Evaluation of evidence obtained in laboratory studies conducted with animals. P/NP or letter grading.

**112B. Psychobiology of Fear and Anxiety. (4)** Lecture, three hours. Requisites: courses 10, 100A, 110. Recommended: course 115. Designed for juniors/seniors. Presentation of biological and behavioral approaches to fear and anxiety, taken from laboratory and applied research. In addition to overview of major principles from each approach, emphasis on areas in which significant research advances have recently occurred. Examination of concordance and discordance between results from laboratory and applied research. P/NP or letter grading.

**112C. Psychobiology of Anxiety and Depression. (4)** Lecture, two and one half hours; discussion, 30 minutes. Requisites: courses 110 and 115, or Neuroscience M101A, M101B, and M101C. Limited to juniors/seniors. Presentation of biological and behavioral approaches to anxiety and depression, taken from laboratory and applied research. In addition to overview of major principles from each approach, emphasis on areas in which significant research advances have recently occurred. Examination of concordance and discordance between results from laboratory and applied research. P/NP or letter grading.

**112D. Animal Cognition. (4)** Lecture, 90 minutes; discussion, 90 minutes. Requisites: courses 10, 100A, 110. Designed for juniors/seniors. Investigation of scientific study of cognition and behavior in animals. Topics include perception and attention, working and reference memory, spatial cognition, timing and counting, concept formation, and abstract reasoning. Most discussions focus on laboratory findings with animals, as viewed from evolutionary framework concerned with natural histories of animals. P/NP or letter grading.

**112E. Decision Making and Brain. (4)** Lecture, three hours. Requisites: courses 10, 100A, 110. Designed for juniors/seniors. Survey of neural mechanisms of value-based decision making from perspective of neoclassical economics. Discussion of theoretical models of valuation and decision making from economics and application to psychological and neuroscience studies of learning and decision making. P/NP or letter grading.

**115. Principles of Behavioral Neuroscience. (4)** Lecture, three hours; discussion, one hour. Requisites: course 100A, Life Sciences 2 or 7A or 15. Not open to students with credit for course M117A (or Molecular, Cell, and Developmental Biology M175A or Neuroscience M101A or Physiological Science M180A). Designed for juniors/seniors. Nervous system anatomy, physiology, pharmacology, and their relationship to behavior. P/NP or letter grading.

**M116A. Behavioral Neuroscience Laboratory. (4)** (Formerly numbered 116.) (Same as Neuroscience M116A.) Lecture, one hour; laboratory, three hours. Requisites: courses 10, 100A, 100B, and 115, or Neuroscience M101A and M101B (M101B may be taken concurrently). Not open for credit to students with credit for course 116B. Designed for Psychobiology, Psychology, and Neuroscience majors. Laboratory experience with various topics in behavioral neuroscience. Hands-on experience with important methodology and experimental approaches in neuroscience. P/NP or letter grading.

**116B. Human Neuropsychology Laboratory. (4)** Laboratory, four hours. Requisites: courses 10, 100A, 100B, 115. Not open for credit to students with credit for 116A. Focus on human neural function in health and disease. Concentration on neural underpinnings of behaviors unique to humans. Hands-on empirical investigations of neural functions in which students themselves serve as subjects. Incorporation of neural bases of language and cognition, assessment in field of neuropsychology, and human neuroanatomy. Addresses disorders of nervous system that have profound impacts on human functioning such as stroke and central nervous system damage, dementia, mental illness, and pain. P/NP or letter grading.

**M117A. Neuroscience: From Molecules to Mind—Cellular and Systems Neuroscience. (5)** (Same as Molecular, Cell, and Developmental Biology M175A, Neuroscience M101A, and Physiological Science M180A.) Lecture, four hours; discussion, 90 minutes. Requisites: Chemistry 14C or 30A (14C may be taken concurrently), Life Sciences 7C, Physics 1B or 1BH or 5C or 6B. Students must receive grade of C– or better to proceed to next course in series. Cellular neurophysiology, membrane potential, action potentials, and synaptic transmission. Sensory systems and motor system; how assemblies of neurons process complex information and control movement. P/NP or letter grading.

**M117B. Neuroscience: From Molecules to Mind—Molecular and Developmental Neuroscience. (5)** (Same as Neuroscience M101B, Molecular, Cell, and Developmental Biology M175B, and Physiological Science M180B.) Lecture, four hours; discussion, 90 minutes. Requisites: course M117A (with grade of C– or better), Life Sciences 7C. Molecular biology of channels and receptors: focus on voltage dependent channels and neurotransmitter receptors. Molecular biology of supramolecular mechanisms: synaptic transmission, axonal transport, cytoskeleton, and muscle. Classical experiments and modern molecular approaches in developmental neurobiology. P/NP or letter grading.

**M117C. Neuroscience: From Molecules to Mind—Behavioral and Cognitive Neuroscience. (5)** (Same as Neuroscience M101C, Molecular, Cell, and Developmental Biology M175C, and Physiological Science M180C.) Lecture, four hours; discussion, 90 minutes. Requisites: course M117A with grade of C– or better. Neural mechanisms underlying motivation, learning, and cognition. P/NP or letter grading.

**118. Comparative Psychobiology. (4)** Requisite: course 115. Designed for junior/senior majors. Survey of determinants of species-specific behavior, including genetic influences and learning.

**119A. Neuropsychopharmacology of Emotion and Cognition. (4)** Lecture, three hours. Requisite: course 115 or M117C. Limited to juniors/seniors. Analysis of basic pharmacologic principles, with emphasis on neurochemical modulation of emotional regulation and cognitive processes in normal and diseased state. P/NP or letter grading.

**119B. How Brains Learn to Construct Models of Environment. (4)** Lecture, three hours. Requisite: course 115 or M117C. Designed for juniors/seniors. Every day we encounter something new. As result of these experiences, our brain builds cognitive models of our environment. This allows us to respond flexibly and efficiently when we encounter something similar in future. Discussion of types of models our brain builds that afford this flexible behavior, and how different regions of brain contribute in different ways to model building. Discussion of how different psychological

disorders can be accounted for by disruptions in this process, providing key neural targets for pharmacological treatments. P/NP or letter grading.

**119C. Cognitive Neuroscience. (4)** Lecture, three hours. Requisite: course 115 or M117C. Understanding complex mental functions depends on interplay of cognitive psychology and behavioral neuroscience. Designed to provide advanced undergraduate students with current perspectives on how complex processes of mind may be understood using neuroscience techniques. P/NP or letter grading.

**119F. Neural Basis of Behavior. (4)** Lecture, three hours. Requisite: course 115. Designed for juniors/seniors. Presentation of current data and theory concerning how neuron circuits produce behavior. Mechanisms of perception, response selection, motor pattern generation, learning, and motivation, with emphasis on operation of these processes in well-defined neural circuits in animals and humans. P/NP or letter grading.

**119I. Integration of Face and Brain. (4)** Seminar, three hours. Requisite: course 115 or M117C. Faces play major role in social interactions in both humans and nonhuman primates and in other animals as well. Exploration of neuroanatomical, neurophysiological, and neurofunctional underpinnings of face processing (attractiveness, emotional expressions, facial skin, identity recognition, based on empirical studies that use behavioral responses in neuroimaging techniques, in effects of types of brain damage, in physiological responses, and in psychopathological states. Discussion of evolutionary approaches to faces, as well as relationship between specific genetic mutations affecting both brain and facial appearance. P/NP or letter grading.

**119J. Brain Bugs: Understanding Brain through Its Flaws. (4)** Lecture, three hours. Requisite: course 115 or M117C. Designed for juniors/seniors. Psychology of brain flaws and limitations to understand how brain works by studying what it does well and understanding neuroscience of why brain is poorly suited to perform some tasks such as numerical calculations, memorizing lists and names, and making unbiased decisions. Topics include memory (types of memory, false memories, misinformation and memory, memory capacity) and cognitive biases (framing, anchoring, and temporal discounting). Exploration of underlying neural causes of brain flaws and limitations in context of brain's associative architecture. Basic neurophysiology, synaptic plasticity, cortical plasticity, neural basis of learning and memory, and some computational neuroscience. P/NP or letter grading.

**119K. Neurophilosophy. (4)** Lecture, three hours. Requisite: course 115. Philosophy of mind has relied on introspection and thought experiments to explore consciousness, self, and free will. Field of neurophilosophy employs findings and methods of neuroscience to investigate these seemingly impenetrable constructs. Provides students with foundation in neurophilosophy, which includes basic understanding of philosophy of mind, consideration of phenomena including consciousness, volition, and self, and examination of scientific methods available for studying these phenomena. Exploration of student experiences of world and themselves within and demonstrations of how alterations in brain functioning due to injury, psychedelic drugs, and dreaming result in alterations in these phenomena. P/NP or letter grading.

**M119L. Human Neuropsychology. (4)** (Same as Neuroscience M119L.) Lecture, three hours. Recommended requisites: courses 115 (or M117A and M117C), 120A or 120B. Designed for juniors/seniors. Survey of experimental and clinical human neuropsychology; neural basis of higher cognitive functions. P/NP or letter grading.

**119M. Neural Circuits of Learning and Memory. (4)** Lecture, three hours. Requisite: course 115. Designed for juniors/seniors. Introduction to classical and current literature on mechanisms of learning and memory from individual brain systems to circuits. P/NP or letter grading.

**M119N. Visual System. (4)** (Same as Neuroscience M119N.) Lecture, three hours. Requisite: course 115 or Neuroscience M101A or Physiological Science 111A. Ability to image and analyze visual world is truly remarkable feat. Coverage of anatomy and physiology

of visual processing from retina to visual cortex through lectures, extensive reading, and discussions. P/NP or letter grading.

**M119O. Psychology of Aging. (4)** (Same as Gerontology M119O.) Requisite: course 115. Designed for juniors/seniors. Aging refers to developmental changes occurring at end stages of life. Some alterations that occur represent improvement, others are detrimental. Examination of impact of aging process on mental phenomena and exploration of ways in which positive changes can be maximally utilized and impact of detrimental alterations minimized. P/NP or letter grading.

**119P. Emerging Topics in Neuroscience. (4)** Lecture, two hours; discussion, one hour. Requisite: course 115. Emerging advanced lecture topics in neuroscience given by visiting speakers, with additional lectures by instructor on relevant background material. Reading of published scientific articles. P/NP or letter grading.

**119Q. Psychobiology of Sleep and Dreams. (4)** Lecture, three hours. Requisite: course 115. Designed for juniors/seniors. Study of measurement of sleep, comparison of sleep in mammalian species and sleep in sub-mammalian species, circadian rhythms and circadian control of sleep, development and aging of sleep, brain anatomical and neurochemical control of sleep, effects of sleep deprivation, sleep in psychiatric disorders, human sleep disorders, and properties of dreams. P/NP or letter grading.

**119U. Neural Correlates of Psychotic Disorders. (4)** Lecture, three hours. Requisite: course 115. Designed for juniors/seniors. Exploration of genetic, cellular, structural, and functional abnormalities associated with psychotic states, including those seen in schizophrenia spectrum disorders, bipolar disorder, and drug-induced psychosis. Focus on common and unique neural findings associated with these abnormal states. Study includes review of clinical aspects of disorders covered. P/NP or letter grading.

**119V. Brain and Art. (4)** Lecture, three hours. Requisite: course 115. Multiple forms of art express uniqueness of human brain and mind. Discussion of neural underpinnings of art in artist and viewer and links to evolutionary, biological, aesthetic, cognitive, and social roots of art. P/NP or letter grading.

**M119X. Biology and Behavioral Neuroscience of Aging. (4)** (Same as Gerontology M119X.) Lecture, three hours. Designed for juniors/seniors. Biologic mechanisms of aging process and its terminal phase, death, have been increasingly studied in recent years. Establishment of what is known experimentally about biology and behavioral neuroscience of aging and evaluation of theories developed to account for this knowledge. P/NP or letter grading.

**119Y. Psychobiology of Sexual Behavior. (4)** Lecture, three hours. Requisite: course 115. Broad overview of scientific study of sexual behavior, with emphases on evolutionary, biological, psychological, and social considerations. Topics include historical antecedents of sex research, evolution of sex, influence of sex hormones on brain and behavior, sexual development, and roles of genes and hormones on sexual orientation. P/NP or letter grading.

**120A. Cognitive Psychology. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 100A. Designed for juniors/seniors. Survey of cognitive psychology: how people acquire, represent, transform, and use verbal and nonverbal information. Perception, attention, imagery, memory, representation of knowledge, language, action, decision making, thinking. P/NP or letter grading.

**120B. Sensation and Perception. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 100A. Designed for juniors/seniors. Acquisition of information about physical world through basic sensory mechanisms and perceptual processes. Perception of objects, surfaces, space, motion, and events. Connections between information, computations, and biological mechanisms in vision, audition, and other systems. P/NP or letter grading.

**121. Laboratory in Cognitive Psychology. (4)** Laboratory, four hours. Requisites: courses 10, 100A, 100B, 120A or 120B. Designed for Psychology and Cognitive

Science majors. Laboratory experience with methods and phenomena from research on human perception, memory, and cognition. P/NP or letter grading.

**124A. Language as Cognitive Science. (4)** Lecture, three hours. Requisites: courses 100A, 100B, one programming course. Designed for junior/senior Cognitive Science majors. What mental mechanisms allow humans to transfer thoughts across minds through language? Through discussions and experiments, evaluation of behavioral, modeling, and neuroscientific data elucidating component processes of language system and its place within architecture of mind. P/NP or letter grading.

**124B. Fundamentals of User Experience. (4)** Lecture, four hours. Requisite: course 120A or 120B. Designed for juniors/seniors. Thorough introduction to core principles and methods in field of user experience research and design. This relatively new discipline has evolved as psychologists and designers have begun to place greater focus on understanding and anticipating needs of humans using their products. P/NP or letter grading.

**124C. Human Memory. (4)** Lecture, two hours; discussion, one hour. Requisite: course 120A or 120B. Designed for juniors/seniors. Analysis of recent research on basic processes and structural components that comprise the human memory system. Discussion topics include practical implications of such research for instruction, marketing, and witness testimony. P/NP or letter grading.

**124D. Consciousness: Current Debates. (4)** Seminar, three hours. Requisites: courses 100B, 115. Designed for juniors/seniors. Review of current issues in research on cognitive neuroscience of consciousness, with focus on modern theories of conscious perception, especially in visual modality so as to reflect its dominance in consciousness research. P/NP or letter grading.

**124F. Thinking. (4)** Lecture, three hours. Requisite: course 120A or 120B. Analysis of experimental studies of human categorization, reasonings, decision making, problem solving, creativity, and related topics. P/NP or letter grading.

**124G. Cognition and Successful Aging. (4)** Lecture, three hours. Requisite: course 120A or 120B. Discussion of cognitive, social, and emotional changes that happen with age, how people live and learn, focus on what is important, achieve balance, and get better with age. Topics include happiness, memory, brain training, use of emerging technology, wisdom, humor, habits, retirement, and what constitutes successful aging. P/NP or letter grading.

**124J. Perception, Learning, and Learning Technology. (4)** Seminar, three hours. Requisite: course 120A or 120B. Aspects of perception and cognition as they relate to learning and potential for learning technology. Basic knowledge about visual information processing, perceptual learning, knowledge representation, pattern recognition, attention, memory, and expertise, as well as research on learning, technology, and applications of perceptual and cognitive concepts in specific domains, with special focus on teaching and learning in mathematics. P/NP or letter grading.

**124K. Ethical, Legal, and Societal Implications of Cognitive Neuroscience. (4)** Lecture, three hours. Requisite: course 120A or 120B. Designed for juniors/seniors. Critical examination of current and potential use of neuroimaging data in legal system as means to assess memories, truthfulness, culpability, and probability of future criminal behavior. Consideration of personal and societal consequences of use of cognitively enhancing drugs, memory dampening techniques, brain stimulation, and neural prostheses. Students debate range of current topics. P/NP or letter grading.

**126. Clinical Psychology Laboratory. (4)** Laboratory, four hours. Requisites: courses 10, 100A, 100B, and 127A or 127B or 127C. Designed for departmental majors. Methods, designs, and issues in conduct of clinical psychology research. Students develop and conduct research. Content varies by instructor, with concentration on one of following: schizophrenia, mood disorders, anxiety disorders, childhood disorder

ders, psychophysiological methods, observational methods with couples and families. P/NP or letter grading.

**127A. Clinical Psychological Science. (4)** Lecture, three hours; discussion, one hour. Requisite: course 10. Not open for credit to students with credit for course 127B or 127C. Study of psychological disorders (e.g., depression, anxiety, substance use disorders, schizophrenia) across lifespan, including role of biological, behavioral, social, cognitive, and cultural factors, diagnosis and treatment approaches. Discussion of Stigma and practices that support inclusiveness. P/NP or letter grading.

**127B. Abnormal Psychology: Biological Bases. (4)** Lecture, three hours; discussion, one hour. Requisite: course 10. Not open for credit to students with credit for course 127A or 127C. Study of Biological processes involved in etiology, presentation, and course of psychiatric disorders, and biological targets or mechanisms of treatment. Emphasis on clinical neuroscience and behavioral genetics as scientific modalities to understand mood disorders, substance use disorders, psychosis, and others. P/NP or letter grading.

**127C. Abnormal Psychology: Developmental Perspectives. (4)** Lecture, three hours; discussion, one hour. Requisite: course 10. Not open for credit to students with credit for course 127A or 127B. Study of abnormal child development from infancy through adolescence and early adulthood. Clinical disorders include behavioral disorders, depression/anxiety, alcohol/substance disorders, eating disorders, and autism spectrum disorder. P/NP or letter grading.

**129C. Culture and Mental Health. (4)** Lecture, two hours; discussion, one hour. Requisites: courses 10, 100A. Introduction to study of culture and human behavior in general, and culture and mental health in particular. Emphasis on cultural groups that comprise major U.S. ethnic groups (i.e., African Americans, Latinos/Chicanos, Asian Americans, and American Indians). P/NP or letter grading.

**129E. Human Sexuality. (4)** Lecture, three hours. Designed for senior Psychology majors. Overview of psychology of human sexuality. Psychological research, assessment, and therapy described in a format which highlights their significance for understanding human sexual functioning. Psychological mechanisms underlying expression of human sexuality. P/NP or letter grading.

**129F. Clinical Psychology of Childhood and Adolescence. (4)** Lecture, two hours; discussion, one hour. Requisite: course 127A or 127B or 127C. Survey of child and adolescent psychopathology and psychotherapy from a developmental perspective. Coverage includes such conditions as anxiety disorders, depression, conduct and attention problems, eating disorders, and autism, with information on prevalence, causes, common treatments and their effects. P/NP or letter grading.

**130. Developmental Psychology. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 100A. Designed for juniors/seniors. Elaboration of developmental aspects of physical, mental, social, and emotional growth from birth to adolescence. P/NP or letter grading.

**131. Research in Developmental Psychology. (4)** Discussion, one hour; laboratory, three hours. Requisites: courses 10, 100A, 100B, and 130 or one course from 133A through 133I. Designed for Psychology and Cognitive Science majors. Forms of scientific writing; ethics of research, especially with minors; special advantages and problems of asking developmental research questions; relevant methodologies for experimental and observational work; data analyses and data presentation options. P/NP or letter grading.

**132A. Learning Problems, Schooling Problems: Policy and Practice. (4)** Lecture, three hours. Designed for juniors/seniors. Exploration of different orientations to persons with learning problems, emphasizing assessment and intervention approaches and psychological impact of such approaches. Topics include interaction of learner and environment, sociopolitical na-

ture of classroom, psychological impact of schooling, grades, and evaluations, process versus goal focus in learning. P/NP or letter grading.

**132B. Mental Health in Schools: Policy and Practice. (4)** Seminar, three hours. Limited to juniors/seniors. Policies, models, and mechanisms for mental health in schools. Psychopathology placed into broader perspective of normal development and psychosocial problems to explore range of theoretical, practical, and ethical issues. P/NP or letter grading.

**133A. Adolescent Development. (4)** Lecture, three hours. Requisites: courses 10, 100A. Examination of cognitive, social, physical, and physiological development of the adolescent. P/NP or letter grading.

**133B. Cognitive Development. (4)** Lecture, three hours. Requisites: courses 10, 100A. Major theories, approaches, and issues in study of cognitive development. Readings include original research on important topics such as development of perception, language, thinking, and problem solving, and acquisition of concepts and domain-specific language. P/NP or letter grading.

**133C. Language Development. (4)** Lecture, three hours. Requisites: courses 10, 100A. Application of principles of cognitive development, learning, and perception to study of language development. Topics include first and second language acquisition (sounds, meanings, grammatical structures), learning mechanisms, communication skills, and relation between language and thought in children. P/NP or letter grading.

**133D. Social and Personality Development. (4)** Lecture, three hours. Requisites: courses 10, 100A. Theory and research on social and personality development during childhood. Topics include parent/child attachment, temperament, self-control, aggression, sex-typing, self-concept, moral reasoning and behavior, social status and social skills, and peer group relations. P/NP or letter grading.

**133E. Perceptual Development. (4)** Lecture, three hours. Requisites: courses 10, 100A. Topics include origins and development of human perceptual abilities, origins of knowledge about functionally important aspects of the environment, ecological and computational issues in perception, research and theory about initial perceptual capacities, and some sensory foundations. P/NP or letter grading.

**133F. Psychology and Education. (4)** Lecture, three hours. Requisites: courses 10, 100A. Application of principles of cognitive development, learning, and perception to educational problems. Topics include general instructional issues, psychology of reading and mathematics, exceptional children, early childhood education, and education of the disadvantaged. P/NP or letter grading.

**133G. Culture and Human Development. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 100A. Role of culture in human development through psychology, anthropology, and autobiography. Students relate material from lectures and readings, through empirical research projects, to diverse cultural backgrounds in class, at UCLA, and in the broader community. P/NP or letter grading.

**133I. Applied Developmental Psychology. (4)** Lecture, three hours. Requisites: courses 10, 100A. Application of developmental psychology to issues pertaining to improving well-being of children and their families. Topics include quality of child care, patterns and ranges of normal child behaviors, developmental disabilities, safety, legal, and public policy issues, child-rearing practices. P/NP or letter grading.

**134A. Applied Developmental Psychology: Infant/Toddler Care and Education. (4)** Lecture, three hours. Designed for Applied Developmental Psychology minors. Coverage of children zero to three years old. Topics include physical, cognitive, social, and emotional development of children, developmentally appropriate practices, child care quality, role of educator/caregiver, and other related issues. Letter grading.

**134B. Applied Developmental Psychology: Preschool/School-Age Care and Education. (4)** Lecture, three hours. Designed for Applied Developmental Psychology minors. Coverage of children three to eight years old. Topics include physical, cognitive, social, and emotional development of children, develop-

mentally appropriate practices, child care quality, role of educator/caregiver, and other related issues. Letter grading.

**134C. Advanced Applied Developmental Psychology. (4)** Seminar, one hour; fieldwork, eight hours. Requisites: courses 134A, 134B, 134D, 134E. Designed for Applied Developmental Psychology minors. Continuing fieldwork in advanced applications of developmental psychology to support and illustrate, in applied setting, theories and research findings presented in lecture. P/NP grading.

**134D. Fieldwork in Applied Developmental Psychology. (2)** Fieldwork, 86 hours per term. Enforced corequisite: course 134A. Designed for Applied Developmental Psychology minors. Fieldwork in applications of developmental psychology to support and illustrate, in applied setting, theories and research findings presented in lecture. P/NP grading.

**134E. Advanced Fieldwork in Applied Developmental Psychology. (2)** Fieldwork, 86 hours per term. Enforced corequisite: course 134B. Designed for Applied Developmental Psychology minors. Fieldwork in advanced applications of developmental psychology to support and illustrate, in applied setting, theories and research findings presented in lecture. P/NP grading.

**134F. Infant Care and Development. (4)** Lecture, three hours. Requisites: course 10, one course from 130 or 133B through 133I, one statistics course. In-depth study of research methods, current research findings, and theories used to understand infant development from conception through second year of life, including cross-cultural application of this knowledge to various populations. P/NP or letter grading.

**134G. Early Childhood Curriculum. (4)** Lecture, three hours. Requisites: course 10, one course from 130 or 133B through 133I, one statistics course. Examination of methods, materials, and philosophies that enhance development of children in context of childcare settings. Topics include issues of multiculturalism, antitibias curriculum, and special needs adaptations. P/NP or letter grading.

**134I. Child, Family, and Community. (4)** Lecture, three hours. Requisites: course 10, one course from 130 or 133B through 133I, one statistics course. Exploration of role of early childhood educators within context of diverse racial, ethnic, economic, and cultural backgrounds and impact of these dynamics on children's development. P/NP or letter grading.

**134J. Dynamic Perspectives on Parenting. (4)** Lecture, three hours. Overview of key tasks of parenting and of changes in parent-child relationship from birth through young adulthood. Overview of theories, discussion of transition to parenthood, and examination of parenting across developmental stages. Examination of how parenting and parent-child relationship are affected by family dynamics and contextual factors. Study of effective child socialization techniques and their theoretical and empirical foundations to meet children's developmental needs; build positive and mutually respectful parent-child relationships; and provide positive guidance to promote self-regulation, competence, and socially responsible behavior. P/NP or letter grading.

**134K. Effects of Early Adversity and Trauma. (4)** Lecture, three hours. Examination of extensive evidence of disruptive impact of early adversity. Study offers insights into causal mechanisms that link early adversity to later impairments in learning, behavior, and both physical and psychological well-being. Review of research on common childhood stressors, individual and contextual factors that put children at risk for developmental deficits, and protective factors that promote successful coping and healthy adjustment. P/NP or letter grading.

**135. Social Psychology. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 100A. Designed for juniors/seniors. Interrelationships between the individual and his social environment. Social influences on motivation, perception, and behavior. Development and change of attitudes and opinions. Psychological analysis of small groups, social stratification, and mass phenomena. P/NP or letter grading.

**136A. Social Psychology Laboratory. (4)** Lecture, one hour; laboratory, four hours. Prerequisites: courses 10, 100A, 100B, 135. Designed for Psychology majors. Introduction to research designs and methods used to test social psychological hypothesis, including experiments, observation, content analysis, and/or questionnaires. P/NP or letter grading.

**136B. Nonexperimental Methods in Social Psychology. (4)** Lecture, two hours; laboratory, two hours. Prerequisites: courses 10, 100A, 100B, 135. Designed for Psychology majors. Research experience with nonexperimental methods for study of social attitudes or behavior, including fieldwork with survey research, naturalistic observation, or questionnaires. P/NP or letter grading.

**M136C. Experiments in Racial and Ethnic Politics. (4)** (Same as Political Science M183.) Lecture, three hours; laboratory, one hour. Research practicum consisting of designing, analyzing, and reporting effective research results. Topics include studying people's political attitudes, beliefs, and behaviors through carefully-designed experiments. P/NP or letter grading.

**137A. Neuroscience of Social Perception. (4)** Lecture, three hours. Prerequisites: courses 10, 100A. Limited to juniors/seniors. Integration of cognitive neuroscience, social psychology, and sensory perception research to explore how social information is perceived and how social factors shape perception of world around us. Emphasis on neural mechanisms underlying these phenomena. P/NP or letter grading.

**M137B. Nonverbal Communication and Body Language. (4)** (Same as Communication M113.) Lecture, three hours. Examination of how various forms of nonverbal communication convey meaningful information to perceivers, with focus on both production and perception of multiple communication formats (e.g., affect expression of face and body, gesture, and kinematics), with strong emphasis on body language. Readings from variety of related fields. P/NP or letter grading.

**137C. Intimate Relationships. (4)** Lecture, three hours. Prerequisites: courses 10, 100A. Limited to juniors/seniors. Introduction to how social scientists think about, study, and treat intimate relationships, with emphasis on understanding how relationships change over time. Topics include attraction, relationship formation, conflict resolution, social support, sex, role of individual differences, and external circumstances. P/NP or letter grading.

**137D. Psychology of Diversity. (4)** Lecture, three hours. Prerequisites: course 10. Designed for juniors/seniors. Examination of how culture, socioeconomic class, ethnicity, gender, and other group differences are created, perceived, and maintained. Emphasis on how scientific evidence informs approaches to contemporary problems including management of diverse workforce, immigrant integration, racial tensions, and health/educational disparities. P/NP or letter grading.

**M137E. Work Behavior of Women and Men. (4)** (Same as Gender Studies M137E.) Lecture, two and one half hours. Prerequisite: course 10 or Gender Studies 10. Designed for seniors. Examination of work behavior of women and men. Topics include antecedents of career choice, job findings, leadership, performance evaluation, discrimination and evaluation bias, job satisfaction, and interdependence of work and family roles. P/NP or letter grading.

**M137E. Work Behavior of Women and Men. (4)** (Same as Gender Studies M137E.) Lecture, two and one half hours. Prerequisite: course 10 or Gender Studies 10. Designed for seniors. Examination of work behavior of women and men. Topics include antecedents of career choice, job findings, leadership, performance evaluation, discrimination and evaluation bias, job satisfaction, and interdependence of work and family roles. P/NP or letter grading.

**137F. Introduction to Cultural Psychology. (4)** Lecture, three hours. Examination of sociocultural sources of diversity in psychological self, emotion, motivation, development, and relationships. Broad survey of how ideas and practices associated with various regions of world, social class, race/ethnicity, gender, and religion construct, maintain, and change psychological experiences and tendencies. Focus on theory and research

in field of cultural psychology. Discussions on how material covered relates to everyday life and real-world social issues. P/NP or letter grading.

**137I. Social Influence. (4)** Lecture, three hours. Prerequisite: course 10. Study of theory and research that addresses influence and persuasion from social psychological perspective. Particular attention given to reviewing theory and empirical research on conformity, compliance, and obedience. Covers attitudes and their measurement, factors that make persuasive messages effective in changing attitudes, social influence online, cross-cultural influence, and resisting persuasion and influence attempts. Application of findings from social influence literature to understanding influence processes in various social contexts. P/NP or letter grading.

**137J. Self and Identity. (4)** Seminar, three hours. Prerequisite: course 10. Designed for juniors/seniors. Examination of theory and research that addresses self from social psychological perspective. Topics focus on self-knowledge, how self is represented in memory, illusions about self, self-esteem, implicit (subconscious) self, self-regulation, social comparison, self-relevant emotions, and influence of culture on self. P/NP or letter grading.

**137K. Psychology of Emotion. (4)** Lecture, three hours. Designed for junior/senior psychology majors. Broad overview of science of human emotion. Covers topics such as history of emotion research, current dominant models of emotion, purpose of facial expressions, experience of emotions in our closest social relationships, how we regulate our emotions, whether emotions can make us sick, and what it means to be happy. Exploration of range of perspectives in psychology, ranging from social, cultural, developmental, health, and clinical psychology. Consideration also of cognitive and behavioral neuroscience. P/NP or letter grading.

**M137M. Social Cognition. (4)** (Same as Communication M123.) Lecture, three hours. Survey of research from field of social cognition, with emphasis on understanding cognitive processes involved in interpersonal and intergroup communication. Topics include attention, interpretation, evaluation, judgment, attribution, and memory processes. Consideration of both controlled and automatic processes. Discussion of roles of motives, goals, and affective variables. P/NP or letter grading.

**M138. Electoral Politics: Political Psychology. (4)** (Same as Political Science M141A.) Lecture, three or four hours; discussion, one hour (when scheduled). Prerequisite: course 10. Designed for juniors/seniors. Examination of political behavior, political socialization, personality and politics, racial conflict, and psychological analysis of public opinion on these issues.

**M139. Perspectives on Autism and Neurodiversity. (4)** (Same as Disability Studies M139.) Seminar, three and one half hours. Genealogy of autism as diagnostic category and cultural phenomenon from its historical roots as new, rare, and obscure condition in early 1940s to its current contested status as minority identity and/or global epidemic. Examination of material sourced from various fields and disciplines invested in autism, including psychology, neuroscience, arts and humanities, popular media, anthropology, activism, and critical autism studies. Students encounter and analyze multiple perspectives on autism and put them in conversation with one another. Attention paid to way people on spectrum define, explain, and represent their own experiences of autism and discussion of what ramifications of these multiple framings are in context of autism intervention strategy and disability policy today. Letter grading.

**M140. Introduction to Study of Aging. (4)** (Same as Social Welfare M140.) Lecture, three hours. Designed for juniors/seniors. Perspectives on major features of human aging—biological, social, psychological, and humanistic. Introduction to information on range of influences on aging to prepare students for subsequent specialization. P/NP or letter grading.

**142H. Advanced Statistical Methods in Psychology (Honors). (4)** Lecture, three hours; laboratory, two hours. Prerequisites: courses 100A, 100B. Survey of statistical techniques commonly used in psychology, ed-

ucation, and behavioral and social sciences: correlational techniques, analysis variance, and multiple regression. P/NP or letter grading.

**M144. Measurement and Its Applications. (4)** (Same as Statistics M154.) Lecture, three hours. Prerequisite: one course from 100A, Statistics 10, 12, or 13. Selected theories for quantification of psychological, educational, social, and behavioral science data. Classical test, factor analysis, generalizability, item response, optimal scaling, ordinal measurement, computer-adaptive, and related theories. Construction of tests and measures and their reliability, validity, and bias. P/NP or letter grading.

**M147A. Psychology of Lesbian Experience. (4)** (Same as Gender Studies M147A and Lesbian, Gay, Bisexual, Transgender, and Queer Studies M147A.) Lecture, two hours; discussion, one hour. Prerequisite: course 10 or Gender Studies 10 or Lesbian, Gay, Bisexual, Transgender, and Queer Studies M114. Designed for juniors/seniors. Review of research and theory in gender studies and psychology to examine various aspects of lesbian experience, impact of heterosexism/stigma, gender role socialization, minority status of women and lesbians, identity development within a multicultural society, changes in psychological theories about lesbians in sociohistorical context. P/NP or letter grading.

**M149. Language Development and Socialization. (4)** (Same as Anthropology M152P.) Lecture, three hours; discussion, one hour (when scheduled). Exploration of processes through which children learn structures and practices of language and become competent participants in linguistic and social worlds around them. Examination of language use and socialization over childhood, across communities of practice, and across different ethnic and socioeconomic groups. Bridges work from anthropology, psychology, linguistics, and cognitive science. Topics include cross-cultural perspectives on child development and wide range of methodological approaches. Examination of ways in which language development and socialization interface with culture, modality, inequality, education, and cognition. P/NP or letter grading.

**150. Introduction to Health Psychology. (4)** Lecture, three hours. Prerequisite: course 10. Areas of health, illness, treatment, and delivery of treatment that can be elucidated by understanding of psychological concepts and research, psychological perspective on these problems, and how psychological perspective might be enlarged and extended in medical area. P/NP or letter grading.

**151. Research Methods in Health Psychology. (4)** Laboratory, four hours. Enforced prerequisites: courses 10, 100A, 100B, 150. Research methods used in health psychology, including experimental, quasi-experimental, and nonexperimental methods. Examples and projects from health psychology. P/NP or letter grading.

**152. Mind-Body Interactions and Health. (4)** Lecture, three hours. Designed for junior/senior Psychology and Psychobiology majors. Examination of bidirectional interactions between mind and body and how these interactions influence physical health. Topics include impact of stress, emotions, personality, and social world on biological systems and health. Discussion of mind-body interventions designed to reduce stress and improve health, including scientific research on yoga and meditation. P/NP or letter grading.

**161. Behavior and Brain Development. (4)** Lecture, three hours. Prerequisites: courses 10, 100A. Limited to juniors/seniors. Exploration of relationship between brain development and behavior. Examination of how cognitive neuroscience can inform study of development and how developmental approach can advance progress in cognitive and developmental sciences. P/NP or letter grading.

**162. Psychology of Addiction. (4)** Lecture, three hours; discussion, one hour (when scheduled). Survey of topics covering psychological and neurobiological theories of addiction, pharmacological effects of drugs and abuse, etiology, assessment, diagnosis, and treatment. P/NP or letter grading.



**164. Puberty and Sleep. (4)** Lecture, three hours. Requisite: course 10. Limited to juniors/seniors. Exploration of how normative biological and hormonal changes during adolescence influence adolescent behavior and well-being. Focus specifically on puberty and sleep, which both lead to consequential effects on behavior, health, and brain development. P/NP or letter grading.

**M165. Psychology of Gender. (4)** (Same as Gender Studies M165.) Lecture, three hours. Consideration of psychological literature relevant to understanding contemporary sex differences. Topics include sex-role development and role conflict, physiological and personality differences between men and women, sex differences in intellectual abilities and achievement, and impact of gender on social interaction. P/NP or letter grading.

**M166. Neurobiology of Bias and Discrimination. (4)** (Same as Neuroscience M187 and Physiological Science M106.) Lecture, four hours. Limited to junior/senior neuroscience, physiological science, and psychology students. Exploration of aspects of mammalian brain function that generate preference, bias, and discrimination. Consideration of research at multiple levels of analysis from genetics to neural circuits to behavior. Discussion of societal implications of these research findings, including their relevance to public policies and criminal justice system. Letter grading.

**167. Digital Media and Human Development. (4)** Lecture, three hours. Designed for junior/senior majors. Examination of social science research on media and technology during development to understand positive and negative roles of technology and media in children's lives. Topics include social media, video games, brain development, and learning with technological tools from age 2 through 18 (and through emerging adulthood). May be repeated for credit. P/NP or letter grading.

**168. Organizational Psychology. (4)** Lecture, three hours. Introduction to variety of topics within field of organizational psychology, examining organizational behavior from variety of perspectives. Focus on individuals: what motivates them, how do they learn best, how can they manage their careers in this rapidly changing organizational landscape, and how can they develop leadership skills. Focus on groups, entire organizations, or relationships between organizations and external environment: what makes some groups work effectively and some not, how can organizations be sensitive to diversity and inclusion in workplace, what trends and forces have impact on organizations today, and what are best ways to bring about change in organizations. P/NP or letter grading.

**M172. Afro-American Woman in U.S. (4)** (Same as African American Studies M172 and Gender Studies M172.) Lecture, two and one half hours. Designed for juniors/seniors. Impact of social, psychological, political, and economic forces which impact on interpersonal relationships of Afro-American women as members of large society and as members of their biological and ethnic group. P/NP or letter grading.

**M174. Health Disparities. (4)** (Same as Life Sciences M174.) Lecture, three hours. Examination of health disparities and ways in which societal responses to race and ethnicity in combination with variety of other factors create differential quality and access to health-care resulting in poor health outcomes in racial/ethnic minorities. Basic foundation for critical thinking about assumptions that shape life sciences, medical research, clinical practice, and social and behavioral sciences as they relate to racial and ethnic minority populations and to teach students to integrate concepts of culture and health disparities into other social, biological, political, psychological, genetic, and clinical health interests. P/NP or letter grading.

**175. Community Psychology. (4)** Designed for junior/senior Psychology majors. Application of psychological principles to understanding and solution of community problems. Topics include community development, community mental health problems, drugs, racism, and rehabilitation of prisoners.

**M176SL. Addressing Social Determinants in Racial/Ethnic Minority Communities to Reduce and Prevent Health Disparities. (4)** (Same as Community Engagement and Social Change M175SL.) Seminar, two hours; fieldwork, 10 hours. Examination of how addressing social determinants in racial/ethnic minority communities can reduce or eliminate physical and mental health disparities. Currently in racial and ethnic minority communities, health status of individuals can be function of built environment, exposure to pollutants and toxins, scarcity of supermarkets or stores with fresh produce and nutritional food, noise levels, and variety of other stressors and unhealthy conditions. Health interventions are often focused on individual-level change or increases in access to health-care with little in way of changing risk environments. Designed to identify and provide opportunities to understand how to address social determinants related to negative health outcomes in racial/ethnic minority neighborhoods and communities and to experience how to use social determinants literature in service of collaborative activities with community organizations. P/NP or letter grading.

**177. Counseling Relationships. (4)** Lecture, two hours; discussion, two hours. Requisites: courses 10, 100A, and 127A or 127B or 127C. Designed for junior/senior Psychology majors. Conceptual and empirical foundations of psychological counseling; comparison of alternative models of counseling processes. Emphasis on counseling approaches in community mental health areas such as drug abuse, suicide prevention, and crisis intervention. P/NP or letter grading.

**182A-182B-182C. Principles of Research in Relationship Science. (1-1-1)** Seminar, one hour. Introduction to research foundation of relationship science (e.g., leading theories, common measures and research designs, key statistics). Students learn important professional skills in conducting research and in applying to graduate school. P/NP grading.

**184A-184B. Psychology Research Opportunity Program Seminars. (2-2)** Seminar, 90 minutes. Designed to bring together Psychology Research Opportunity Program (PROPS) students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. P/NP grading.

**185. Research Practicum in Psychology. (3)** Laboratory, seven hours. Corequisite: course C194D. Limited to juniors/seniors. Practical applications of psychology through research under guidance of faculty mentor. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**186A. Cognitive Science Laboratory: Introduction to Theory and Simulation. (4)** Laboratory, four hours. Requisites: courses 10, 85, 100A, 100B, Program in Computing 10A, 10B. Designed for junior/senior departmental majors. Models of cognition within framework of explanation at multiple levels of abstraction. Examples of elementary models in multiple psychological domains (e.g., visual perception, categorization, learning, reasoning, and problem solving). Types of models include neural networks and symbolic models. Lectures and discussions interwoven with computer simulations written in MATLAB. P/NP or letter grading.

**186B. Cognitive Science Laboratory: Neural Networks. (4)** Laboratory, four hours. Requisites: courses 10, 85, 100A, 100B, Mathematics 31A, 31B, Program in Computing 10A, 10B. Designed for junior/senior departmental majors. Laboratory experience in neural network modeling of perception and cognition. Specific topics include essential neurophysiology, basic architectures, learning, and programming techniques. Principles illustrated and discussed in context of models of specific perceptual and cognitive processes. Simulations written in Pascal. P/NP or letter grading.

**186C. Cognitive Science Laboratory: Psychophysical Theories and Methods. (4)** Lecture, two hours; laboratory, two hours. Requisites: courses 10, 85, 100A, 100B. Designed for junior/senior departmental majors. Lectures and laboratory work that examine perceptual measurement procedures (psychophysical methods) and cognitive processing and decision models on which procedures are based, with particular emphasis on signal detection theory and its applications. Letter grading.

**186D. Laboratory in Functional Neuroimaging. (4)** Laboratory, four hours. Enforced requisites: courses 10, 100A, 100B. Limited to departmental majors. Introduction to study of brain with functional resonance imaging (fMRI). All major aspects to be discussed, from physical basis of MR signal to data analysis. Letter grading.

**188A. Special Seminars: Psychology. (4)** Seminar, three hours. Limited to juniors/seniors. Departmentally sponsored experimental or temporary seminars on selected topics in psychology, such as those taught by visiting faculty members. Reading, discussion, and development of culminating project. May be repeated for credit. P/NP or letter grading.

**188B. Special Courses in Psychology. (4)** Lecture, three hours. Designed for junior/senior majors. Departmentally sponsored experimental or temporary courses on topics of psychological interest, such as those taught by visiting faculty members. Consult Schedule of Classes for topics and instructors. May be repeated for credit. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Psychology. (1)** Seminar, one hour. Designed to bring together students undertaking supervised tutorial research in seminar setting with one or more faculty members to discuss their own work or related work in discipline. Led by one supervising faculty member. May be repeated for credit. P/NP grading.

**191. Variable Topics Research Seminars: Psychology. (1)** Seminar, one hour. Limited to juniors/seniors. Research seminar on selected topics in psychology. Reading, discussion, and development of culminating project. May be repeated for credit. P/NP grading.

**191AH-191BH-191CH. Departmental Honors Research Seminars. (2–2–2)** Seminar, two hours. Enforced corequisite: course 198. Course 191AH is requisite to 191BH, which is requisite to 191CH. Limited to psychology honors program students. Opportunity for development and analysis of creative ideas through individual research projects with faculty sponsor and discussion of student and faculty research presentations. Information and applications may be obtained from Undergraduate Advising Office, 1531 Franz Hall. If approved in advance by Undergraduate Office, courses 191CH and 198 may be applied toward elective course requirement for any Psychology Department major. Letter grading.

**192. Education Practices in Psychology. (4)** Seminar, three hours. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students to assist in courses related to psychology. Students assist in preparation of materials and development of innovative programs under guidance of faculty members and teaching assistants. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**193. Journal Club Seminars: Psychology. (1)** Seminar, one hour. Limited to undergraduate students. Discussion of readings selected from current literature of particular field or attendance at and write-ups of speakers series. May be repeated for credit. P/NP grading.

**194A. Internship Seminars: Psychology. (2)** Seminar, two hours. Corequisite: course 195A. Forum to discuss internship experiences and learn about career development. Students are exposed to professional literature in clinical science and related fields. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. Individual contract required. P/NP grading.

**194B. Research Group Seminars: Psychology. (1)** Seminar, one hour. Corequisite: course 196A (3-unit option). Limited to juniors/seniors who are part of research group. Discussion of research methods and current literature in field or of research of faculty members or students. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**194C. Research Group Seminars: Cognitive Science. (1)** Seminar, one hour. Corequisite: course 196B (3-unit option). Limited to junior/senior Cognitive Science majors who are part of research group. Discussion of research methods and current literature in field or of research of faculty members or students. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May be applied toward course requirements for Cognitive Science major. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**C194D. Research Group Seminars: Practicum. (1)** Seminar, one hour. Corequisite: course 185. Designed for undergraduate students who are part of research group that meets with graduate students. Discussion of research methods and current literature in field or of research of faculty members or students. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. Concurrently scheduled with course C296B. P/NP grading.

**195A. Community Internships in Psychology. (2)** Tutorial (approved community setting), six hours. Corequisite: course 194A. Limited to juniors/seniors. Internship in applications of psychology in supervised setting in community agency or business. Students meet on regular basis with sponsor and provide periodic reports of their experience. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. Individual contract with supervising placement sponsor required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**195B. Corporate Internships in Cognitive Science. (4)** Tutorial, eight hours. Limited to junior/senior Cognitive Science majors. Practical applications of cognitive science through internship experience in supervised setting. Students meet on regular basis with supervisor and provide periodic reports of their experience. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May be applied toward course requirements for Cognitive Science major. Individual contract with supervisor required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**196A. Research Apprenticeship in Psychology. (3 to 4)** Tutorial, eight hours. Corequisite: course 194B. Limited to juniors/seniors. Practical applications of psychology through research under guidance of faculty mentor. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May not be applied toward course requirements for any Psychology Department major. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**196B. Research Apprenticeship in Cognitive Science. (3 to 4)** Tutorial, eight hours. Corequisite: course 194C. Limited to junior/senior Cognitive Science majors. Practical applications of cognitive science through research under guidance of faculty mentor. Only 12 units from any combination of courses 185, 192, 194, 195, and 196 may be applied toward undergraduate degree. May be applied toward course requirements for Cognitive Science major. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**198. Honors Research in Psychology. (2)** Tutorial, two hours. Enforced corequisite: course 191AH or 191BH or 191CH. Limited to juniors/seniors and psychology honors program students. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. Letter grading.

**199A. Senior Project in Psychology. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research under guidance of psychology faculty mentor. Culminating paper required. Only one 4-unit 199 course may be taken per term. May be repeated for credit. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. P/NP grading.

**199B. Senior Project in Psychology. (4)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research under guidance of psychology faculty mentor. Culminating paper required. Only one 4-unit 199 course may be taken per term. May be taken only once for letter grade. Individual contract required. Information and contracts may be obtained from Undergraduate Advising Office, 1531 Franz Hall. Letter grading.

## Graduate Courses

**200A. Pavlovian Processes. (4)** Lecture, three hours. Basic principles and characteristics of learning and behavior, including Pavlovian conditioning, instrumental learning, and species-specific behavior. S/U or letter grading.

**200B. Instrumental Conditioning. (4)** Lecture, three hours. Topics include animal learning and conditioning and application of learning principles to goal-directed action, motivational processes, and goal selection in nonhuman animals. S/U or letter grading.

**200C. Representational Processes. (4)** Lecture, three hours. Preparation: undergraduate learning and physiological psychology courses. Review of experimental data on and models of construction of spatial, temporal, and numerical representations. Explicitly symbolic models compared and contrasted with associative models. Implications for neurobiology of learning and memory. S/U or letter grading.

**201. Current Issues in Learning and Behavior. (1)** Discussion, 90 minutes. Designed for graduate students. Required of learning and behavior students a minimum of four times (entire first year and winter of second year). Presentation of papers of current interest in learning, behavior, or applied behavioral analyses by experts in the field. Evaluation of their significance and methodology in detail. May be repeated for credit. S/U grading.

**203. Grant Writing for Neuroscientists. (4)** Seminar, three hours. Focus on writing and preparing National Research Service Award (NRSA) training grant application. Covers writing components of grant, which are reviewed and worked on in class. Students end with well-thought-out, written NRSA proposal. Focus on specific aims and research strategy components of grant. S/U or letter grading.

**204A. Basic Motivational Processes. (4)** Lecture, three hours. Designed for graduate students. Analysis, using behavioral systems approach, of basic motivated behavior such as feeding, drinking, foraging, and reproduction. Same approach also applied to phenomena such as acquired motivation, reinforcement, and drug addiction. Historical survey of behavioral analyses of motivation and goal-directed behavior. S/U or letter grading.

**204D. Fear and Anxiety. (4)** Lecture, three hours. Preparation: graduate training. Presentation of theoretical and empirical advances, from biological and behavioral perspectives, in the area of fear and anxiety. Integration of animal and human research.

**205A. Cortical Plasticity and Perceptual Learning. (2)** Lecture, three hours. Designed for graduate students. Examination of neural basis of perceptual learning. Overview of literature on cortical plasticity and how it relates to different forms of perceptual learning in visual, auditory, and somatosensory modalities. Review of mechanisms of cortical plasticity, including basic features of long-term synaptic plasticity and computational models of cortical processing. Letter grading.

**205E. Neural Basis of Reward and Value. (2)** Five-week course. Lecture, three hours. Designed for graduate students. Overview of neural systems underlying reward and value. Emphasis on mechanisms of reinforcement learning and cost-benefit or value-based decision making. Readings drawn from primary literature in animal research. Letter grading.

**205F. Physiology of Learning. (2)** Lecture, three hours. Designed for graduate students. Search for anatomical loci of engrams. Cell biology of plasticity, including electrophysiological and molecular approaches. Theories of how neural circuitry might be organized to make learning possible. Letter grading.

**205J. Current Perspectives on Neural Representations. (2)** Lecture, three hours. Designed for graduate students. Exploration of contemporary conceptions of neural representations through in-depth discussion of recent, primary literature. Particular emphasis given to issue of how advances in experimental and computational methods drive novel theoretical perspectives. Letter grading.

**205K. Vision Neurobiology. (2)** Lecture, three hours. Designed for graduate students. Exploration of anatomy, physiology, and computation in visual system, focusing on retina, visual cortex, and overall performance. Letter grading.

**205M. Neuropsychology of Perception. (2)** Lecture, three hours (five weeks). Designed for graduate students. Examination of neural substrates of high-level visual processing. Topics include agnosias and characteristics of electrophysiological responses recorded in primate temporal lobe. Discussion of issues regarding neural representation of knowledge. Letter grading.

**205N. Dopamine Prediction Error: Case Study of Reinforcement Learning Theory. (2)** Seminar, three hours. Overview of dopamine prediction error—signal exhibited when there is difference between expected outcome and reality—and theories that have been used to describe it. Discussions of papers describing studies that led to discovery of prediction error, its application to temporal difference reinforcement learning (TDRL), and challenges to this theory by recent work using optogenetics. Letter grading.

**205O. Neurobiology of Defensive Behaviors. (2)** Lecture, three hours (five weeks). Designed for graduate students. Overview of modern literature in rodents dissecting anxiety, fear, and panic circuits. Letter grading.

**206B. Introduction to Biological Signal Processing. (4)** Lecture, three hours. Introduction to basic electronics and some common types of signal processing of value in laboratory research in animal and human neuroscience, with applications in human physiology such as neuroimaging, electroencephalogram (EEG), and cardiovascular phenomena. S/U or letter grading.

**207. Seminar in Behavioral Neuroscience. (4)** Seminar, three hours. Requisite: Neuroscience M203 or consent of instructor. Seminar on topics in Behavioral Neuroscience. May be repeated for credit. S/U or letter grading.

**M208. Biology of Learning and Memory. (4)** (Same as Neurobiology M200G and Neuroscience M220.) Lecture, four hours. Molecular, cellular, circuit, systems, neuroanatomy, theory, and models of learning and memory. Cross-disciplinary focus on learning and memory to provide integrative view of subject that emphasizes emerging findings that take advantage of novel groundbreaking models. Letter grading.

**212. Evaluation of Research Literature in Physiological Psychology. (1)** Discussion, 90 minutes. Papers of current interest presented by members of seminar and their significance and methodology discussed and criticized in depth. May be repeated for credit. S/U grading.

**M213. Neuroimaging and Brain Mapping. (4)** (Same as Neuroscience CM272 and Physiological Science M272.) Lecture, three hours. Requisites: Neuroscience M201, M202. Theory, methods, applications, assumptions, and limitations of neuroimaging. Techniques, biological questions, and results. Brain structure, brain function, and their relationship discussed with regard to imaging. Letter grading.

**215A. Health Psychology. (4)** Lecture, three hours. Preparation: undergraduate degree or training in psychology. Psychological and social factors involved in etiology of illness, treatment and course of illness, long-term care and adjustment of chronically ill or disabled, and practice of institutional healthcare and self-care. Letter grading.

**215B. Human Physiology in Social and Behavioral Science. (4)** Lecture, three hours. Limited to graduate students. Designed to provide students with understanding of basic anatomy and activities of biological systems that relate psychological factors to health, and interconnections between these systems. Letter grading.

**216A. Psychology of Chronic Disease. (4)** Seminar, three hours. Limited to graduate students. Major themes include conceptualization and operationalization of adjustment to chronic illness: theoretical framework for understanding determinants of adjustment to chronic illness and current research on those determinants, prevalence of psychological disorder in populations with chronic illness, evidence-based psychoso-

cial interventions for individuals with chronic illness, and terminal illness and end-of-life care. Readings and discussion across several major chronic diseases (e.g., cardiovascular diseases, cancer, AIDS, rheumatic conditions, diabetes). Letter grading.

**216B. Psychoneuroimmunology. (4)** Seminar, three hours. Limited to graduate students. Introduction to field of psychoneuroimmunology to help students develop conceptual and methodological skills necessary for interpreting research in this area. Letter grading.

**216C. Psychology of Women's Health. (4)** Seminar, three hours. Limited to graduate students. Examination of theoretical and empirical advances in psychology of women's health. Socioenvironmental context of women's health, stress and depression in women, psychological aspects of gynecological health, major causes of morbidity and mortality for women, and women's health-related behaviors. Letter grading.

**216D. Psychology of Aging and Health. (4)** Seminar, three hours. Limited to graduate students. Theories and methods in study of aging and adult development, age-related changes in biological systems, and psychosocial aspects of aging. Topics include physical and cognitive changes with age, mental and physical well-being in older adulthood, and socioemotional functioning changes with age. Letter grading.

**216E. Families, Emotions, and Health. (4)** Seminar, three hours. Limited to graduate students. Discussion of theory and research on biological, emotional, social, and behavioral processes that link childhood family social environments to long-term mental and physical health. Letter grading.

**216F. Community Psychology. (4)** Seminar, three hours. Limited to graduate students. Social problems focus, with discussion of both conceptual and methodological issues that arise when designing and evaluating community interventions. Issues related to conceptualization of social problems as opposed to problems of individuals, and presentation of multidimensional explanatory models and interventions for several social problems. Special attention to ethnic and socioeconomic health disparities and to methodological issues faced in conducting research on these issues. Letter grading.

**216G. Biology of Chronic Disease. (4)** Seminar, three hours. Limited to graduate students. Examination of basic epidemiology and biology of major chronic diseases (e.g., cardiovascular disease, cancer, diabetes) and consideration of practical and logistical issues involved in studying chronic disease populations in behavioral and population research. S/U or letter grading.

**216H. Health Behavior Theory and Behavior Change. (4)** Seminar, four hours. Overview of research and theory in health behavior and health behavior change. Identification of contribution of health behaviors to overall health, construction of study methods that effectively measure major health behaviors, critical evaluation of health behavior change research, and generation of hypotheses and design research using main health behavior theories. S/U or letter grading.

**217. Variable Topics in Health Psychology. (4)** Seminar, three hours. Topics vary by instructor within health psychology area of study and may include epigenetics, child health psychology, health behavior, and behavior change. May be repeated for credit. S/U or letter grading.

**218. Research Methods in Health Psychology. (4)** Seminar, three hours. Designed for graduate psychology students. Basic foundation for health psychology graduate students to study various research designs and methods, measurement issues, responsible conduct of research, and related issues that are found in research in health psychology. S/U or letter grading.

**219. Health Psychology Lecture Series. (2)** Lecture, one hour. Clinicians and researchers in health psychology from Los Angeles area present their research, programs, and/or clinical work as part of training program in health psychology. May be repeated for credit. S/U grading.

**220A. Social Psychology. (4)** Lecture, three hours. Designed for graduate psychology students. Intensive consideration of concepts, theories, and major problems in social psychology.

**220B. Research Methods in Social Psychology. (4)** Lecture, three hours. Designed for graduate psychology students. Research design and methodological issues in experimental and nonexperimental social research.

**222A. Interpersonal Relations. (4)** Discussion, three hours. Requisite: course 220A. Critical review of theory and research on interpersonal relations, with emphasis on friendship, dating, and marriage.

**222C. Psychology of Intergroup Relations. (4)** Lecture, three hours. Designed for graduate students. In-depth and comprehensive exposure to major theoretical and methodological issues within domain of intergroup relations research. Approaches not simply restricted to work within psychology but across social sciences in general, including anthropology, political science, and sociology. S/U or letter grading.

**M222E. Foundations of Organizational Behavior. (4)** (Same as Management-PhD M243.) Lecture, three hours. Designed for graduate students. Doctoral-level survey of classic and emerging theories and research in field of organizational behavior, with focus on micro-level topics related to individual and interpersonal processes within organizations. Exploration of how individual behaviors, cognitions, and perceptions are affected by organizational content, structure, and culture. S/U or letter grading.

**222F. Professional Issues in Psychology. (4)** Seminar, three hours. Acquisition of skills essential for success in graduate school and academia more broadly, including transition to graduate school, writing, manuscript reviewing, grant writing, teaching and mentoring, academic job market, job negotiating, and giving job talks. Involves combination of guest speakers, lectures, discussions, readings, written exercises, and practical experience. S/U or letter grading.

**M222G. Social Vision. (4)** (Formerly numbered 222G.) (Same as Communication M234.) Seminar, three hours. Exploration of nascent field of social vision, with emphasis on how observers utilize visible cues in face and body to form impressions of other people and how these perceptions are moderated by existing knowledge structures and motivations. S/U or letter grading.

**222I. Intervention Science. (4)** Seminar, three hours. Exploration of use of science as basis for intervention. Exploration of psychology of social problems, and potential for scientific insights to inform meaningful and lasting solutions to social problems. S/U or letter grading.

**225. Seminar: Critical Problems in Social Psychology. (4)** Seminar, three hours. Requisites: courses 220A, 220B. May be repeated for credit with consent of instructor. S/U or letter grading.

**226A-226B-226C. Current Literature in Social Psychology. (2-2-2)** Discussion, 90 minutes. Course 226A is limited to first-year social psychology students. Courses 226B and 226C are open to nonsocial psychology students with consent of instructor. Recent and current research papers in social psychology presented by members of seminar and their significance and methodology discussed and criticized in depth. S/U grading.

**M228A. Proseminar: Political Psychology. (4)** (Same as History M236A and Political Science M261A.) Seminar, three hours. Introduction to political psychology: psychobiography, personality and politics, mass attitudes, group conflict, political communication, and elite decision making.

**M228B. Seminar: Political Psychology. (4)** (Same as Political Science M261D.) Discussion, three hours. Requisite: course 220A or Political Science M261A. Examination of political behavior, political socialization, racial conflict, mass political movements, and public opinion. S/U or letter grading.

**M228C. Critical Problems in Political Psychology. (4)** (Same as Political Science M261E.) Discussion, three hours. S/U or letter grading.

**M236. Interdisciplinary Relationship Science. (4)** (Same as Anthropology M295S, Education M297, and Sociology M270.) Lecture, three hours. Limited to graduate students. Diverse approaches to relationship science in fields of anthropology, education, psychology, and sociology. Focus on theme of understanding biological, behavioral, and cultural aspects of relationships through diverse theoretical and methodological approaches. Use of broad definition of interpersonal relationships, including relationships such as parent-child, teacher-student, sibling, peer, kin, romantic relationships, marriages, and friendships. S/U or letter grading.

**236B. Methods in Social and Affective Neuroscience. (4)** Seminar, three hours. Designed for graduate students. Provides insight into how to conduct research in social and affective neuroscience. S/U or letter grading.

**M238. Survey Research Techniques in Psychocultural Studies. (4)** (Same as Psychiatry M238.) Seminar, three hours. Designed for graduate students. Techniques for conceptualizing, conducting, and analyzing survey data; instruction in qualitative strategies for enhancing survey research on psychocultural problems.

**239. Qualitative and Mixed Methods in Psychology, Education, and Social Sciences. (4)** Seminar, three hours. Designed for graduate students. Substantive examples of qualitative and mixed-method research in culture and human development, both behavioral and neural. Examples illustrate variety of qualitative research techniques and diverse relations between qualitative and quantitative data useful for research. S/U or letter grading.

**240A. Language and Cognitive Development. (4)** Lecture, three hours. Preparation: one undergraduate developmental psychology course in cognitive or language development. Designed for graduate students. Consideration of major topics and concepts, key theories, latest methods, and research findings in development of language and cognition. S/U or letter grading.

**240B. Social and Emotional Development. (4)** Lecture, three hours. Preparation: one undergraduate developmental psychology course in social development or related topic. Designed for graduate students. Consideration of major topics and concepts, key theories, latest methods, and research findings in social and emotional development. S/U or letter grading.

**240C. Developmental Psychobiology. (4)** Lecture, three hours. Limited to graduate students. Introduction to emerging field of developmental psychobiology, including cognitive and affective neuroscience. Consideration of major topics and concepts, key theories, latest methods, and research findings. S/U or letter grading.

**241. Current Developments in Developmental Psychology. (1)** Discussion, 90 minutes. Designed for graduate developmental psychology students. Presentation of papers on current advances in developmental psychology and closely related areas by experts in the field. Emphasis on approaches to a problem, making it suitable to interweave presentations by graduate students. S/U grading.

**242A-242B-242F. Seminar: Developmental Psychology. (4-4-4)** Seminar, three hours. Requisites: courses 240A, 240B. May be taken independently and may be repeated for credit. S/U or letter grading. **242A.** Perceptual Development. **242B.** Cognitive Development. **242F.** Development of Language and Communication.

**M242G. Seminar: Developmental Psychology—Adolescent Development. (4)** (Same as Education M217F.) Seminar, four hours. Designed for graduate students. Review of recent research on physical, cognitive, social, and psychological development during second decade of life. Topics include pubertal development, changes in parent/adolescent relationships, role of peers, identity development, high-risk behaviors, stress and coping, and school adjustment. Letter grading.

**244. Critical Problems in Developmental Psychology. (4)** Lecture, three hours. Requisites: courses 240A, 240B. Current problems; content varies depending on interest of class and instructor. May be repeated for credit with consent of instructor.

**M245. Personality Development and Education. (4)** (Same as Education M217C.) Lecture, four hours. Review of research and theory of critical content areas in personality development that bear on school performance: achievement motivation, self-concept, aggression, sex differences, empathy, and other social behaviors; review of status of emotional behavior in personality theory and development. S/U or letter grading.

**246. Emotion across Lifespan. (4)** Seminar, three hours. How emotional experiences and behaviors change over course of lifespan. What neuroscience and psychological science can reveal about these changes. Questions addressed using interdisciplinary, developmental affective neuroscience framework. S/U or letter grading.

**M247. Culture, Brain, and Development. (4)** (Same as Sociology M249.) Seminar, three hours. General introduction to interrelations of culture, brain, and development, including both social and cognitive development. Special attention to effects of social change on culture and human development. S/U or letter grading.

**M248. Brain and Behavioral Development during Adolescence. (4)** (Formerly numbered 248.) (Same as Neuroscience M248.) Seminar, three hours. Foundational and emerging work on adolescent brain and behavioral development. Topics include cognition, risk taking, emotion, identity, stress, relationships, and population diversity. Discussions of assigned readings and presentations by guest faculty and scientists. S/U or letter grading.

**249. Current Issues in Quantitative Psychology. (1)** Seminar, 90 minutes. Designed for quantitative graduate students and minors. Research presentations and discussions of current topics in quantitative psychology. May be repeated for credit. S/U grading.

**250A. Advanced Psychological Statistics. (4)** Review of fundamental concepts. Basic statistical techniques as applied to design and interpretation of experimental and observational research.

**250B. Advanced Psychological Statistics. (4)** Advanced experimental design and planning of investigations.

**250C. Advanced Psychological Statistics. (4)** Lecture, three hours; discussion, two hours. Requisite: course 250A. Limited to graduate students. Review of traditional topics in correlation and regression analyses, including model comparison strategies, evaluation of model assumptions, testing mediation and moderation hypotheses, working with categorical variables, general linear model, and logistic regression. Letter grading.

**251A-251B-251C. Research Methods. (4-4-4)** Tutorial, to be arranged. Designed for graduate psychology students. Students design and conduct original research projects under supervision of instructor in charge. It is anticipated that many students will complete their project in two terms (normally three terms allowed). S/U (251A, 251B) and S/U or letter (251C) grading.

**M253. Factor Analysis. (4)** (Same as Education M231B.) Lecture, four hours. Requisites: Education 211B, 231A. Exploratory factor analysis, rotations, confirmatory factor analysis, multiple-group analysis. S/U or letter grading.

**254B. Mediation, Moderation, and Conditional Process Analysis. (4)** Lecture, three hours. Requisite: course 250C. Designed for students with previous experience with regression analysis. Application of linear and logistic regression to assess how (mediation) and when (moderation) effects occur; and combination of these to examine when certain processes occur (conditional process analysis). S/U or letter grading.

**254C. Bayesian Statistics. (4)** Lecture, three hours. Requisite: course 256A. Introduction to Bayesian inferences, effective approaches to Bayesian modeling and computation, and Bayesian methods that can be used by applied researchers to solve real-life problems. Covers basic Bayesian inference. S/U or letter grading.

**255A. Quantitative Aspects of Assessment. (4)** Lecture, four hours. Requisites: courses 250A, 250B. Introduction to issues concerning empirical measurement of abstract constructs using both classical and

modern empirical techniques. Hands-on approach allows students to develop practical experience. In addition to discussion of issues concerning reliability and validity, topics include exposure to analytic approaches, including item response theory, multiple regression, principal components analysis, exploratory factor analysis, confirmatory factor analysis, path analysis, and structural equation modeling. S/U or letter grading.

**255B. Item Response Theory. (4)** Lecture, three hours. Requisites: courses 250A, 250B. Introduction to item response theory (IRT) measurement models and their application to educational and psychological data. Coverage of major IRT models, including models for dichotomous and polytomous formats. S/U or letter grading.

**256A. Introduction to Multilevel Modeling. (4)** Lecture, four hours. Requisite: course 250C. Basics of random coefficient models for analysis of data from (1) individuals nested within groups and (2) repeated observations of individuals (longitudinal growth models). Selected advanced topics, including three-level models, cross-classification, dyadic data, categorical outcomes, power, and assumption violation. S/U or letter grading.

**256B. Advanced Multilevel Modeling. (4)** Lecture, four hours. Requisite: course 256A. Advanced topics in analysis of clustered and longitudinal data, including nonlinear models, multilevel mediation, nonhierarchical data structures, meta-analysis, modeling variance, and other topics of student interest. Readings in both quantitative and substantive multilevel modeling literature. S/U or letter grading.

**M257. Multivariate Analysis with Latent Variables. (4)** (Same as Political Science M208D and Statistics M242.) Lecture, three hours. Introduction to models and methods for analysis of data hypothesized to be generated by unmeasured latent variables, including latent variable analogues of traditional methods in multivariate analysis. Causal modeling: theory testing via analysis of moment structures. Measurement models such as confirmatory, higher-order, and structured-means factory analytic models. Structural equation models, including path and simultaneous equation models. Parameter estimation, hypothesis testing, and other statistical issues. Computer implementation. Applications. S/U or letter grading.

**258. Special Problems in Psychological Statistics. (4)** Lecture, three hours. Requisites: courses 250A, 250B. Special problems in psychological statistics and data analysis.

**259. Quantitative Methods in Cognitive Psychology. (4)** Requisites: courses 250A, 250B. Number of non-statistical mathematical methods and techniques commonly used in cognitive psychology. Topics include Markov chains, other stochastic processes, queueing theory, information theory, frequency analysis, etc.

**260A-260B. Proseminars: Cognitive Psychology. (1-1)** Presentation of research topics by students, faculty, and visiting scholars. May be repeated for credit. S/U grading.

**261. Perception. (4)** Lecture, three hours. Concepts, theories, and research in study of perception. Considers the questions: Why do things look, sound, smell, taste, or feel as they do? What is the nature of perceptual systems? How do these systems process information?

**262. Human Learning and Memory. (4)** Lecture, three hours. Contemporary theory and research in human verbal learning and memory; verbal and nonverbal learning and memory processes, structure and organization of short- and long-term memory. S/U or letter grading.

**263. Psycholinguistics. (4)** Lecture, three hours. Language allows humans to transfer thoughts across minds. To elucidate mental structures and processes that underlie this feat, exploration of relationship between language and rest of human mind; and within language system itself, how mental labor is divided across distinct subcomponents. Critical examination of both classic and cutting-edge findings from experimental cognitive psychology, computational modeling, and neuroscience. Topics include relationship



between linguistic structure and meaning; parallels between language and other cognitive domains (e.g., statistical learning, Bayesian inference, prediction, etc.); cognitive constraints on online language processing; influences of language on thought; language-thought dissociations; and efficient information coding. S/U or letter grading.

**264. Thinking. (4)** Lecture, three hours. Contemporary theory and research in thinking, problem solving, inference, semantic memory, internal representation of knowledge, imagery, concepts. S/U or letter grading.

**265. Computational Methods for Neuroimaging. (4)** Lecture, three hours. Requisites: courses 250A, 250B. Theory and practice of processing and analysis of functional MRI data. Topics include image registration, preprocessing and quality control, statistical modeling and inference, multivariate analysis, and machine learning methods. Letter grading.

**267. Neuroethics. (4)** Seminar, three hours. Exploration of ethical implications of modern neuroscientific advances, including potential use in legal system for assessing eyewitness memory, truthfulness, culpability, and probability of future criminal behavior. Consideration of societal consequences of cognitively enhancing drugs, memory dampening techniques, and brain stimulation. S/U or letter grading.

**268F. Human-Computer Interaction. (4)** Lecture, three hours. Limited to graduate students. Concepts, theories, and pragmatics of human-computer interaction. Topics include optimizing Web and product interfaces to enhance quality of user experience, with focus on applying principles of cognition, perception, learning, and memory to create human-computer interactions that are consonant with user needs and capabilities. Course projects include creating and user testing actual Web-based application. S/U or letter grading.

**269. Seminar: Cognitive Psychology. (4)** Seminar, three hours. Discussion of problems in cognitive psychology that encompass more than a single subfield of the area. May be repeated for credit.

**270A-270B-270C. Foundations of Clinical Psychology. (4-4-4)** Lecture, five hours. Designed for graduate clinical psychology students. Letter grading. **270A.** Corequisite: course 271A. Analysis of phenomenological, theoretical, and research issues regarding etiology and mediating mechanisms in neurotic, affective, schizophrenic spectrum, and other personality disturbances. **270B.** Corequisite: course 271B. Principles and methods of psychological assessment and evaluation. **270C.** Corequisite: course 271C. Principles and methods of psychological intervention in individuals, families, and community settings.

**271A-271B-271C. Clinical Psychological Methods. (2-2-2)** Corequisites: courses 270A, 270B, 270C. Procedures in clinical psychology as applied in clinical and community settings. Supervised exposure to psychological attributes of psychopathology and procedures for psychological assessment, intervention, and research with clinical populations. Experience closely coordinated with content in courses 270A, 270B, 270C. S/U grading.

**271D. Clinical Research Laboratory. (2)** Discussion, one hour; laboratory, one hour. Corequisites: courses 270A or 270B or 270C, and 271A or 271B or 271C. Designed for graduate clinical psychology students. Acquaints students with faculty research interests and involves them in their course 251 research at an early stage to insure completion. S/U grading.

**271E-271F. Clinical Research Laboratories. (2-2)** Requisite: course 271D. Designed for graduate clinical psychology students. Required of first-year clinical psychology students. S/U grading. **271E.** Brief overview of research design issued in clinical psychology and practical issues in students' own research activities. **271F.** Discussions of students' particular research activities and issues, plus laboratories in computer analysis of statistical data.

**271G. Evidence-Based Intervention for Childhood Problems. (4)** Fieldwork, five-day, 35-hour training period in Fall Quarter. Requisites: courses 271A, 271B, 271C. Designed for second-year graduate clinical psychology students. Training of students in application of (1) child treatment outcome literature, (2) clinical

monitoring and feedback tools, and (3) common clinical strategies from evidence-based practices to prepare for assessment, monitoring, planning, and service delivery in child practicum. S/U grading.

**272E. Advanced Clinical Psychological Methods: Special Problems. (4)** Seminar, three hours. Requisite or corequisite: course 401 or 451. May be taken independently for credit. Letter grading.

**272G. Advanced Clinical Psychological Methods: Marital Therapies. (4)** Lecture, two hours; discussion, one hour; laboratory, one hour. Requisites: courses 270A, 270B, 270C, 271A, 271B, 271C. Examination of assessment and treatment approaches for relationship problems in couples. Presentation, discussion, and illustration of procedures derived from social-learning, psychodynamic, and systems theories, with relevant research findings. May be taken independently for credit. Letter grading.

**273A-273B-273C. Professional and Ethical Issues in Clinical Psychology. (2-2-2)** Lecture, one hour; discussion, one hour. Designed for graduate clinical psychology students. Year-long course sequence covering variety of topics necessary for clinical psychologists in their clinical work, including legal and ethical issues, child abuse, suicide assessment, issues in empirically validated treatments, psychiatric consultation and psychoactive medications, working with diverse client populations, etc. Letter grading.

**M274. Health Status and Health Behaviors of Racial and Ethnic Minority Populations. (4)** (Same as Health Policy and Management M274.) Lecture, two hours; discussion, one hour. Limited to graduate students. Overview of physical and mental health behaviors and status of major racial/ethnic groups in U.S. Where appropriate, discussion of international issues as well. S/U or letter grading.

**276. Children with Learning and Related Behavioral Problems: School Policy and Practice. (4)** Lecture, three hours. Designed for PhD students. Exploration of learning and related behavioral problems in broad perspective as basis for analyzing cause and intervention. Issues related to prevailing policies and practices and new directions for research, policy, practice, and training. S/U or letter grading.

**277A-277B. Advanced Clinical Assessment. (4-4)** Lecture, four hours; laboratory, three hours. Designed for graduate clinical psychology students. Projective techniques, clinical interpretation, case studies, psychological test battery, psychopathology, and application of assessment to problems in psychotherapy. Letter grading.

**M278. Functional Neuroimaging: Techniques and Applications. (3)** (Same as Bioengineering M284, Neuroscience M285, Physics and Biology in Medicine M285, and Psychiatry M285.) Lecture, three hours. In-depth examination of activation imaging, including MRI and electrophysiological methods, data acquisition and analysis, experimental design, and results obtained thus far in human systems. Strong focus on understanding technologies, how to design activation imaging paradigms, and how to interpret results. Laboratory visits and design and implementation of functional MRI experiment. S/U or letter grading.

**M280. Affective Disorders. (2 or 4)** (Same as Psychiatry M234.) Seminar, two hours. General topics related to primary affective disorders (depression, manic depressive illness), including diagnosis, pharmacology, epidemiology, psychology, phenomenology, biology, and treatment. Students enrolled for 4 units are assigned a more intensive reading list and required to make a presentation or prepare a research paper. S/U or letter grading.

**M285. Cognitive Behavior Therapy with Children: Treatment and Systems of Care. (2 or 4)** (Same as Psychiatry M277.) Seminar, 90 minutes. Designed for graduate students. Cognitive/behavioral approaches to prevention and treatment of mental health problems in children. Examination of service delivery systems for treating troubled youth and discussion of issues with respect to current systems of care. Major problems include conduct disorders, attention deficit disorder, depression, anxiety, and learning disabilities. Letter grading.

**M288A-M288B. Principles of Neuroimaging I, II. (4-4)** (Same as Neuroscience M284A-M284B and Psychiatry M284A-M284B.) Lecture, four and one half hours. Preparation: competence in integral calculus, electricity and magnetism, computer programming (any language), general statistics. Requisite: Psychiatry 292. Course M288A is requisite to M288B. Instrumental imaging methods for study of nervous system, with emphasis on quantitative understanding and data interpretation and features common to modalities. X-ray computed tomography, magnetic resonance imaging, positron emission tomography, magnetoencephalography, transcranial magneto stimulation, near infrared imaging. Letter grading.

**289A-289B-289C. Current Issues in Clinical Psychology. (1-1-1)** Seminar, two hours. Designed for first-year graduate clinical psychology students. Presentation of research and applied topics relevant to clinical psychology. In Progress (289A, 289B) and S/U (289C) grading.

**290. History and Systems of Psychology. (2)** Seminar, two hours. Requisites: courses 251A, 251B, 251C. Rich and detailed examination of history of full scope of psychology as scientific discipline, with particular emphasis on cognitive, social/personality, developmental, and biological aspects of discipline. Broad treatment of how various emphases within broader field have evolved. S/U or letter grading.

**291. Trauma and Health. (4)** Seminar, three hours. Trauma is common--vast majority of individuals experience traumatic event during their lifetime. Although many individuals are resilient after these experiences with respect to their emotional health, sequelae of these events can be long-lasting. Posttraumatic stress disorder (PTSD) is often considered quintessential psychiatric disorder related to trauma, but impact of trauma can affect wide range of mental and physical health outcomes across lifespan. Trauma can be conceptualized as transdiagnostic risk factor for multitude of psychological and physiological health processes that may operate beyond recognized diagnostic boundaries. Study takes in-depth dive into empirical literature on trauma. S/U or letter grading.

**M294. Seminar: Neural and Behavioral Endocrinology. (2)** (Same as Neurobiology M255 and Physiological Science M255.) Seminar, one hour; discussion, one hour. Topics include hormonal biochemistry and pharmacology. Hypothalamic/hypophyseal interactions, both hormonal and neural. Structure and function of hypothalamus. Hormonal control of reproductive and other behaviors. Sexual differentiation of brain and behavior. Stress: hormonal, behavioral, and neural aspects. Aging of reproductive behaviors and function. Letter grading.

**295. Psychology of Diversity. (4)** Seminar, three hours. Introduction to research and theory on group differences and psychology of diversity. Topics include social identity, intergroup relations, development across lifespan and across social and cultural contexts, and group disparities in health and mental health. Letter grading.

**296A. Research Topics in Psychology. (1)** Research group meeting, one hour. Limited to graduate students. Discussion of current literature, new ideas, methodological issues, and preliminary findings. Research presentations and opportunities for feedback on current and proposed research activity to encourage, support, and facilitate student research expertise. Assigned readings included. S/U grading.

**C296B. Research Group Seminars: Practicum. (1)** Seminar, one hour. Designed for graduate students who are part of research group that meets with undergraduate students. Discussion of research methods and current literature in field or of research of faculty members or students. Concurrently scheduled with course C194D. S/U grading.

**M297. Methods in Developmental Cognitive Neuroscience. (4)** (Formerly numbered 297.) (Same as Neuroscience M297.) Seminar, three hours. Survey of methods and tools used to address developmental cognitive neuroscience questions. S/U or letter grading.

**298. Special Problems in Psychology. (1 to 4)** Seminar, one to three hours. Content depends on interests of particular instructor. May be repeated for credit. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**401. Fieldwork in Clinical Psychology. (1 to 12)** Fieldwork, to be arranged. Requisites: courses 271A, 271B, 271C. Students on practicum assignments are required to register for this course each term (except by consent of clinical program committee). Letter grading.

**402. Clinical Research Practicum. (2)** Fieldwork, two hours. Faculty and graduate students who share interests discuss current literature, new ideas, methodological issues, and preliminary findings. Meetings include research presentations and opportunities for feedback on current and proposed research activity to encourage, support, and facilitate student research expertise. Assigned reading included. S/U grading.

**403. Special Topics Study Course. (1 to 4)** Discussion, one to four hours. Under faculty supervision, group of students meets each week for quarter in self-led study group to pursue specific topic of their choice that is not covered in other department courses. S/U grading.

**410A-410B-410C. Clinical Teaching and Supervision. (4-4-4)** Clinic, four hours. Preparation: completion of PhD comprehensive examinations, advancement to candidacy or preparation for dissertation research actively under way. Study and practice of knowledge, concepts, and theories on teaching and supervision of applied clinical psychology. Letter grading.

**410D-410E-410F. Clinical Assessment Supervision. (4-4-4)** Clinic, two hours; other, one hour. Designed for third-year graduate clinical psychology students. Study and practice of knowledge, concepts, and theories on teaching and supervision of psychological assessment. Letter grading.

**421. Research in Social Psychology. (2)** Discussion, two hours; reading and group work, four to six hours. Forum for faculty and graduate students pursuing research on a common topic to share research ideas, make research presentations, and obtain feedback on study designs, procedures, and results to foster collaborative investigations in common research areas. S/U grading.

**430. Quantitative Psychology Practicum. (4)** Practicum, two hours. Requisites: courses 250A, 250B, 250C, 255A, 256A, M257, 258. Hands-on statistical consultation training for graduate students majoring in quantitative psychology. Weekly meeting with faculty supervisor, consultation with researchers in Psychology Department, and preparation for and following-up on consultation meetings. S/U grading.

**451. Internship in Clinical Psychology. (8 to 12)** Fieldwork, to be arranged. Preparation: successful completion of departmental qualifying examinations. Enforced requisite: course 401. Limited to advanced UCLA clinical psychology graduate students. May be repeated for credit. S/U grading.

**495. Presentation of Psychological Materials. (4)** Seminar, to be arranged. Supervised practicum in undergraduate teaching. Students serve as discussion section leaders in selected undergraduate courses. S/U grading.

**495A. Teaching Assistant Training Seminar: Presentation of Psychological Materials I. (1)** Seminar, 90 minutes. Supervised practicum in undergraduate teaching. Focus on discussion and implementation of evidence-based teaching practices. Topics include facilitating active learning, presenting material, providing constructive feedback, and teaching diverse students. Students serve as teaching assistants in course 10. S/U grading.

**495B. Teaching Assistant Training Seminar: Presentation of Psychological Materials II. (1)** Seminar, one hour. Requisite: course 495A. Supervised practicum in undergraduate teaching. Advanced training in use of evidence-based teaching practices. Topics include designing course materials, setting pedagogical goals, and developing teaching statements. Students serve as teaching assistants in various courses. S/U grading.

**596. Directed Individual Research and Study in Psychology. (1 to 12)** Tutorial, to be arranged. One 596 course is required during second year of graduate study, and one 596 or 599 course is required during each succeeding year of graduate study. (Terminal MA candidates are exempt from this requirement.) S/U grading.

**597. Individual Studies. (1 to 12)** Tutorial, to be arranged. Designed primarily as preparation for PhD qualifying examinations. May be required by some area committees as requisite for taking examinations. S/U grading.

**599. Research for PhD Dissertation. (1 to 12)** Tutorial, to be arranged. Preparation: successful completion of qualifying examinations. One 599 course is required during each year following completion of qualifying examinations. S/U grading.

## PUBLIC AFFAIRS

### *Interdisciplinary Minor*

*Meyer and Renee Luskin School of Public Affairs*

3343 Public Affairs Building  
Box 951656  
Los Angeles, CA 90095-1656

### Public Affairs Minor

310-794-4080

### E-mail contact

Michael C. Lens, PhD, *Chair*

## Faculty Committee

Kenya L. Covington, PhD (*Public Policy*)

Michael C. Lens, PhD (*Public Policy, Urban Planning*)

Lené F. Levy-Storms, PhD (*Social Welfare*)

José C. Loya, PhD (*Urban Planning*)

Meredith Phillips, PhD (*Public Policy, Sociology*)

Ananya Roy, PhD (*Social Welfare, Urban Planning*)

## Overview

The Public Affairs minor teaches undergraduate students the skills of policy analysis and exposes them to many of the local, state, national, and international issues facing today's policymakers and opinion leaders. Courses explore the public (governmental) and nonprofit sectors and provide a theoretical, conceptual, and practical foundation for students. Particular attention is given to the vexing issues facing urban areas and urban planners, social welfare and social workers, and public policies that affect individuals and groups of people in their public and private lives.

## Undergraduate Minor

### Public Affairs Minor

### Admission

To enter the Public Affairs minor, students must have an overall grade-point average of 2.0 or better and complete Public Affairs 10 with a grade of B or better. For more information, contact the [Undergraduate Advising Office](#) by e-mail.

### The Minor

*Required Lower-Division Courses (10 units):* Public Affairs 10, and 40 or 60.

*Required Upper-Division Courses (20 to 25 units):* (1) Two or three theory and/or methods courses selected from Public Affairs M109, 110, 111, 112, 113, 114, 115, 116; (2) two or three elective courses selected from upper-division, undergraduate courses (100-199) within the four academic units of the Luskin School of Public Affairs: public affairs, public policy, social welfare, and urban planning. Students must complete five upper-division courses. If three theory/methods courses are selected, two electives are required; if two theory/methods

courses are selected, three electives are required.

## Policies

Lower-division courses may not be substituted. If a student has taken a non-public affairs course in statistics or microeconomics, it is recommended that the other public affairs course be taken to satisfy the second lower-division requirement.

By petition only, students may request to use one outside course (not from a Luskin School of Public Affairs unit) as an elective for the minor.

Fieldwork and internship courses, such as Social Welfare 130A, 130B, and Urban Planning M165, may not be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

# PUBLIC AFFAIRS SCHOOLWIDE PROGRAMS

*Meyer and Renee Luskin School of Public Affairs*

3343 Public Affairs Building  
Box 951656  
Los Angeles, CA 90095-1656

**Public Affairs Major**

310-794-4080

**E-mail contact**

Michael C. Lens, PhD, *Chair*

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Ananya Roy, PhD (*Social Welfare, Urban Planning*)

## Overview

The Public Affairs major offers students a rigorous conceptual and empirical foundation that prioritizes capacity for action by students exhibiting high motivations for public service and social change. It combines interdisciplinary training in the social sciences with practical experience addressing public problems. Students will learn theoretical, empirical, and critical foundations of applied social science, qualitative and quantitative research methods, and

the history and practice of community engagement.

Public Affairs students traverse the boundary between the classroom and the world through instruction in public engagement and experiential learning that develop students' capacity to work collaboratively with communities, government agencies, nonprofit organizations, and businesses.

The major serves as a pathway for students pursuing careers serving the public interest in civil society, business, government, or through advanced graduate training in academic or professional programs.

## Undergraduate Major

### Public Affairs BA

#### Capstone Major

The Public Affairs major is a designated capstone major. Students pursuing the major are required to complete a three-quarter experiential learning opportunity. The experiential learning capstone consists of three parts: an internship, seminar, and capstone project.

Internships can range from internships in community-based organizations, social enterprise businesses, or regional governments to UCLA Global Internship Program, UCLA Quarter in Washington, or UC Center Sacramento (UCCS) programs.

These experiences are accompanied by a seminar that enables students to reflect on and share their engagement experience with classmates, apply what they have learned in their coursework to their community or public engagement, and analyze how the engagement experience conforms with or differs from what they learned in coursework.

This experiential learning opportunity culminates with a capstone project that integrates what students have learned at their internship site with theory and methods learned in their major coursework.

#### Learning Outcomes

The Public Affairs major has the following learning outcomes:

- Understanding of how different contexts, institutions, and/or environments influence individual and public life and can create, exacerbate, or reduce inequality and injustice
- Demonstrated familiarity with economic, political, and/or civil society responses to social problems and public issues
- Location of, use of, and critical thinking about quantitative and qualitative evidence for understanding societal problems and/or their solutions
- Formulation of clear and convincing written and oral arguments for varied audiences
- Effective communication with collaborators, policymakers, and/or the public
- Application of theoretical knowledge, analytical methods, and communication skills to an experiential learning capstone

## Entry to the Major

### Admission

Students must apply to declare the Public Affairs major. Admission into the major is based on student academic performance and an application process. Consult with Luskin School of Public Affairs undergraduate advisers for any additional admission requirements.

### Pre-major

Students entering UCLA directly from high school can select the Public Affairs pre-major on the UCLA admission application, or complete a petition to enter the pre-major once in attendance at UCLA. Transfer students are automatically admitted to the major if they select Public Affairs on the UCLA admission application. See the Transfer Students section for more details.

The Public Affairs major includes six lower-division courses and ten upper-division courses. Students identified as Public Affairs pre-majors have the opportunity to formally apply to declare the Public Affairs major after completing four of the required lower-division courses and the school quantitative reasoning and Writing I requirements. Two of the four required lower-division courses must be Public Affairs 40 and 60, both of which serve as requisites for upper-division coursework.

Students may only apply to the Public Affairs major during winter quarter of their first or second year, once they have satisfied the following criteria: (1) Must be in good standing at the time of application. This means students cannot be on probation or subject to dismissal status when they apply. (2) Have completed, with a C or better, at least four of the six required lower-division public affairs courses (including courses taken winter quarter). Completed courses must include Public Affairs 40 and 60. The remaining two courses, if not yet taken, must be taken as soon as possible, and during the third year at the latest. All courses for both the pre-major and the major must be taken for a letter grade. (3) Have completed at least 45 letter-graded units (including AP and transfer units, if needed) by the end of winter quarter of the year they apply. (4) Have not exceeded 135 units of coursework (not including AP or other transfer units), by the end of winter quarter of the year they apply.

### Transfer Students

Transfer applicants to the Public Affairs major with 90 or more units are considered for admission based on successful completion of the preparation for the major coursework. Students must take all preparation for the major courses for a letter grade, and receive a B grade or better in these courses to be competitive. Transfer credit is subject to department approval. Consult an undergraduate counselor before enrolling in any courses for the major.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Public Affairs 40, 60, 80, and three courses selected from Public Affairs 10, 20, 30, 50, or 70.

### The Major

*Required:* (1) Two theory courses selected from Public Affairs M109, 110, 111, 112, 113, 114; (2) both research methods courses Public Affairs 115, 116; (3) three-term capstone sequence Public Affairs 187AX, 187BX, 187CX; (4) three additional upper-division public affairs courses.

### Honors Program

Students who wish to complete an original research thesis, driven by student-defined interests and independent work, may apply to the Public Affairs honors thesis program in the spring of junior year. Students who are admitted to program begin background research for their project over the summer and enroll in three contract research courses with their Luskin thesis adviser during their senior year. The sequence (Public Affairs 198A-198B-198C) must be completed over three consecutive quarters, starting in the fall. Students must earn at least a B in Public Affairs 198A to continue with the sequence.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade. Preparation for the major courses must be completed with a C grade or better.

### The Major

Each course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the major.

### Honors Program

#### Admission

To apply to the honors thesis program students must (1) have senior standing by the beginning of the fall quarter in which Public Affairs 198A is taken, (2) have an overall minimum grade-point average of 3.60 or better in the major at the end of winter quarter in the year prior to beginning the thesis, (3) have completed Public Affairs 115 and 116 by the end of spring quarter in the year prior to beginning the thesis with grades of A- or better, (4) have agreement from a faculty member to serve as thesis adviser.

To apply, students submit an application containing a short research proposal, information on their academic and research preparation, and confirmation that a Luskin faculty member has agreed to advise their honors thesis during the fall, winter, and spring of the subsequent year. The Public Affairs honors committee selects applicants based on the promise of their proposed research, research-related coursework, and research experience. The selection process is competitive.

## Requirements

To qualify for graduation with departmental honors, students must complete a Public Affairs honors thesis deemed to meet the standards of honors or highest honors by the Public Affairs honors committee, and have a cumulative grade-point average of 3.60 or better in the major.

The Public Affairs honors committee, with input from thesis advisers, determine whether students' theses merit honors or highest honors.

Students may count one honors contract course toward their Public Affairs major elective requirement (with the understanding that no more than one contract course in total may count toward the Public Affairs elective requirement).

## Public Affairs

### Lower-Division Courses

**10. Social Problems and Social Change. (5)** Lecture, three hours; discussion, one hour. Introduction to social scientific approaches to study of social problems and their solutions. Using selected contemporary social problems as cases, and drawing on variety of sources (such as scholarly readings, video clips, and guest speakers), exploration of how social problems and their solutions come to be defined, roles that economic, political, educational, and cultural institutions play in perpetuating or solving social problems, and how individuals, social advocates, and communities can lead or impede social change. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Power, Politics, and Policy Change. (5)** Lecture, three hours; discussion, one hour. Introduction to key institutions of government, politics, and policy in U.S., covering their history, contemporary forms, and internal dynamics. Includes various scales and branches of government as well as institutions that exercise power and influence in public decision making and social action, such as corporations, unions, media, social movements, and civil society. Letter grading.

**30. Comparative Analysis of Wealth, Policy, and Power. (5)** Lecture, three hours; discussion, one hour. Exploration of strategic interactions that give rise to social problems around world, what can be done to address them, and how different polities have tried (and sometimes failed) to mount effective response. Applications include climate change, antivaccination movement, protest and repression, war and formation of states, corruption, and human and drug trafficking. Letter grading.

**40. Microeconomics for Public Affairs. (5)** Lecture, three hours; discussion, one hour. Introduction to principles of microeconomics with focus on social and policy problems. Study of decisions by firms and individuals, and implications for allocation of resources. Application of economic models to public issues such as social safety net, minimum wage, education, inequality, and poverty. Letter grading.

**50. Foundations and Debates in Public Thought. (5)** Lecture, three hours; discussion, one hour. Introduction of core concepts of democracy and equality and challenges to implementation posed by race, class, and gender inequality. Review of standards by which political systems can be judged to be democratic and identification of obstacles to their mutual implementation. Focus on inequality, its historical causes and modern consequences. Letter grading.

**60. Using Data to Learn about Society: Introduction to Empirical Research and Statistics. (5)** Lecture, three hours; discussion, two hours. Not open for credit to students with credit for Economics 41, Political Sci-

ence 6, Statistics 10, 12, 13, or 15. Introduction to statistics through examination of topics of public interest. Familiarization with research design principles and hands-on data analysis using statistical software. Students learn how to find and organize quantitative data; summarize, display, and interpret data; draw inferences from samples (including understanding margins of error, standard errors, and confidence intervals); test hypotheses about associations between two variables (including tests of proportion, t-tests, chi-squared, correlation); and communicate findings to lay audience. Letter grading.

**70. Information, Evidence and Persuasion. (4)** Lecture, three hours; discussion, one hour. Examination of sources and varieties of knowledge produced in social sciences. Evaluation of types of evidence, arguments, and persuasion on social problems and public issues. Examination of public life of evidence and arguments by different actors in social policy-making, persuasion, and propaganda process. Letter grading.

**80. How Social Environments Shape Human Development. (4)** Lecture, three hours; discussion, one hour. Overview of major theoretical, conceptual, and empirical traditions in study of human development. Exploration of how diverse cultural, social, socioeconomic, and historical contexts interact with biological, cognitive, and psychological processes to affect individuals during key developmental periods (such as early childhood, childhood, adolescence, early adulthood, and late adulthood). Topics may include historical changes in families, schools, neighborhoods, and workplace; economic conditions of families, schools, and neighborhoods; enduring effects of childhood on adult well-being; and impact of ascribed characteristics such as gender, race, and nationality on individuals' environments, pathways, and outcomes. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**95. Introduction to Community or Corporate Internships in Public Affairs. (2 or 4)** Tutorial, two hours; fieldwork, eight hours. Limited to freshmen/sophomores. Entry-level internship in supervised setting in corporate, governmental, or nonprofit/community organization setting related to public affairs. Students meet on regular basis with instructor and provide periodic reports of their experience. Individual contract with supervising faculty member required. May be repeated for credit. May not be used toward Public Affairs major capstone requirement; consult with undergraduate adviser. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M109. Introduction to Cities and Planning. (4)** (Same as Urban Planning M120.) Lecture, three hours; discussion, one hour. Survey of urban history and evolution in U.S., urban social theory, current growth trends, system of cities, urban economy and economic restructuring, traditional and alternative location theories, urban transportation, and residential location and segregation. Letter grading.



**110. Urban Revolution: Space and Society in Global Context. (4)** Lecture, three hours; discussion, one hour. Examination of potentialities and challenges of 21st-century urban revolution in global context. Introduction of theoretical frameworks and conceptual methods used by urban studies and planning to study cities and urban transformations, and historical and contemporary analysis of urbanization to learn about key urban processes such as agglomeration, segregation, gentrification, and suburbanization. Students learn about institutions and policies governing transportation and housing, and forms of community organizing and civil society that seek to redress urban inequalities. Introduction to key theories of space and utopian visions of urbanism. Letter grading.

**111. Microeconomics: Market Failures and Inequality. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 40 (or Economics 1 or 11 or equivalent introductory economics course), 60 (or Political Science 6 or Statistics 10 or equivalent introductory statistics course). Introduction to economic theory for policy analysis. Broad focus on evaluating rationale for government intervention in economy, in particular to address market failures and issues of economic inequality. Major emphasis on market failures in context of environmental sustainability, and economic inequality arising from markets for human capital, health, housing, and labor. Students are expected to have working knowledge of basic statistical and economic concepts. Letter grading.

**112. Social Movements. (4)** Lecture, three hours; discussion, one hour. Introduction to theories, real-life examples, and applied skills for understanding and contributing to social movements. Examination of how and why social movements emerge; how and why people join, lead, stay, or drop out of movements; and strategies and tactics by which social movements enact change. Draws upon wide range of social movements inside and outside of U.S. Letter grading.

**113. Policy Analysis: Approaches to Addressing Social Problems. (4)** Lecture, three hours; discussion, one hour. Introduction to applied policy analysis designed to train students in logic of public policy analysis, introduce them to general skills required to do policy analysis, and to prepare them in persuasive presentation of their work. Development of skills fundamental to effective policy analysis and argumentation. Letter grading.

**114. People, Organizations, and Systems. (4)** Lecture, three hours. Theoretical approaches to human service organizations to explore social ecology of helping relationships and problem-solving processes in which helpers and clients in organizations engage. Examination of organizational structures/function. Study of interplay between individual clients, organizations, larger systems, and social and cultural backdrop. Letter grading.

**115. Using Quantitative Methods to Understand Social Problems and Their Potential Solutions. (5)** Lecture, three hours; discussion, two hours. Requisite: course 60 or equivalent introductory statistics course. Course in R preferred. Introduction to multivariate quantitative research models used to answer questions in social science. Students gain practical and intuitive understanding of multivariate regression, program evaluation, and research methods, and apply knowledge by analyzing real world data. Focus on practical analytic tools using statistical software. Letter grading.

**116. Using Qualitative Methods to Understand Social Problems and Their Potential Solutions. (5)** Lecture, three hours; discussion, two hours. Introduction to qualitative research methods with focus on ethnographic observations, interviewing, and focus groups. Students practice conducting variety of qualitative methods. Letter grading.

**M117B. Network Science Using R. (4)** (Same as Public Policy CM177.) Lecture, three hours. No prior knowledge of R required. Designed for juniors and seniors. Network analysis offers framework for understanding how relationships between people, places,

and institutions affect public policy outcomes. For example, why individuals decide to protest or vote, amount of education they pursue, or effect of human interference in ecosystem can all be considered using network analysis. Weekly introduction of concept from network analysis, followed by working through it using popular statistical programming language R. Letter grading.

**M117C. Community-Engaged Research Methods. (4)** (Same as Chicana/o and Central American Studies M129 and Labor Studies M129.) Lecture, four hours. Students are trained in designing, drafting, piloting, and administering new survey focused on transitions to adulthood. Written in collaboration with labor and community partners serving Latinx, Asian Americans and Pacific Islanders, Black, and Indigenous youth and low-wage workers, this survey gathers data on workforce development, labor rights, education, health, mental health, and civic engagement of young people residing in Black, Indigenous, and people of color communities. Students are exposed to historical development of racial statistics, role of racial statistics in contemporary life, and critical quantitative science. Includes testing questions on racial identity and attitudes, gender identity, workforce development, labor rights, healing and wellness, and other topics determined by labor and community partners. P/NP or letter grading.

**M117D. Data Analysis for Educational Equity and Improvement. (4)** (Same as Public Policy CM126.) Lecture, three hours. Requisite: course 60. Exploration of challenge of making data useful for decision-making from cleaning data and deciding which analyses to conduct; to conducting those analyses carefully, thoughtfully, and in reproducible way; to displaying results, interpreting them, and communicating them clearly. Focus on challenge of making survey data useful to educators so that they can use those data to reflect on school and district policies and practices and, ultimately, use information to improve students' school experiences. Letter grading.

**120. Urban Poverty and Public Policy. (4)** Lecture, three hours. Exploration of how neighborhoods characterized by concentrated poverty affect urban residents. Evaluation of relative efficacy of various public policies that aim to improve life chances of urban poor. Use of explicitly political lens, evaluating roles that elite institutions, mass behavior, class and race-based power disparities, and public opinion play in development and implementation of urban policy. Letter grading.

**121. Race, Class, Gender, and Spatial Inequality. (4)** Lecture, three hours. Introduction to economic and sociological approaches to analyzing dimensions, causes, and consequences of inequality in society. Introduction to public policy concepts and tools for analyzing key urban, labor, and social policies that may help to alleviate inequality in society. Letter grading.

**M122. Participatory Action Research on Youth Organizing for Racial Justice. (4)** (Same as African American Studies M129B, American Indian Studies M129, Asian American Studies M128, and Chicana/o and Central American Studies M129B.) Lecture, four hours. Students are trained to conduct participatory action research on grassroots youth organizing across California. Students gain historical and theoretical background on multi-racial and inclusive organizing. Students learn how to collect and analyze data pertaining to pressing organizing issues. Study and critical analysis of youth organizing strategies. Weekly training modules on data collection and grassroots organizing strategies that prepare students for internships in grassroots youth organizing groups serving Asian American, Black, Latinx, and Native American communities. P/NP or letter grading.

**M124. Child Welfare Policy in America. (4)** (Same as Social Welfare M151.) Lecture, three hours. Limited to juniors/seniors. Examination of public child welfare system in the U.S. Review of social policies and programs that impact children. History of social policies and programs for children, including discussion of or-

phanages, foster care, and adoptions. Transformation of public child welfare system into child protection system. Impact of welfare reform on child policies and programs in the U.S. Major programs designed to provide safety net for disadvantaged children, including welfare, food stamps, child care, child support, and children's allowance programs. Review of research and analysis in this area. Overview of social policies and programs that impact children in the U.S. Examination of comparative policies in other countries. P/NP or letter grading.

**M125. Creating Safe and Welcoming Schools. (4)** (Formerly numbered 125.) (Same as Education M177.) Lecture, two hours; discussion, one hour. Examination of historical context and causes of school violence, theories, and diverse perceptions of school climate and safety. Special emphasis on impact of school climate on oppressed groups and how social contexts such as poverty and how neighborhood resources influence school safety. Letter grading.

**128. Practical Applications of Research on Emerging Adults. (4)** Lecture, three hours. Focus on practical applications of research on critical transition period in human development—emerging adulthood—with particular emphasis on experiences of college students. Letter grading.

**M129XP. Intergenerational Communication across Lifespan. (4)** (Same as Gerontology M142XP and Social Welfare M142XP) Lecture, three hours; fieldwork, one hour. Limited to juniors/seniors. What do you say to your parents in conversation? How do you talk to your grandparents? Does your family talk well to one another as group? How do you communicate well with boss who is 30 years older than you? Individuals of all ages interact with one another, and their interactions have significance throughout their lives. Introduction to psychological, interpersonal, and societal issues related to intergenerational communication across lifespan. Letter grading.

**M130. Biomedical, Social, and Policy Frontiers in Human Aging. (5)** (Same as Gerontology M108 and Social Welfare M108.) Lecture, four hours. Limited to juniors/seniors. Course of human aging charted in ways that are based on variety of recent research frontiers. Use of conceptual frameworks to increase relevance of aging to students' lives and enhance their critical thinking—biopsychosocial approach that is based on recognition that aging is inherently interdisciplinary phenomenon, and life course perspective that is distinguished by analytical framework it provides for understanding interplay between human lives and changing social structures, and allows students to understand how events, successes, and losses at one stage of life can have important effects later in life. Focus on individuals as they age within one particular sociohistorical context. Letter grading.

**M131. Diversity in Aging: Roles of Gender and Ethnicity. (4)** (Same as Chicana/o and Central American Studies M106B, Gender Studies M104C, Gerontology M104C, and Social Welfare M104C.) Lecture, four hours. Exploration of complexity of variables related to diversity of aging population and variability in aging process. Examination of gender and ethnicity within context of both physical and social aging, in multidisciplinary perspective utilizing faculty from variety of fields to address issues of diversity. Letter grading.

**134. Politics of U.S. Health Policy. (4)** Lecture, three hours. Students gain firm understanding of process of health policy making in U.S. primarily through lens of debate over national health care reform culminating in passage of Patient Protection and Affordable Care Act (ACA) of 2010 and efforts of opponents to repeal or overturn it. Letter grading.

**135. Firearm Violence Prevention Policy. (4)** Lecture, three hours. Examination of range of topics connected to contemporary debates about firearm violence in U.S. Exploration of causes and consequences of firearm violence in different contexts. Letter grading.

**136. Cannabis Policy and Society. (4)** Lecture, three hours. Designed to enable students to formulate responsible opinions on cannabis legalization, industry,

regulation, and taxation; to defend them with good analysis; and to understand logic behind opinions that may differ from their own. Letter grading.

**137. Gangs, Criminal Justice, and Mass Incarceration. (4)** Lecture, three hours. Exploration of criminal justice policies that surround gangs, sentencing, prisons, incarceration, and rehabilitation. Students develop understanding of how to communicate knowledge and research regarding criminal justice system, gangs, and mass incarceration. Letter grading.

**140. Race, Rights, and Citizenship: Encounters with Bureaucracies. (4)** Lecture, three hours. Examination of role of bureaucracies in emergence of, persistence of, and experience of social inequality. Exploration of dilemmas that bureaucrats face as they do their jobs, and experiences of residents who interact with bureaucrats. Consideration of how peoples' experience of bureaucracies are associated with socioeconomic standing, and reflection on how experiences with bureaucracies convey messages about race, citizenship, and belonging. Letter grading.

**M142. Latino Social Policy. (4)** (Same as Chicana/o and Central American Studies CM177.) Lecture, three hours; discussion, one hour (when scheduled). Examination of social welfare of Latinos (Chicanos, Puerto Ricans, and Cubans) in U.S. through assessment and critical analysis of social policy issues affecting them. Survey of social, economic, cultural, and political circumstances affecting ability of Latinos to access public benefits and human services. Letter grading.

**145. California Policy Issues. (4)** Lecture, three hours. Application of policy analysis to California issues. Guest lectures from practitioners and academics along with readings and videos. Written reports and oral presentations required. Letter grading.

**148. U.S. Housing Policy and Geography of Opportunity. (4)** Lecture, three hours. Exploration of contemporary levels of racial inequality through lens of U.S. housing policy. Study includes historical overview of federal policies; evaluation of ways by which living in racially segregated, high-poverty neighborhoods constrain opportunity and social mobility; exploration of most prevalent affordable housing policies; and evaluation of their respective program designs and outcomes. Letter grading.

**149. International Housing Policy. (4)** Lecture, three hours; discussion, one hour. Study of housing policies in diverse range of countries, contrasting those with U.S. housing policy. Examination of policies in different contexts to better understand how institutional, economic, legal, and cultural contexts shape housing policies and housing outcomes. Letter grading.

**M153. Parking and City. (4)** (Same as Urban Planning CM151.) Lecture, three hours. Requisites: course 40 or Economics 1 or 11. Parking is misunderstood link between transportation and land use. Transportation engineers typically assume that free parking simply is there at end of most trips, while urban planners treat parking as transportation issue that engineers must study. No profession is intellectually responsible for parking, and everyone seems to assume that someone else is doing hard thinking. Mistakes in planning for parking help to explain why planning for transportation and land use has in many ways gone slowly, subtly, incrementally wrong. Study of theory and practice of planning for parking and examination of how planning for parking in U.S. has become planning for free parking. Exploration of new ways to improve planning for parking, transportation, and land use. Letter grading.

**154. Green Transportation. (4)** Lecture, three hours. Introduction to transportation planning and policy from environmental perspective. How to encourage alternatives to private car and reduce air pollution and greenhouse gas emissions. Planning for autonomous vehicles, bicycle, parking, pedestrian, and transit. Environmental justice in transportation. Letter grading.

**M157. Built Environment and Health. (4)** (Same as Urban Planning CM157.) Lecture, three hours. Exploration of important linkages between urban-built environment and public-health outcomes using ecological, urban planning, and community-based lenses through

theory and series of case studies. Knowledge of these linkages is used to propose ecological solutions to issues at nexus of built environment and public health. Letter grading.

**158XP. Trees in City. (4)** Lecture, three hours. Introduction of foundational urban ecological concepts using case of urban trees. Includes wide range of disciplines as well as practitioner and community organizing perspectives to understand social and ecological implications of urban vegetation. Students partner with environmental non-profit located in Los Angeles. Letter grading.

**M159. Politics of Water. (4)** (Same as Urban Planning M168.) Lecture, three hours; discussion, one hour. Access to safe and sustainable water provision is major challenge for governments. Examination of political, economic, and social dimensions of water provision in Asia, Africa, Latin America, and U.S. Key issues include water and state building, market reforms and globalization, social mobilization, and citizen demand making strategies, role of crisis in citizen claims making. Letter grading.

**M160. Urban Sustainability. (4)** (Same as Urban Planning M161.) Lecture, three hours. In 21st century, majority of Earth's population now lives in urban areas and virtually no part of globe remains untouched by human influence. Cities constitute crucibles of most pressing social and environmental challenges but are also potential centers of innovation for addressing those challenges. Examination of theory and practice from geography and related fields to understand many articulations of urban sustainability and how it might be achieved. Letter grading.

**M161. Environmental Justice through Multiple Lenses. (4)** (Same as Environment M167 and Urban Planning M167.) Lecture, three hours. Examination of intersection between race, economic class, and environment in U.S., with focus on issues related to social justice. Because environmental inequality is highly complex phenomenon, multidisciplinary and multi-population approach taken, using alternative ways of understanding, interpreting, and taking action. P/NP or letter grading.

**M164. Science, Technology, and Public Policy. (4)** (Same as Electrical and Computer Engineering CM182 and Public Policy CM182.) Lecture, three hours. Recent and continuing advances in science and technology are raising profoundly important public policy issues. Consideration of selection of critical policy issues, each of which has substantial ethical, social, economic, political, scientific, and technological aspects. Letter grading.

**M165. Advanced Technology: Public Policy, Regulation, and Law. (4)** (Same as Public Policy CM175.) Lecture, three hours. Examination of cutting-edge public policy and regulatory issues implicated by advanced technologies such as artificial intelligence, drones, autonomous vehicles, blockchain/Bitcoin, etc. Exploration of whether and how such new technologies should be regulated. Exploration of how policymakers should balance need to promote investment and innovation against need to protect public against potential misuse and abuse of these new technologies. Exploration of many issues raised by these technologies such as privacy, national security, network neutrality, intellectual property rights, and more. Letter grading.

**170. Civil Society, Nonprofit Organizations, and Philanthropy: Comparative Perspectives. (4)** Seminar, three hours. Increased importance of nonprofits, rise of philanthropy, and (re-)discovery of civil society have moved this set of institutions closer to center of policy agendas. Introduction of conceptual and historical background. Examination of organizational performance and impact. Exploration of key policy issues. Comparative perspective between U.S. and other countries and fields. Letter grading.

**172. Development and Its Governance. (4)** Lecture, three hours. Exploration of how economics, institutions, and politics interact to constrain and shape development strategies—emphasizing tension between normative visions of good economic policy and good

governance and practical challenge of identifying practical ways of fostering change in specific settings. Focus on challenges of development in low- and middle-income settings, with exploration of governance challenges within U.S. Letter grading.

**174. Cultural Policy and Cultural Diplomacy: Soft Power, Creative Economy, Innovation, and Arts. (4)** Lecture, three hours. Culture is one of most complex concepts in social sciences. Review of cultural policies at international, national, and local levels. Exploration of culture as system of meaning and identity, as well as culture as art and creative expression. Examination of use of culture in international relations and cultural diplomacy. Letter grading.

**175. Communications and Conflict in Public Affairs. (4)** Lecture, four hours. Interactive course that prepares students for successful work with collaborators, policymakers, and public. Students gain interpersonal skills, cultural competency; learn effective communication, conflict resolution, and negotiate their interests successfully; learn to engage constituencies and build community around shared goals. P/NP or letter grading.

**M176XP. Making Films about Food. (5)** (Formerly numbered M176SL.) (Same as Community Engagement and Social Change M176XP and Food Studies M176XP.) Lecture, three hours. Introduction to documentary video production and distribution. Students work on assignments in pairs and small groups to create 8- to 10-minute video about one of several Los Angeles partner organizations that advocate for healthy, local, sustainable food. Consideration, through video production, of challenges posed by existing farming, ranching, and distribution methods, and strategies these groups are pursuing to create more sustainable food pathways. Students look at social media communication strategies to help think through intervention in face of historically entrenched industrial food production and regulations that remain favorable to mass-produced, processed food items. P/NP or letter grading.

**M179A. Social Movements in Theory and Practice. (4)** (Same as Public Policy M179.) Lecture, three hours. Social movement is group of people pressuring for political or social change over long periods of time. Study focuses on how mass movements form, when and where they are likely to form, what types of tactics they choose, how those tactics affect their success, and role new technologies play. Weekly focus on one specific topic, such as nonviolence or social media, with historic and more recent movements used as case studies. Letter grading.

**180. Lawyers, Law, and Public Affairs. (4)** Lecture, three hours. Interplay between public affairs, public policy, and law represents one of most significant and fundamental aspects of American democracy. Students gain tools necessary for understanding how law shapes public policy, and how public policy shapes law. Covers key skills for understanding legal reasoning and shows how those skills operate in various substantive legal policy areas. Letter grading.

**187AX-187BX-187CX. Experiential Learning Capstone. (5-5-5)** (Formerly numbered 187A-187B-187C.) Lecture, two hours; discussion, one hour. Course 187AX is requisite to 187BX, which is requisite to 187CX. Limited to and required for senior Public Affairs majors. Students apply public affairs course concepts and methods to internship experience; refine understanding of concepts and methods based on internship experience; gain new knowledge about specific topics related to their internship; and develop new skills needed to complete capstone project. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Seminar: Public Affairs. (4)** Seminar, three hours; outside study, nine hours. Emerging issues in public affairs. May be repeated for credit. Letter grading.

**M191DC. CAPP Washington, DC, Research Seminars. (8)** (Same as Communication M191DC, History M191DC, Political Science M191DC, and Sociology M191DC.) Seminar, three hours. Limited to CAPP Program students. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**M191P. Variable Topics Seminar: Public Policy. (4)** (Same as Public Policy CM191B.) Seminar, three hours; discussion, one hour (when scheduled); outside study, eight hours. Emerging issues in public policy. May be repeated for credit. P/NP or letter grading.

**195. Community or Corporate Internships in Public Affairs. (2 or 4)** Tutorial, to be arranged; fieldwork, six to 12 hours. Limited to juniors/seniors. Internship in supervised setting in corporate, governmental, or nonprofit/community organization setting related to Public Affairs. Students meet with instructor and provide periodic reports of their experience. Individual contract with supervising faculty member required. May be repeated for credit. May not be used toward Public Affairs major capstone requirement; consult with undergraduate adviser. P/NP or letter grading.

**195CE. Community or Corporate Internships in Public Affairs. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit settings coordinated through Center for Community Engagement. Students complete weekly written assignments, attend biweekly meetings with graduate student instructor, and write final research paper. May be repeated for credit with consent of Center for Community Engagement. No more than 8 units may be applied toward major; units applied must be taken for letter grade. May not be applied toward concentration or distribution requirements. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195DC. Quarter in Washington, DC, Internships. (4)** (Same as Community Engagement and Social Change M195DC, History M195DC, Political Science M195DC, and Sociology M195DC.) Tutorial, four hours. Limited to junior/senior Quarter in Washington program students. Internships in Washington, DC, through Center for American Politics and Public Policy. Students meet on regular basis with instructor and provide periodic reports of their experience. Individual contract with supervising faculty member required. P/NP grading.

**196. Research Apprenticeship in Public Affairs. (2 to 4)** Tutorial, three hours per week per unit. Limited to juniors/seniors. Research apprenticeship for upper-division students under guidance of faculty mentor. May be repeated for credit. Individual contract required. P/NP grading.

**198A-198B-198C. Honors Research in Public Affairs. (4-4-4)** Tutorial, to be arranged. Limited to senior Public Affairs majors. Requisites: courses 115, 116. Course 198A is requisite to 198B, which is requisite to 198C. Development and completion of research project and thesis under direct supervision of faculty member. Individual contract required. Letter grading.

**199. Directed Research or Senior Project in Public Affairs. (2 to 6)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for maximum of 16 units. Individual contract required. P/NP or letter grading.

## PUBLIC HEALTH

*Jonathan and Karin Fielding School of Public Health*

A1-269 Center for Health Sciences  
Box 951772  
Los Angeles, CA 90095-1772

Public Health  
310-825-5524

Catherine A. Sugar, PhD, *Chair*

## Faculty Committee

Ronald S. Brookmeyer, PhD (*Biostatistics*)

Burton O. Cowgill, PhD (*Health Policy and Management*)

Marjan Javanbakht, PhD, MPH (*Epidemiology*)

Rachael M. Jones, PhD, MPH, CIH  
(*Environmental Health Sciences*)

Robert Kim-Farley, MD, MPH (*Community Health Sciences, Epidemiology*)

Shira C. Shafir, PhD (*Community Health Sciences, Epidemiology, Health Policy and Management*)

Catherine A. Sugar, PhD (*Biostatistics, Statistics and Data Science*)

## Overview

The profession of public health is responsible for the protection, preservation, and promotion of the health of communities and populations. Although the health problems of today differ from those of the past and will differ from those of the future, the professionals who make up the field need to be trained to respond to broad community problems utilizing the basic ideas of prevention of disease and promotion of well-being. This goal can be achieved only with assessments of the health status of the population through data gathering and analysis, as well as knowledge of how health risk and protective factors such cultural, social, environmental, individual factors influence rates of disease and death in societies and communities.

## Undergraduate Study

Through the completion of program requirements, including a culminating capstone experience, students demonstrate mastery of foundational domains and competencies as established by the Council on Education in Public Health (CEPH). Students trained in public health practices and core concepts are well-equipped to support the development of programs, policies, practices, advocacy, research and data analysis that can improve overall population health. Graduate-level study in public health and its related fields is highly encouraged for motivated students.

## Undergraduate Majors

### Public Health BA

#### Capstone Major

The Public Health major is a designated capstone major. The goal of the capstone is to provide a culminating experience for students in which they complete an integrative, scholarly, or applied project that reflects the knowledge and skills gained in the program to a public health problem or issue.

#### Learning Outcomes

The Public Health major has the following learning outcomes:

- Demonstrated knowledge of concepts and applications of basic statistics
- Demonstrated knowledge of foundations of biological and life sciences
- Demonstrated knowledge of history and philosophy of public health; and its core values, concepts, and functions across the globe and in society
- Demonstrated knowledge of basic concepts, methods, and tools of public health data collection, use, and analysis; and why evidence-based approaches are an essential part of public health practice
- Demonstrated knowledge of concepts of population health; and basic processes, approaches, and interventions that identify and address major health-related needs and concerns of populations
- Demonstrated knowledge of underlying science of human health and disease, including opportunities for promoting and protecting health across the life course
- Demonstrated knowledge of socioeconomic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities
- Demonstrated knowledge of fundamental concepts and features of project implementation including planning, assessment and evaluation
- Demonstrated knowledge of fundamental characteristics and organizational structures of the U.S. health system and differences between systems in other countries
- Demonstrated knowledge of basic concepts of legal, ethical, economic, and regulatory dimensions of health care and public health policy; and the roles, influences, and responsibilities of different agencies and branches of government
- Demonstrated knowledge of basic concepts of public health-specific communication, including technical and professional writing and use of mass media and electronic technology
- Demonstrated proficiency in oral and written communication of public health information through a variety of media to diverse audiences
- Demonstrated proficiency locating, using, evaluating, and synthesizing public health information

## Entry to the Major

### Admission

Admission to the Fielding School of Public Health is by application and competitive—using courses, grades, grade-point averages, and essays as minimum standards for consideration. Only a limited number of students are admitted each year. Applicants are not automatically accepted into the major.

First-year applicants must apply for major standing at the end of winter quarter of their sophomore year. Late applications are not accepted. While recommended, pre-major standing is not required to apply for the major. A copy of the major application is available on the program website.

Transfer students admitted to UCLA under another major are not eligible to apply for the Public Health BA. Transfer students interested in public health are encouraged to pursue the minor instead.

### Pre-major

Incoming first-year students may be admitted as pre-majors. All other students admitted as first years must first meet with an academic adviser in the Undergraduate Student Services Office, A1-269 Center for Health Sciences, before requesting pre-major standing.

### Transfer Students

Transfer applicants to the Public Health BA major with 90 or more units must complete the following preparatory courses prior to admission to UCLA: one general biology course with laboratory, one general chemistry course, and one introductory statistics course. Public Health 50A and 50B must be taken at UCLA upon admission to the University.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* (1) *Introduction to Public Health—Public Health 50A, 50B*; (2) *Principles of Scientific Knowledge—Chemistry and Biochemistry 14A or 17, Life Sciences 7A or 15, Statistics 10 or 13*; (3) *Health and Society*—one course from an approved list available on the school website; (4) *Cultural Competency*—one course from an approved list available on the school website; (5) *Communication Fundamentals*—Communication 1 or any approved Writing II course.

### The Major

*Required:* (1) *Foundations of Public Health Knowledge and Practice*—Biostatistics 120, Community Health Sciences 120, Environmental Health Sciences 120, Epidemiology 120, Health Policy and Management 120; (2) *Public Health Electives*—three upper-division courses (minimum of 12 units) selected from the school's undergraduate course offerings; (3) *Community Engagement*—Public Health 195CE or an approved course; (4) *Capstone Experience*—Public Health 185A, 185B.

## Honors Program

To receive School Honors, students must complete all upper-division courses in the major with an overall grade-point average of 3.5 or better. For highest School Honors, students must also complete a senior thesis. The senior thesis may be satisfied by completing either Public Health 198 or a departmental 198 course. The 198 course may not be counted as an elective course toward the major and must be supervised by an Academic Senate faculty member from the school. Highest honors is awarded if the faculty sponsor deems the work superior.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade.

### The Major

No more than 4 units from courses numbered 195 to 199 may be applied toward the elective requirement.

## Public Health BS

### Capstone Major

The Public Health major is a designated capstone major. The goal of the capstone is to provide a culminating experience for students in which they complete an integrative, scholarly, or applied project that reflects the knowledge and skills gained in the program to a public health problem or issue.

## Learning Outcomes

The Public Health major has the following learning outcomes:

- Demonstrated knowledge of concepts and applications of basic statistics
- Demonstrated knowledge of foundations of biological and life sciences
- Demonstrated knowledge of history and philosophy of public health; and its core values, concepts, and functions across the globe and in society
- Demonstrated knowledge of basic concepts, methods, and tools of public health data collection, use, and analysis; and why evidence-based approaches are an essential part of public health practice
- Demonstrated knowledge of concepts of population health; and basic processes, approaches, and interventions that identify and address major health-related needs and concerns of populations
- Demonstrated knowledge of underlying science of human health and disease, including opportunities for promoting and protecting health across the life course
- Demonstrated knowledge of socioeconomic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities
- Demonstrated knowledge of fundamental concepts and features of project implementation including planning, assessment and evaluation

- Demonstrated knowledge of fundamental characteristics and organizational structures of the U.S. health system and differences between systems in other countries
- Demonstrated knowledge of basic concepts of legal, ethical, economic, and regulatory dimensions of health care and public health policy; and the roles, influences, and responsibilities of different agencies and branches of government
- Demonstrated knowledge of basic concepts of public health-specific communication, including technical and professional writing and use of mass media and electronic technology
- Demonstrated proficiency in oral and written communication of public health information through a variety of media to diverse audiences
- Demonstrated proficiency locating, using, evaluating, and synthesizing public health information

## Entry to the Major

### Admission

Admission to the Fielding School of Public Health is by application and competitive—using courses, grades, grade-point averages, and essays as minimum standards for consideration. Only a limited number of students are admitted each year. Applicants are not automatically accepted into the major.

First-year applicants must apply for major standing at the end of winter quarter of their sophomore year. Late applications are not accepted. While recommended, pre-major standing is not required to apply for the major. A copy of the major application is available on the program website.

Transfer students admitted to UCLA under another major are not eligible to apply for the Public Health BS. Transfer students interested in public health are encouraged to pursue the minor instead.

### Pre-major

Incoming first-year students may be admitted as pre-majors. All other students admitted as first years must first meet with an academic adviser in the Undergraduate Student Services Office, A1-269 Center for Health Sciences, before requesting pre-major standing.

### Transfer Students

Transfer applicants to the Public Health BS major with 90 or more units must complete the following preparatory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C; one year of calculus; one year of general chemistry with laboratory for majors; and one semester of organic chemistry with laboratory. A second semester of organic chemistry and one year of calculus-based physics are recommended. Public Health 50A and 50B must be taken at UCLA upon admission to the University.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.



## Requirements

### Preparation for the Major

*Required:* (1) *Introduction to Public Health*—Public Health 50A, 50B; (2) *Advanced Foundations of Scientific Knowledge*—Chemistry and Biochemistry 14A, 14B, 14BL, 14C, 14CL, 14D, or 20A, 20B, 20L, 30A, 30AL, 30B; Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Statistics 10 or 13; Physics 1A, 1B, 1C, 4AL, and 4BL, or 5A, 5B, and 5C; (3) *Health and Society*—one course from an approved list available on the school website; (4) *Cultural Competency*—one course from an approved list available on the school website; (5) *Communication Fundamentals*—Communication 1 or any approved Writing II course.

### The Major

*Required:* (1) *Foundations of Public Health Knowledge and Practice*—Biostatistics 120, Community Health Sciences 120, Environmental Health Sciences 120, Epidemiology 120, Health Policy and Management 120; (2) *Public Health Electives*—three upper-division courses (minimum of 12 units) selected from the school's undergraduate course offerings; (3) *Community Engagement*—Public Health 195CE or an approved course; (4) *Capstone Experience*—Public Health 185A, 185B.

### Honors Program

To receive School Honors, students must complete all upper-division courses in the major with an overall grade-point average of 3.5 or better. For highest School Honors, students must also complete a senior thesis. The senior thesis may be satisfied by completing either Public Health 198 or a departmental 198 course. The 198 course may not be counted as an elective course toward the major and must be supervised by an Academic Senate faculty member from the school. Highest honors is awarded if the faculty sponsor deems the work superior.

### Policies

#### Preparation for the Major

Each course must be taken for a letter grade.

#### The Major

No more than 4 units from courses numbered 195 to 199 may be applied toward the elective requirement.

## Undergraduate Minor

### Public Health Minor

The Public Health minor is designed for students who wish to learn more about core public health functions, including the assessment and monitoring of the health of communities and populations at risk to identify health problems and priorities, the formulation of public policies designed to solve identified local and national health problems and priorities, the assurance that all populations have access to appropriate

and cost-effective care, and the evaluation of the effectiveness of that care.

### Admission

To enter the Public Health minor, students must be in good academic standing with an overall grade-point average of 2.0 or better, have completed 90 or more units, and apply to the Fielding School of Public Health Student Affairs Office, A1-269 Center for Health Sciences. Acceptance to the minor is competitive and based on grade-point average and an application essay.

### The Minor

*Required Lower-Division Courses (10 units):* *Introduction to Public Health*—Public Health 50A, 50B.

*Required Upper-Division Courses (20 units):* *Foundations of Public Health Knowledge*—three courses selected from Biostatistics 100A, Community Health Sciences 100, Environmental Health Sciences 100, Epidemiology 100, or Health Policy and Management 100; (2) *Public Health Electives*—two upper-division courses (minimum of 8 units) selected from the school's undergraduate course offerings.

### Policies

No more than 4 units from courses numbered 195 to 199 may be applied. Students may complete all five department 100-level courses for the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have a minimum grade of C (2.0) in each and an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

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## PUBLIC HEALTH SCHOOLWIDE PROGRAMS

*Jonathan and Karin Fielding School of Public Health*

16059 Center for Health Sciences  
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Los Angeles, CA 90095-1772

**Public Health**  
310-825-5524

### Overview

The profession of public health is responsible for the protection, preservation, and promotion of the health of communities and populations. Although the health problems of today differ from those of the past and of the future, the professionals who make up the field need to be trained to respond to broad community prob-

lems utilizing the basic ideas of prevention of disease and promotion of well-being. This goal can be achieved only with an understanding of the health status of the population through data gathering and analysis, as well as knowledge of the complex relationships between disease process in the social and biological environment of the community.

The field of public health today needs practitioners from many disciplines. Candidates for graduate study may come from a wide variety of academic backgrounds, training, or experience, including both the natural and social sciences.

## Graduate Majors

### Biostatistics MPH

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Community Health Sciences MPH

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Doctor of Public Health

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Environmental Health Sciences MPH

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Epidemiology MPH

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Health Management MPH

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Health Policy MPH

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Master of Public Health

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Articulated Degree Programs

Articulated degree programs permit no credit overlap; students must complete degree requirements separately for each degree.

- Master of Public Health/Doctor of Medicine
- Master of Public Health/Latin American Studies MA

## Concurrent Degree Programs

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Public Health/Asian American Studies MA
- Master of Public Health/Juris Doctor
- Master of Public Health/Master of Public Policy
- Master of Public Health/Master of Social Welfare

## Public Health

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**50A. Introduction to Public Health I.** (5) Lecture, four hours; discussion, one hour. Systematic exploration of history, philosophy, development, and scope of public health in U.S. and globally. Emphasis on scientific, social, and legal basis for public health practice, including strategies for advancing individual, community, and environmental public health. Survey of core public health functions and essential services with special focus on population health, health equity, environmental justice, and financing of health services. Letter grading.

**50B. Introduction to Public Health II.** (5) Lecture, four hours; discussion, one hour. Prerequisite: course 50A. Exploration of contemporary public health issues and challenges in U.S. and elsewhere with goal to acquaint students with current public health functions, issues, policies, practices, and current strategies for advancing people's health. Letter grading.

**53. Introduction to Health of Underserved and Linguistic Minority Communities.** (4) Lecture, three hours. Population projections, population characteristics, birth rates and outcomes, causes of death and death rates, patterns of reportable diseases, services utilization, patterns of immigration, health insurance, provider training, risk behaviors, and chronic diseases in Latino and other underrepresented minority communities in Los Angeles County. Letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M106. Health in Chicano/Latino Population.** (4) (Same as Chicana/o and Central American Studies CM106.) Lecture, four hours; discussion, one hour. Designed for juniors/seniors. Examination of Chicano/Latino health status through life expectancy, causes of death, reportable diseases, services utilization, provider supply, and risk behaviors within demographic/immigration changes. Binational review of health effects in U.S. and Mexico. Letter grading.

**C150. Fundamentals of Public Health.** (4) (Formerly numbered 150.) Lecture, four hours; discussion, one hour. Limited to nonmajors. Not open for credit to students with credit for course 50A. Exploration of foundations of public health by examining public health challenges at local, national, and global levels, and current strategies for advancing population health. Analysis of current public health issues and modern public health policies and practices. May be concurrently scheduled with course C201. Letter grading.

**185A. Public Health Capstone I.** (4) Seminar, three hours; discussion, one hour. Limited to Public Health majors. Enrollment by consent of school. Culminating experience for students to apply acquired content knowledge and skills to public health problem or issue. Students bring accumulated public health knowledge, skills, and methodological tools to individual or group project theme that is approved by instructor. Required weekly written assignments, participation in review and discussion of other students' work, and development of scope of work that outlines what is to be completed in course 185B. In Progress grading (credit to be given only on completion of course 185B).

**185B. Public Health Capstone II.** (4) Seminar, three hours; discussion, one hour. Enforced prerequisite: course 185A. Students continue independent, or

group work related on theme developed in course 185A. Students share in-progress work and continue to receive guidance from instructor and peer feedback. Students participate in school-sponsored poster session by presenting project outcomes to school and campus community. Letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced prerequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**195CE. Community and Corporate Internship in Public Health.** (4) Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to Public Health minors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Engagement. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty of record and graduate student instructor construct series of reading assignments that examine issues related to working in field of public health. Individual contract with supervising faculty member required. Letter grading.

**196. Research Apprenticeship in Public Health.** (4) Tutorial, one hour. Limited to junior/senior Public Health majors or minors. Entry-level research apprenticeship under guidance of faculty mentor. Collaboration with faculty mentor on research related to public health. May be repeated for credit. Individual contract required. Letter grading.

**198. Honors Research in Public Health.** (4) Tutorial, one hour. Limited to Public Health majors or minors. Development and completion of honors thesis or comprehensive research project under direct supervision of faculty member. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research in Public Health.** (4) Tutorial, one hour. Limited to Public Health majors or minors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Courses

**200A-200B. Foundations in Public Health.** (8-8) Lecture, seven hours; discussion, one hour. Introduction to foundational concepts, definitions, historical milestones, and methods related to five core disciplines of public health. Using traditional lecture presentations, active-learning case-based classroom discussions, lab sessions, and community projects, students learn essential knowledge about public health as well as skills needed to be effective public health professional, including oral and written presentation skills for relevant audiences, data analytic and presentation skills, and multidisciplinary team-building skills working with students from throughout school of public health. Letter grading.

**C201. Fundamentals of Public Health.** (4) Lecture, four hours; discussion, one hour. Limited to school of public health graduate students. Exploration of foundations of public health by examining public health challenges at local, national, and global levels, and current strategies for advancing population health.

Analysis of current public health issues and modern public health policies and practices. May be concurrently scheduled with course C150. Letter grading.

**M273. Responsible Conduct of Research in Global Health. (2)** (Same as Epidemiology M273.) Lecture, two hours. Requisite: Community Health Sciences 200. Introduction to fundamental principles of public health ethics, current ethical procedures, guidelines, and requirements, and ethical issues facing public health professionals working in developing countries. History of public health issues, unique ethical issues of research in developing countries, analysis of ethical implications of informed consent, responsibility to study community, mechanisms of study approval, role of funders, and role and responsibilities of review boards. S/U or letter grading.

**299. Strategies for Success for Doctoral Students. (2)** Seminar, two hours. Interactive seminar, with focus on research process, tips for success in academia, and important tools for leadership designed for all doctoral students in School of Public Health. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**401. Public Health as Profession. (4)** Lecture, four hours. Limited to Fielding School of Public Health graduate students. Introduction to interprofessional collaboration, team building, leadership, communication, cultural humility, and implicit bias, while supporting professional development and growth of Master of Public Health (MPH) students. Focus on development of strong collaborative skills with opportunities to practice benefiting students entering public health workforce. MPH students participate in systems-based health-care course with dental, medical, and nursing students. Letter grading.

**475. Pedagogy: Essential Skills and Innovative Strategies. (2)** Seminar, two hours. Designed for School of Public Health doctoral students. Interactive seminar with focus on developing teaching materials for courses and acquisition of skills and tools that help students to become successful and innovative instructors. Active learning methodologies and competencies-based approach to instruction. S/U or letter grading.

**490. Public Speaking Mastery for Public Health Professional. (2)** Lecture, two hours. Lectures with in-class exercises, or in-class presentations followed by coaching feedback. Topics focus on developing range of communication skills necessary for students to become confident and effective public speakers. Master's and doctoral students in programs housed in School of Public Health who are interested in learning how to prepare and deliver impactful, compelling presentations with confidence and professionalism are encouraged to enroll. S/U or letter grading.

**495. Preparation for Teaching Public Health. (2)** Seminar, two hours. Designed for graduate students. Prepares individuals who will serve as teaching assistants for courses in Fielding School of Public Health. Study of methodologies in teaching public health, including implementing active learning strategies, effectively communicating goals for student learning, developing course materials that are consistent with expectations for student learning, creating inclusive teaching environment, and dealing with difficult situations. S/U grading.

## PUBLIC POLICY

*Meyer and Renee Luskin School of Public Affairs*

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**Public Policy**

310-825-7667

**Department e-mail**

Mark A. Peterson, PhD, *Interim Chair*

## Faculty Roster

### Professors

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Neal Halfon, MD, MPH  
S. Jody Heymann, MD, PhD  
Susanne Lohmann, PhD  
Megan Mullin, PhD (*Meyer and Renee Luskin Endowed Professor of Innovation and Sustainability*)  
Aaron L. Panofsky, PhD  
Mark A. Peterson, PhD  
Thomas H. Rice, PhD  
Gary M. Segura, PhD  
Manisha Shah, PhD (*Franklin D. Gilliam, Jr. Professor of Social Justice*)  
Michael A. Stoll, PhD  
Brian D. Taylor, PhD  
John D. Villaseñor, PhD  
Lynne G. Zucker, PhD

### Professors Emeriti

Albert Carnesale, PhD  
Robert Dallek, PhD  
Franklin D. Gilliam, Jr., PhD  
Arleen Leibowitz, PhD  
Barbara J. Nelson, PhD  
Fernando M. Torres-Gil, PhD  
Charles E. Young, PhD

### Associate Professors

Randall K.Q. Akee, PhD  
Natalie D. Bau, PhD  
Darin E. Christensen, PhD  
Michael C. Lens, PhD  
Meredith Phillips, PhD  
Zachary C. Steinert-Threlkeld, PhD  
Wesley E. Yin, PhD  
J. Christopher Zepeda-Millán, PhD

### Assistant Professors

Tierra S. Bills, PhD  
Jasmine D. Hill, PhD  
Emily K. Weisburst, PhD

### Senior Lecturer SOE

Kenya L. Covington, MCP, PhD

### Lecturers

Michelle Dennis, MPA, CPFO  
Kimberly S. Ling Murtaugh, PhD  
Joseph S. Perman, MPP, PhD  
Steven E. Zipperstein, JD

### Adjunct Professor

Helmut K. Anheier, PhD

### Adjunct Assistant Professors

Siddharth Kara, MBA, GDL

Joshua Schank, PhD

## Overview

The Department of Public Policy is an interdisciplinary unit composed of faculty members from various disciplines, some of whom hold joint appointments in other UCLA departments. Its goal is to foster an understanding of the theory and practice of public policy in the many fields in which it applies. Examples include education, health care, unemployment and training, drug policy and crime, economic development, national security, and the environment. The department offers the Master of Public Policy (MPP) degree and participates in the undergraduate minor in Public Affairs.

## Undergraduate Study

The undergraduate minor in Public Affairs familiarizes students with key issues in public policy. Both programs have a heavy applied orientation. For additional information on the minor, see the [Public Affairs](#) minor.

## Graduate Study

The MPP degree program is designed to train professionals in both public- and private-sector policy analysis and implementation, and offers coursework in such areas as microeconomics, statistics, political processes, and public and nonprofit management.

Concurrent degree programs allow students to combine study for an MPP with work toward a JD in the School of Law, an MBA in the Anderson Graduate School of Management, an MD in the Geffen School of Medicine, an MPH in the Fielding School of Public Health, or an MSW in the Department of Social Welfare.

## Graduate Major

## Master of Public Policy

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Programs

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Public Policy/Doctor of Medicine
- Master of Public Policy/Juris Doctor
- Master of Public Policy/Master of Business Administration
- Master of Public Policy/Master of Public Health



- Master of Public Policy/Master of Social Welfare

## Public Policy

### Lower-Division Courses

**10A. Introduction to Public Policy. (5)** Lecture, three hours; workshops and outside study, three hours. Overview of principal topics of contemporary policy analysis, developing their applications with examples from instructor's own research, visitors, small student projects, or field trips. P/NP or letter grading.

**10B. California Policy Issues. (4)** Lecture, three hours; outside study, nine hours. Application of policy analysis to California issues. Guest lectures from practitioners and academics along with readings and videos. Student written reports and oral presentations required. Letter grading.

**10C. Public Policy for Crime, Cannabis, and Other Drugs. (5)** Lecture, three hours; outside study, twelve hours. Application of policy analysis, including critical analysis, problem solving, and substantive policy research, to develop knowledge and understanding about drug and crime policy, with focus on cannabis. Guest lectures by instructors and guest academics and practitioners, with readings from academic literature and policy reports. P/NP or letter grading.

**10D. Public Policy and Urban Homelessness. (5)** Lecture, three hours; outside study, film review, and field/volunteer work, nine hours. Application of policy analysis to issues and solutions concerning homelessness. Guest lectures from local policymakers. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**105. Leadership in Public Interest. (4)** Lecture, three hours. Examination of prevailing models, theories, and practices of leadership in public settings and application of them through case studies, films, and situational articles. Participation in group projects and discussions designed to improve understanding of role of leadership in mobilizing people groups to do difficult work. Introduction to literature and theory on leadership, examination of leadership and group dynamics, and challenge of leadership in times of stress and change. Letter grading.

**113. Politics of U.S. Health Policy. (4)** Lecture, three hours. Every modern nation faces similar health system challenges, such as promoting health and longevity, providing effective treatments, balancing benefits and burdens of medical technology, and con-

trolling healthcare costs that grow faster than national income. U.S. seems uniquely disadvantaged with lower life expectancy, problematic quality of medical services, lack of insurance for millions, and highest costs in world, hampering families, businesses, and government. What political dynamics produced this result and influence possibility and direction of on-going policy change? Examination of meaning of health and healthcare; international experience; current status, organization, and financing of U.S. health-care system; and factors that affect national health policymaking, including comprehensive healthcare reform: framing of problems, role of public opinion, influence of interest groups, composition and organization of Congress, and opportunities for and applications of presidential leadership. P/NP or letter grading.

**C115. Environmental and Resource Economics and Policy. (4)** Lecture, three hours. Requisites: Economics 11, 143. Survey of ways economics is used to define, analyze, and resolve problems of environmental management. Overview of analytical questions addressed by environmental economists that bear on public policies. Concurrently scheduled with course CM250. Letter grading.

**M120. Race, Inequality, and Public Policy. (4)** (Same as African American Studies M120.) Lecture, three hours; discussion, one hour. Background in economics, sociology, or urban studies preferred but not required. Survey course to examine major debates and current controversies concerning public policy responses to social problems in urban America. Letter grading.

**CM126. Data Analysis for Educational Equity and Improvement. (4)** (Same as Public Affairs M117D.) Lecture, three hours. Requisite: Public Affairs 60. Exploration of challenge of making data useful for decision-making from cleaning data and deciding which analyses to conduct; to conducting those analyses carefully, thoughtfully, and in reproducible way; to displaying results, interpreting them, and communicating them clearly. Focus on challenge of making survey data useful to educators so that they can use those data to reflect on school and district policies and practices and, ultimately, use information to improve students' school experiences. Concurrently scheduled with course C226. Letter grading.

**M127. Understanding Public Issue Life Cycle. (4)** (Same as Political Science M142D.) Lecture, three or four hours; discussion, one hour (when scheduled). Recommended preparation: Political Science 10, 40, and one course from Economics 1, 2, 5, 11, or 101. Examination of how public issue life cycle is shaped by (1) economic and political incentives of various actors—business, news media, mass public, organized interests, Congress, the president, regulatory agencies, and courts and (2) ideology, cognitive biases, and ethical reasoning. P/NP or letter grading.

**C135. Crime and Public Policy. (4)** Seminar, three hours. Crime is one of most costly social problems faced by societies across world. Examination of crime trends, criminogenic factors that influence them, and policy initiatives that influence them, largely in U.S. context. Criminal justice policy community is increasingly focused on best and evidence-based practice, and often derives implication and policy recommendation from existing empirical research. Focus on basic empirical and theoretical research on determinants of criminal offending and effectiveness, and effects of policy interventions meant to address criminal offending. Concurrently scheduled with course C235. Letter grading.

**CM171. International Development. (4)** (Same as Economics M112A.) Lecture, three hours. Requisite: Economics 102 or 111. Why are some countries rich, while other countries are poor? What can policymakers do to reduce poverty? Discussion of current research on these questions. Study of both methodologies used to answer questions in development economics, like natural experiments and randomized control trials, as well as relationship between development and institutions, education, growth, culture, and gender. Reading intensive, seminar-style course. Students are expected to read academic articles in economics and actively participate in discussions. Stu-

dents also learn how to use data to evaluate policies. Concurrently scheduled with course C271. P/NP or letter grading.

**CM175. Advanced Technology: Public Policy, Regulation, and Law. (4)** (Same as Public Affairs M165.) Lecture, three hours. Examination of cutting-edge public policy and regulatory issues implicated by advanced technologies such as artificial intelligence, drones, autonomous vehicles, blockchain/Bitcoin, etc. Exploration of whether and how such new technologies should be regulated. Exploration of how policymakers should balance need to promote investment and innovation against need to protect public against potential misuse and abuse of these new technologies. Exploration of many issues raised by these technologies such as privacy, national security, network neutrality, intellectual property rights, and more. Concurrently scheduled with course C275. Letter grading.

**CM177. Network Science Using R. (4)** (Same as Public Affairs M117B.) Lecture, three hours. No prior knowledge of R required. Designed for juniors and seniors. Network analysis offers framework for understanding how relationships between people, places, and institutions affect public policy outcomes. For example, why individuals decide to protest or vote, amount of education they pursue, or effect of human interference in ecosystem can all be considered using network analysis. Weekly introduction of concept from network analysis, followed by working through it using popular statistical programming language R. Concurrently scheduled with course C277. Letter grading.

**CM179. Social Movements in Theory and Practice. (4)** (Same as Public Affairs M179A.) Lecture, three hours. Social movement is group of people pressuring for political or social change over long periods of time. Study focuses on how mass movements form, when and where they are likely to form, what types of tactics they choose, how those tactics affect their success, and role new technologies play. Weekly focus on one specific topic, such as nonviolence or social media, with historic and more recent movements used as case studies. Concurrently scheduled with course C279. Letter grading.

**CM182. Science, Technology, and Public Policy. (4)** (Same as Electrical and Computer Engineering CM182 and Public Affairs M164.) Lecture, three hours. Recent and continuing advances in science and technology are raising profoundly important public policy issues. Consideration of selection of critical policy issues, each of which has substantial ethical, social, economic, political, scientific, and technological aspects. Concurrently scheduled with course CM282. Letter grading.

**C183. Science Policy and Expertise. (4)** Lecture, three hours. Introduction to social analysis of science and expertise by considering three overlapping themes: social conditions that affect production of scientific knowledge, debates about expertise and democracy in technical and policy decision-making, and current controversies about expertise and autonomy of science (e.g., conflicts of interest in funding of biomedical research and recent charges of politicization of science). Concurrently scheduled with course C283. Letter grading.

**187. Research Seminar: Public Policy. (4)** Seminar, three hours; outside study, nine hours. Requisite: course 10A or Public Affairs 10. Limited to and required of seniors in Public Affairs minor. Production of research project that examines in depth one particular policy issue in its social context, including political pressures involved and problems of implementation. Emphasis on skills of data acquisition and analysis, conceptualization, and written analysis and presentation. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.



**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics Research Seminars: Public Policy. (4)** Seminar, three hours; outside study, nine hours. Examination of particular subfields of policy studies (e.g., international policy, crime policy, policy history) in depth, with specific topics to be identified by instructor. Reading, discussion, and development of culminating project. Must be taken for credit if applied toward Public Affairs minor. May be repeated for credit with topic change. P/NP or letter grading.

**CM191B. Variable Topics Seminar: Public Policy. (4)** (Same as Public Affairs M191P.) Seminar, three hours; discussion, one hour (when scheduled); outside study, eight hours. Emerging issues in public policy. May be repeated for credit. Concurrently scheduled with course C291B. P/NP or letter grading.

**191C. Variable Topics Research Seminars: Public Policy. (2)** Seminar, two hours; outside study, four hours. Examination of particular subfields of policy studies (e.g., international policy, crime policy, policy history) in depth, with specific topics to be identified by instructor. Reading, discussion, and development of culminating project. Must be taken for credit if applied toward Public Affairs minor. May be repeated for credit with topic change. P/NP or letter grading.

**CM191G. Special Topics in Global Studies and Public Policy. (4)** (Same as Global Studies M161.) Seminar, three hours. Examination of one or more topics related to public policy and global studies. May be repeated for credit with topic change. Concurrently scheduled with course C291G. P/NP or letter grading.

**197. Individual Studies in Public Policy. (2 or 4)** Tutorial, four hours. Preparation: 3.0 grade-point average. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**201. Principles of Microeconomic Theory I. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. First course in two-term sequence (see course 204) to prepare students for economic analysis of public policy, with review of economic principles and basic microeconomic theory and policy applications. Consumer theory and demand, producer theory and supply, equilibrium of product and factor markets. Letter grading.

**M201A. Microeconomic Analysis for Public Health and Policy. (4)** (Same as Health Policy M203A.) Lecture, four hours. Requisite: Mathematics 3A or 3B or 31A. Course M201A is requisite to M204A. Basic concepts of microeconomics, with emphasis on their application to actual situations and their use in problem solving and focus on theory of choice. Extensive use of differential calculus. Letter grading.

**202. Politics and Policymaking. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Designed to provide background necessary to develop strategies for shaping policy through different institutions such as legislatures, bureaucracies, courts, and media. Consideration of models of decision-making and delegation and their application to real-world cases. Letter grading.

**203. Statistical Methods of Policy Analysis I. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. First course in two-term sequence (see course 208). Review of statistical principles useful to policy research and analysis. Topics include descriptive statistics, expectations, univariate distribution, probability, covariance and correlations, statistical independence, random sampling, estimators, unbiasedness and efficiency, statistical inference, confidence intervals, and hypothesis testing. Letter grading.

**204. Principles of Microeconomic Theory II. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 201. Second course in two-term sequence (see course 201) covering both theory and policy applications. Topics include monopoly, factor markets, general equilibrium, welfare economics, externalities, public goods, uncertainty, and intertemporal optimization. Letter grading.

**M204A. Microeconomic Analysis for Public Health and Policy. (4)** (Same as Health Policy M203B.) Lecture, four hours. Requisites: course M201A, and one course from Mathematics 3A, 3B, or 31A. Basic concepts of microeconomics, with emphasis on their application to actual situations and their use in problem solving and focus on theories of firms and markets. Extensive use of differential calculus. Letter grading.

**205. Qualitative Methods for Policy Analysis. (4)** Lecture, three hours. Introduction to use of qualitative methods in policy analysis. Students gain exposure to techniques of interviewing, participant observation/ethnography, comparative-case studies, and archival research. Consideration of research design matters including questions and situations for which qualitative methods are ideally suited, and how to use qualitative data when they are best available. Focus maintained on practical dimensions of qualitative methods in policy research including sampling and inferences, instrument design, directed inductive analysis, data gathering and coding under time pressure, and professional ethics. Letter grading.

**206. Political Economy of Policy Adoption and Implementation. (4)** Lecture, three hours; outside study, nine hours. Analysis of how policy is formed, adopted, and implemented. How policies are formulated, by whom, how policy agendas are set, how to define relationships between politicians, bureaucrats, lobbyists, and media experts. Letter grading.

**208. Statistical Methods of Policy Analysis II. (4)** Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 203. Second core course in statistics and quantitative methods for MPP degree. Quantitative studies of public policy, covering regression analysis and its application to public policy questions. Letter grading.

**209. Management in the 21st Century. (4)** Lecture, three hours; outside study, nine hours. Focus on practical management skills to prepare students for workplace. Examination of design, management, and leadership of teams in organizational settings, decision-making strategies in face of challenges, and negotiation as invaluable skill. Examples from public and private sectors, as well as experiential learning through exercises, cases, and simulations. Letter grading.

**210. Methods of Policy Analysis. (4)** Lecture, three hours; discussion, one hour (when scheduled); outside study, nine hours. Preparatory course that precedes three-term 298A, 298B, 298C sequence in which students prepare major public policy projects and papers

that are case studies of policy evaluation and implementation and are equivalent to professional master's theses. Papers build on prior core courses, internship experience, and policy cluster courses. Letter grading.

**M212. Child Welfare Policy. (4)** (Same as Social Welfare M290J.) Lecture, three hours. Development of social policy as it affects families and children from different cultural backgrounds and as it is given form in public child welfare system. Examination of development of infrastructure to support needs of children and families. S/U or letter grading.

**M213. Mental Health Policy. (4)** (Same as Social Welfare M290K.) Lecture, three hours. Examination of evolution of social policy and services for mentally ill, with emphasis on political, economic, ideological, and sociological factors that affect views of mentally ill and services they are provided. S/U or letter grading.

**M214. Poverty, Poor, and Welfare Reform. (4)** (Same as Social Welfare M290L and Urban Planning M246.) Lecture, three hours. Major policy and research issues concerning poverty and social welfare policy directed toward poor in U.S. S/U or letter grading.

**M215. Health Policy. (4)** (Same as Social Welfare M290M.) Lecture, three hours. Introduction to contemporary issues in healthcare financing and delivery, providing historical perspective on emergence of these issues. Examination of major public programs and their relationship to issues of access and cost. S/U or letter grading.

**M216. Public Policy for Children and Youth. (4)** (Same as Social Welfare M290N.) Lecture, three hours. Policy issues that affect children and adolescents in relation to their interaction with schools and community, with emphasis on impact of policy across federal, state, and local levels. S/U or letter grading.

**M217. Graduate Seminar in Environmental Economics and Policy. (4)** (Same as Environmental Health Sciences M217.) Seminar, four hours. Preparation: undergraduate-level statistics, basic undergraduate microeconomics. Introduction to applied scholarship in environmental economics and policy. Enables students to become more proficient consumers and producers of social science research that explores questions of environmental policy and sustainability broadly construed. Topics include health and economic impacts of climate change, adaptation to climate change, efficient and equitable design of environmental policies (e.g., cap and trade, carbon taxes). Development of detailed empirical research proposal and short presentation. Letter grading.

**M218. Research Design and Methods for Social Policy. (4)** (Same as Urban Planning M204.) Lecture, three hours; outside study, nine hours. Limited to graduate students. How to become more sophisticated consumers and producers of qualitative and quantitative policy research. In first half of course, formal principles of research design; in second half, various data collection methods, including ethnography, interviewing, and survey design. Letter grading.

**M220. Transportation, Land Use, and Urban Form. (4)** (Same as Urban Planning M250.) Lecture, three hours. Historical evolution of urban form and transportation systems, intrametropolitan location theory, recent trends in urban form, spatial mismatch hypothesis, jobs/housing balance, transportation in strong central city and polycentric city, neotraditional town planning debate, rail transit and urban form. Letter grading.

**M221. Travel Behavior Analysis. (4)** (Same as Civil Engineering M287 and Urban Planning M253.) Lecture, three hours. Requisites: courses 201 or M201A, and 203, or Urban Planning 207 and 220B. Descriptions of travel patterns in metropolitan areas, recent trends and projections into future, overview of travel forecasting methods, trip generation, trip distribution, mode split traffic assignment, critique of traditional travel forecasting methods and new approaches to travel behavior analysis. Letter grading.

**M222. Transportation Economics, Finance, and Policy. (4)** (Same as Urban Planning M256.) Lecture, three hours. Overview of transportation finance and economics; concepts of efficiency and equity in transportation finance; historical evolution of highway and transit finance; current issues in highway finance; pri-

vate participation in road finance, toll roads, road costs and cost allocation, truck charges, congestion pricing; current issues in transit finance; transit fare and subsidy policies, contracting and privatization of transit services. Letter grading.

**M223. Transportation and Climate Change. (4)** (Same as Urban Planning M258.) Lecture, three hours. How to reduce greenhouse gas emissions from transportation. Critical analysis of policies to improve fuel economy, promote electric vehicles, and reduce vehicle travel. History and legal frameworks of environmental regulation. Analytical methods to quantify carbon emissions and estimate emission reductions. Focus on climate change, but consideration of other environmental consequences of transportation, from air pollution to stormwater runoff. Letter grading.

**224A. Introduction to Geographic Information Systems. (4)** Lecture, three hours. Preparation: one graduate-level statistics course, familiarity with one packaged statistics program. Principles of Geographic Information Systems (GIS) and applied techniques of using spatial data for mapping and analysis. Topics include data quality, data manipulation, spatial analysis, and information systems. Use of mapping and spatial analysis to address planning problem. Letter grading.

**224B. Advanced Geographic Information Systems. (4)** Studio, three hours. Requisite: course M224A. Advanced topics in geographic information systems (GIS) utilizing geoprocessing tools in ArcMap, map design, and spatial analysis. Letter grading.

**225. Education Policy and Education Inequality. (4)** Seminar, three hours; outside study, nine hours. Preparation: statistics background through multiple regression analysis. Limited to graduate students. Examination of policies that may reduce socioeconomic and ethnic disparities in educational success. Topics include international and national comparisons of educational outcomes, private and public school choice, school accountability policies, interventions to improve school or teacher quality, parenting and preschool interventions, and supplemental educational services. Letter grading.

**C226. Data Analysis for Educational Equity and Improvement. (4)** Lecture, three hours. Requisite: Public Affairs 60. Exploration of challenge of making data useful for decision-making from cleaning data and deciding which analyses to conduct; to conducting those analyses carefully, thoughtfully, and in reproducible way; to displaying results, interpreting them, and communicating them clearly. Focus on challenge of making survey data useful to educators so that they can use those data to reflect on school and district policies and practices and, ultimately, use information to improve students' school experiences. Concurrently scheduled with course CM126. Letter grading.

**M227. Politics, Power, and Philanthropy. (4)** (Same as Social Welfare M290S and Urban Planning M287.) Lecture, three hours; outside study, nine hours. Use of political economy perspective to analyze forces that have shaped rise and characteristics of nonprofit sector and its constituent elements. Examination of social history of nonprofit sector in U.S. Exploration of legal and policy environments and distinct organizational forms. Comparative perspective between U.S. and other countries. S/U or letter grading.

**M228. Nonprofit Organizations and Philanthropy: Management and Policy. (4)** (Same as Social Welfare M241E and Urban Planning M288.) Lecture, three hours; outside study, nine hours. Increased importance of nonprofit organizations—as service providers, vehicles of humanitarian assistance, policy advocates, social entrepreneurs, innovators, and as instruments of government reform—have moved this set of institutions closer to center of social welfare, urban planning and public policy agendas. Introduction of conceptual background, examination of theories and aspects of organizational behavior, and management models and policy frameworks. Lectures, seminar-type discussion, in-class presentations, and guest presentations. Letter grading.

**M228B. Global Public Affairs: Governing in Interconnected World. (4)** (Same as Social Welfare M215 and Urban Planning M231.) Lecture, three hours; outside work, nine hours. Conceptually, focus on interplay between three major institutional complexes of modern,

globalizing societies and organizations that operate within them: state, market, and civil society. Study moves between abstract theory and concrete examples, offers sense of where these institutions and organizations have come from, and helps chart their present trajectories. From perspective of governance, assessment of roles and configurations of institutions and organizations to address today's challenges. S/U or letter grading.

**M229. Law and Management of Nonprofit Organizations. (4)** (Same as Management M225.) Lecture, three hours. Introduction to important legal, financial, and management issues confronting nonprofit organizations. Topics include how to start nonprofit tax-exempt organizations, qualifying and maintaining tax-exempt status under IRC Code Section 501(c)(3), corporate governance, political and legislative activity restrictions, and strategic planning, fundraising, nonprofit accounting, and employment law. S/U or letter grading.

**M230. Immigration Policy and Activism. (4)** (Same as Chicana/o and Central American Studies M278.) Seminar, three hours. Highlighting roles of race, gender, sexuality, and citizenship status, exploration of how immigrant rights activists organize for legalization and against detention, deportation, and border militarization. Letter grading.

**M231. Politics of Hood. (4)** (Same as Chicana/o and Central American Studies M206.) Seminar, three hours. Limited to graduate students. Investigation of root causes and consequences of critical problems impacting people who live in hood including poverty, incarceration, gentrification, welfare, public education, health disparities, and segregation, among other political issues. S/U or letter grading.

**M232. Chicana/o and Intersectional Marxismes. (4)** (Same as Chicana/o and Central American Studies M257.) Seminar, three hours. Examination of relationship between Marxism, intersectionality, and early-Chicana/o Marxist influenced intellectual thought. Focus on key debates and texts on connections between race, gender, sexuality, and capitalism. Review of key articles and books examining Chicana/o identity, labor, family, sexuality, and activism through Marxist theoretical framework. S/U or letter grading.

**233. Immigration Policy and Politics. (4)** Seminar, three hours. Introduction to politics of immigration. Examination of development and dynamics of immigration policymaking in historical and contemporary perspective. Focus on issues including creation of illegal immigration, border militarization, detention, deportation, public opinion, political behavior, and assimilation. Letter grading.

**234A. Voting Rights Policy and Law I. (4)** (Formerly numbered M296A.) Clinic, three hours. Collaborative course taught from perspective of social science research, civil rights, and voting rights. Exposes students to voting rights act theory, case law, history, research, and implementation. Faculty guest experts from across campus provide their perspective on how to study, research, and document various aspects related to voting rights. Includes factors such as history of discrimination against minority group in areas of employment, education, housing, and political representation. Students learn and implement in-depth study of methodology and statistical approach to document presence or absence of vote dilution or vote denial in different jurisdictions. Discussion of history and legal principles of federal Voting Rights Act and California Voting Rights Act led by leading voting rights attorney. May be repeated for credit. S/U or letter grading.

**234B. Voting Rights Policy and Law II. (4)** (Formerly numbered M296B.) Clinic, three hours. Requisite: course 234A. Collaborative course taught from perspective of social science research, civil rights, and voting rights. Exposes students to voting rights act theory, case law, history, research, and implementation. Faculty guest experts from across campus provide their perspective on how to study, research, and document various aspects related to voting rights. Includes factors such as history of discrimination against minority group in areas of employment, education, housing, and political representation. Focus on practical aspects of voting rights lawsuit. Students

learn in greater detail legal theory relevant to bringing successful voting rights challenge, and how to assemble and present social science evidence. Students read case law on prior Voting Rights Act decisions, review accompanying expert reports, and work in teams on aspects of lawsuit. S/U or letter grading.

**234C. Voting Rights Policy and Law III. (4)** (Formerly numbered M296C.) Clinic, three hours. Requisites: courses 234A, 234B. Collaborative course taught from perspective of social science research, civil rights, and voting rights. Exposes students to voting rights act theory, case law, history, research, and implementation. Faculty guest experts from across campus provide their perspective on how to study, research, and document various aspects related to voting rights. Includes factors such as history of discrimination against minority group in areas of employment, education, housing, and political representation. Students continue work on all aspects of voting rights cases including preparation of expert research reports, legal argumentation and filings, depositions, and other case-related matters. S/U or letter grading.

**C235. Crime and Public Policy. (4)** Seminar, three hours. Crime is one of most costly social problems faced by societies across world. Examination of crime trends, criminogenic factors that influence them, and policy initiatives that influence them, largely in U.S. context. Criminal justice policy community is increasingly focused on best and evidence-based practice, and often derives implication and policy recommendation from existing empirical research. Focus on basic empirical and theoretical research on determinants of criminal offending and effectiveness, and effects of policy interventions meant to address criminal offending. Concurrently scheduled with course C135. Letter grading.

**236. Criminal Justice Policy on Trial. (4)** Seminar, three hours. Survey of several criminal justice policy areas including labor market effects of incarceration, bias in policing and sentencing, cash bail, and drug policy. Introduction to recent research. Students engage in discussions about current policy, and develop and present policy proposal. Letter grading.

**M240. Theories of Regional Economic Development I. (4)** (Same as Geography M230A and Urban Planning M236A.) Lecture, three hours; discussion, one hour. Introduction to theories of location of economic activity, trade, and other forms of contact between regions, process of regional growth and decline, reasons for different levels of economic development, relations between more and less developed regions. Letter grading.

**M241. Introduction to Regional Planning. (4)** (Same as Urban Planning M230.) Lecture, three hours. Critical and historical survey of evolution of regional planning theory and practice, with particular emphasis on relations between regional planning and developments within Western social and political philosophy. Major concepts include regions and regionalism, territorial community, and social production of space. Letter grading.

**M243. Community Development and Housing Policies: Roles of State, Civil Society, and Nonprofits. (4)** (Same as Social Welfare M290U and Urban Planning M275.) Lecture, three hours; outside study, nine hours. Designed for graduate students. Examination of role of U.S. housing policy and role of government agencies and community organizations. Is problem housing or economic development? Should interventions be directed toward inner city housing markets or through neighborhood strategies? What lessons can be learned from experiences of other countries? Letter grading.

**M243B. Housing Policy and Planning. (4)** (Same as Urban Planning M296.) Lecture, three hours. Study of housing policy and planning focused partly on California given rapid changes occurring in state, with consideration of experiences from other states and countries and to what extent they are relevant here. Specific topics likely include policies such as social housing, rent control, and housing finance, issues of household formation, housing supply, housing submarkets, and gentrification, as well as planning processes related to housing production and Affirmatively Furthering Fair Housing. Letter grading.

**M244. Shared Mobility Policy and Planning. (4)** (Same as Urban Planning M255.) Lecture, three hours. Introduction to planning, analysis, and management of shared mobility systems, with particular focus on public transit. Overview of shared mobility policy and planning context; introduction to transportation planning and project evaluation processes; high-speed rail and airports and aviation; public transit policy and planning, including performance evaluation and route planning; taxis and ADA paratransit, ride-hailing, car-, bike-, and scooter-share; implications of vehicle automation for shared mobility in the years ahead. Letter grading.

**M247B. Comparative Perspective on States, Markets, and Civil Society. (4)** (Same as Social Welfare M290X and Urban Planning M210B.) Lecture, two and one half hours. Governance is about solving and managing societal problems, such as climate change, poverty, migration, security, mobility, pollution, or trade relations. Contemporary governance is complex set of laws, rules, and regulations involving rights and responsibilities of three institutional complexes of modern societies (state, market, and civil society), interests that guide them, and legitimacy and resources they command. Actors often reach across systemic, jurisdictional, and national boundaries; their relationships can be cooperative, neutral, or fraught with conflict, and governance outcomes can vary significantly. These dynamics involve fundamental challenges and, consequently, require significant governance readiness. Lectures, debates, in-class exercises, and student presentations. Exploration of several issues in more detail, e.g., types of state capacities, democracy, crisis management, governance innovation, and specific policy fields such as infrastructure or global finance. S/U or letter grading.

**CM250. Environmental and Resource Economics and Policy. (4)** (Same as Urban Planning M267.) Lecture, three hours. Prerequisites: courses 204 and 208, or Urban Planning 207 and 220B. Survey of ways economics is used to define, analyze, and resolve problems of environmental management. Overview of analytical questions addressed by environmental economists that bear on public policies. Concurrently scheduled with course C115. Letter grading.

**251. Public Budgeting and Finance. (4)** Lecture, three hours; outside study, nine hours. Limited to graduate students. How financial resources are allocated through budget processes at federal, state, and local levels of government in the U.S. and how each level of government finances its operations and capital investment programs, with particular attention to California. Students are organized into small groups to facilitate review of assigned readings and to report key information to class. Based on assigned readings, development of budget strategy matrix outlining best practices budget strategies to use in various resources availability contexts. Letter grading.

**252. Today's Los Angeles and Institutions and Leaders that Make It Work. (4)** Seminar, four hours. Focus on institutions and leaders that make up Los Angeles region and influence its policies and quality of life. Institutions studied include political, governmental, business, economic, media, labor, citizen advocacy, educational, cultural, sports and entertainment, and philanthropic sectors; and how they combine to affect region in which we live. Consideration of how leadership and institutional structures in each of these sectors advance or constrain progress; how Los Angeles addresses issues such as transportation, real estate development, housing, homelessness, poverty, and health care, among others; and how it can better do so. Letter grading.

**M253. Lesbian, Gay, Bisexual, and Transgender Law and Public Policy Research. (4)** (Same as Law M675.) Lecture, three hours. Exploration of relevance of public policy research to lesbian, gay, bisexual, and transgender (LGBT) legal issues. Topics include LGBT identity and demographics, legal recognition of same-sex couples, parenting, workplace discrimination, transgender rights, intersections of race and sexuality, LGBT youth and safe schools, LGBT health disparities, and Don't Ask, Don't Tell. Discussion of social science research that has informed various areas of LGBT law. Themes include doctrinal and other rea-

sons why research has become more central to LGBT legal advancements in past decade, different types of public policy research, limitations of current data and research on LGBT issues, difficulties in translating social science research into evidence in courtroom, impact that dominant LGBT rights frame of equality has on social science research, challenges in conducting objective research, and effective presentation of social science research before legislators, judges, juries, media, and other audiences. S/U or letter grading.

**M265. Pharmaceutical Policy. (4)** (Same as Health Policy and Management M205.) Lecture, three hours. Policy issues pertaining to pharmaceutical sector. Topics include determinants of expenditures on drugs, price setting in industry, health insurance coverage for pharmaceuticals, and research and development process. Letter grading.

**M266. Politics of Health Policy. (4)** (Same as Community Health Sciences M287 and Health Policy and Management M287.) Lecture, three hours; discussion, one hour. Examination of politics of health policy process through analysis of case studies such as environmental protection, pandemic preparedness and response, preventive health services for women, and racial and income inequality and health. Examination of framework for assessing evidence-based policy making and effects of political structure and current political divisions, including efforts such as to repeal and dismantle Affordable Care Act. Letter grading.

**M267. Medicare Reform. (4)** (Same as Health Policy M252.) Lecture, three hours; outside study, nine hours. Designed for graduate students. Analytical and managerial skills learned earlier to be used to analyze problems with existing Medicare program and to develop specific options for reforming features of program to accommodate coming pressures generated by retirement of baby-boom generation. Letter grading.

**M268. Microeconomic Theory of Health Sector. (4)** (Same as Health Policy M236.) Lecture, four hours; discussion, two hours. Preparation: intermediate microeconomics. Microeconomic aspects of health-care system, including health manpower substitution, choice of efficient modes of treatment, market efficiency, and competition. Letter grading.

**M269. Healthcare Policy and Finance. (4)** (Same as Health Policy M269.) Seminar, three hours; outside study, nine hours. Exploration of demand for health insurance, policies for public insurance (Medicaid and Medicare), uninsured, and health insurance reform. Examination of effects of managed care on health and costs, consumer protection movement, and rise of competitive healthcare markets. Letter grading.

**M270. Economic Principles and Economic Development in Indigenous Communities. (4)** (Same as American Indian Studies M207.) Seminar, two hours; discussion, one hour. Limited to graduate students. Familiarization with fundamental concepts, themes, and principles of economic development. Focus on indigenous communities broadly and contrasted with other regions, countries, and communities. Introduction to important concepts such as opportunity cost, economic trade-offs, adverse selection, moral hazard, and discount rates through use of existing research and case studies. These basic concepts are important for graduate students who will be analyzing and evaluating research conducted on and for indigenous peoples and governments. S/U or letter grading.

**C171. International Development. (4)** Lecture, three hours. Why are some countries rich, while other countries are poor? What can policymakers do to reduce poverty? Discussion of current research on these questions. Study of both methodologies used to answer questions in development economics, like natural experiments and randomized control trials, as well as relationship between development and institutions, education, growth, culture, and gender. Reading intensive, seminar-style course. Students are expected to read academic articles in economics and actively participate in discussions. Students also learn how to use data to evaluate policies. Concurrently scheduled with course CM171. S/U or letter grading.

**272. Tools for Causal Inference. (4)** Seminar, three hours. Students strengthen critical analysis of empirical evidence. Review of purpose and objectives of impact evaluation. Evaluation of common but often

problematic approaches: cross-sectional and before-after comparisons, and case studies of program beneficiaries. Examination of suite of experimental and quasi-experimental approaches: randomized controlled trials, matching, regression discontinuities, and difference-in-differences. Letter grading.

**273. Survey Analysis. (4)** Seminar, three hours. Exploration of large-sample size survey use in public policy and related social science disciplines. Topics may include social-psychology of survey response (especially with regard to attitudes and evaluations), issues of question wording and context, interviewer effects, and social desirability pressures; survey-based randomized experiments and nonobtrusive measures of behaviors and attitudes; general issues of quantitative research including model specification, random and systematic measurement error, logic of causal analysis, and alternative meanings of statistical importance; and practical considerations in survey analysis including questionnaire construction, sampling and data collection, weighting, variable coding and transformations, scale construction, reliability, and missing values. Students construct and pretest online survey specific to each one's interests. Letter grading.

**274. Social Media and Public Policy. (4)** Lecture, three hours. Influence of social media on public discourse and public policy, in U.S. and overseas, has been far-reaching and dramatic. Exploration of positive and negative impacts of social media on individuals and society. Topics include tension between free expression and censorship; and public policy implications and responses (or lack thereof) to use of social media as platform for disseminating fake news, conspiracy theories, white nationalism, racism, and violence. Consideration of whether government should impose content rules on social media companies (as Federal Communications Commission does for broadcast media), or whether corporate terms and conditions of service as self-regulatory model should be relied on. Exploration of how to measure relative impact of social media versus money/campaign contributions on current U.S. political system. Letter grading.

**C275. Advanced Technology: Public Policy, Regulation, and Law. (4)** Lecture, three hours. Examination of cutting-edge public policy and regulatory issues implicated by advanced technologies such as artificial intelligence, drones, autonomous vehicles, blockchain/Bitcoin, etc. Exploration of whether and how such new technologies should be regulated. Exploration of how policymakers should balance need to promote investment and innovation against need to protect public against potential misuse and abuse of these new technologies. Exploration of many issues raised by these technologies such as privacy, national security, network neutrality, intellectual property rights, and more. Concurrently scheduled with course CM175. Letter grading.

**M276A. Introduction to Programming and Data Management. (4)** (Same as Education M260A.) Lecture, three hours. Fundamental skills of data management. Development of strong foundation in R programming language. R is most popular language for statistical analysis and one of most popular languages for data science applications (e.g., web-scraping, interactive maps, network analysis). Students become proficient in data management and R programming through weekly problem sets, completed in groups. No prior experience with R required. S/U or letter grading.

**M276B. Fundamentals of Programming. (4)** (Same as Education M260B.) Lecture, three hours. Recommended prerequisite: course M276A. Second course in programming/data science sequence designed for students who do not have programming background. Uses primarily R programming language. Organized around practical programming skills/concepts that are fundamental across modern object-oriented programming languages (e.g., Python, Javascript). Topics include organizing files, folders, and scripts; reading (importing) and writing (exporting) data; using Git and GitHub for version control and collaboration; iteration (e.g., loops); conditional execution; writing functions; strings and regular expressions. These general programming skills are prerequisite for flashier data science applications (e.g., web-scraping, interactive

maps). Students become proficient in programming skills/concepts through weekly problem sets, completed in groups. S/U or letter grading.

**C277. Network Science Using R. (4)** Lecture, three hours. No prior knowledge of R required. Designed for graduate students. Network analysis offers framework for understanding how relationships between people, places, and institutions affect public policy outcomes. For example, why individuals decide to protest or vote, amount of education they pursue, or effect of human interference in ecosystem can all be considered using network analysis. Weekly introduction of concept from network analysis, followed by working through it using popular statistical programming language R. Concurrently scheduled with course CM177. Letter grading.

**C279. Social Movements in Theory and Practice. (4)** Lecture, three hours. Social movement is group of people pressuring for political or social change over long periods of time. Study focuses on how mass movements form, when and where they are likely to form, what types of tactics they choose, how those tactics affect their success, and role new technologies play. Weekly focus on one specific topic, such as non-violence or social media, with historic and more recent movements used as case studies. Concurrently scheduled with course CM179. Letter grading.

**M280A. Research and Development Policy. (4)** (Same as Management-PhD M251.) Lecture, three hours. Examination of research and development as process and as element of goal-oriented organization. Factors affecting invention and innovation; transfer of technology; organizational and behavioral considerations; coupling of science, technology, and organizational goals; assessing of and forecasting technological futures. S/U or letter grading.

**M280B. Growth, Science, and Technology. (4)** (Same as Management M292B.) Lecture, three hours. Economic growth and change. Role of advances in science and technology, and actions of maximizing innovators and factors impinging on their behavior. How technological breakthroughs (or discontinuities) can form new industries or transform nature of and population of firms in existing industries. S/U or letter grading.

**M281. Political Environment of American Business. (4)** (Same as Management M293A.) Lecture, three hours. Evaluation of certain criticisms made by business of American political system. Designed to provide clearer understanding of principal features of American politics, especially as they influence business enterprise. S/U or letter grading.

**CM282. Science, Technology, and Public Policy. (4)** (Same as Electrical Engineering CM282.) Lecture, three hours. Recent and continuing advances in science and technology are raising profoundly important public policy issues. Consideration of selection of critical policy issues, each of which has substantial ethical, social, economic, political, scientific, and technological aspects. Concurrently scheduled with course CM182. Letter grading.

**C283. Science Policy and Expertise. (4)** Lecture, three hours. Introduction to social analysis of science and expertise by considering three overlapping themes: social conditions that affect production of scientific knowledge, debates about expertise and democracy in technical and policy decision-making, and current controversies about expertise and autonomy of science (e.g., conflicts of interest in funding of biomedical research and recent charges of politicization of science). Concurrently scheduled with course C183. Letter grading.

**285. Social Media and Future of Democracy. (4)** Seminar, three hours; outside study, nine hours. Examination of social media's role in both fostering and undermining democratic discourse. Comparison of social media's role with that of traditional media and examination of social media's impact on traditional media. Exploration of possible responses in formal regulation and social media companies' content moderation regimes. Concurrently scheduled with Law 511. Letter grading.

**M286. Policy Analysis of Emerging Environmental Technologies. (4)** (Same as Urban Planning M268.) Lecture, three hours. Acquisition and utilization of economic, finance, planning, and policy analytic tools needed to evaluate factors that drive market adoption from early to middle market phases. Rooftop solar, electric vehicle, and energy efficiency as focal examples, with emphasis on role of policy and planning incentives intended to spur adoption. Letter grading.

**291A. Special Topics in Public Policy. (4)** Seminar, three hours. Emerging issues in public policy. May be repeated for credit. Letter grading.

**C291B. Variable Topics Seminar: Public Policy. (4)** Seminar, three hours; discussion, one hour (when scheduled) outside study, eight hours. Emerging issues in public policy. May be repeated for credit. Concurrently scheduled with course CM191B. S/U or letter grading.

**M291C. Special Topics in Public Affairs. (4)** (Same as Social Welfare M203X and Urban Planning M210A.) Seminar, three hours; outside study, nine hours. Advanced seminar on emerging issues across public policy, social welfare, and urban planning. May be repeated for credit. S/U or letter grading.

**C291G. Special Topics in Global Studies and Public Policy. (4)** Seminar, three hours. Examination of one or more topics related to public policy and global studies. May be repeated for credit with topic change. Concurrently scheduled with course CM191G. Letter grading.

**297A. Public Policy Special Topics. (2)** Lecture, three hours. Study of emerging issues in public policy. May be repeated for credit. S/U grading.

**297B. Public Policy Analysis Lectures. (2)** Lecture, two hours. Limited to second-year MPP students. Venue for policymakers, practitioners, and academics to present, discuss, and analyze current policy questions. Attending, formally analyzing, and engaging with policy professionals at these lectures adds to pedagogical and intellectual maturity of students as they gain greater understanding of broad range of policy-related topics. S/U grading.

**M297C. Current Issues in Public Affairs. (2)** (Same as Social Welfare M297B and Urban Planning M297B.) Lecture, one to two hours. Introduction to wide range of current issues in public affairs. Luskin school faculty present material from their research and teaching. Assigned readings are distributed in advance of each meeting. S/U grading.

**297D. Public Policy Student-Initiated Special Topics. (2)** Seminar, three hours. Student-initiated and -facilitated special topics on emerging issues in public policy. May be repeated for credit. S/U grading.

**M297F. Career Planning and Management. (2)** (Same as Social Welfare M297F and Urban Planning M297F) Tutorial, six hours. Designed to meet professional development needs of first-year Public Policy, Social Welfare, and Urban Planning students. Development of career management skills while balancing busy life of graduate student. More than just deciding on chosen career path, career planning and management involves taking concrete steps to become career ready. Students gain fundamental career management skills to be competitive on job market, including creating competitive résumé and practicing interviewing articulately. Offers opportunity to learn professional development skills to assist with career planning strategies. S/U grading.

**297P. Public Policy Seminar Series. (2)** (Formerly numbered 297C.) Seminar, two hours; discussion, one hour. Weekly social science research lectures covering range of policy-relevant topics and discussion of research findings with professor. Examination of quality and relevance of research findings and connections between research, public policy curriculum, and real-world policy problems. S/U grading.

**298A. Applied Policy Project I. (2)** Seminar, 90 minutes; outside study, four and one half hours. Requisite: course 210. Limited to MPP students. First course of year-long sequence designed to ensure that students and their teams are fully prepared to launch their projects at start of Winter Quarter. Students form teams that are assigned to seminars and instructors, identify clients, select and refine policy questions motivating

their projects, develop and refine basic work plans, learn about various methods of data collection, and complete and submit all necessary forms required for human subjects research. S/U grading.

**298B. Applied Policy Project II. (4)** Seminar, three hours; outside study, nine hours. Preparation: completion of MPP core curriculum, two policy cluster courses, and internship (unless waived). Requisite: course 298A. Second course in four-course sequence in which students prepare major public policy projects and papers that are case studies of policy evaluation and implementation and are equivalent to professional master's theses. Papers build on prior core courses, internship experience, and policy cluster courses. In Progress grading (credit to be given only on completion of course 298C).

**298C. Applied Policy Project III. (2)** Seminar, three hours; outside study, six hours. Preparation: completion of MPP core curriculum, two policy cluster courses, and internship (unless waived). Requisite: course 298B. Third course in four-course sequence in which students prepare major public policy projects and papers that are case studies of policy evaluation and implementation and are equivalent to professional master's theses. Papers build on prior core courses, internship experience, and policy cluster courses. Conclusion of written report started in course 298B. Letter grading.

**298D. Applied Policy Project IV. (2)** (Formerly numbered 298C.) Seminar, two hours. Preparation: completion of MPP core curriculum, two policy cluster courses, and internship (unless waived). Requisite: course 298B. Fourth course in four-course sequence in which students complete research and report writing for their year-long projects, conduct oral presentations of their applied policy projects, and give written feedback on other student presentations. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**496. Public Policy Internships. (4)** Fieldwork, four hours. Public policy internships for Master of Public Policy (MPP) and MPP/dual degree students. May not be repeated for credit. S/U grading.

**596. Directed Studies. (2 to 8)** Tutorial, to be arranged. Limited to graduate students. Individual programming for selected students to permit pursuit of a subject in greater depth. S/U or letter grading.

## RADIATION ONCOLOGY

*David Geffen School of Medicine*

B265 UCLA Morton Medical Building  
Box 956951  
Los Angeles, CA 90095-6951

**Radiation Oncology**

310-825-9775

**Michael L. Steinberg, MD, FASTRO,  
FACR, Chair**

**Minsong Cao, PhD, DABR, FAAPM, Vice  
Chair, Academic Mission  
Development**

**James M. Lamb, PhD, Vice Chair,  
Division of Medical Physics**

**Nicholas G. Nickols, MD, PhD, Vice Chair,  
VA Services**



Ann C. Raldow, MD, MPH, *Vice Chair, Education*

Joanne B. Weidhaas, MD, PhD, MS, *Vice Chair, Division of Molecular and Cellular Oncology*

## Overview

The Department of Radiation Oncology includes clinical divisions at the UCLA Medical Plaza and Reagan UCLA Medical Center, UCLA Santa Monica Medical Center, and West Los Angeles VA Medical Center and includes the Division of Brachytherapy, Division of Molecular and Cellular Oncology, and Medical Radiation Physics. Laboratory, clinical, and translational research are facilitated at all locations.

The primary clinical mission of the department is the management of patients who have cancer. The purpose of using radiation therapy, rather than or in addition to surgery, is to preserve function and/or cosmesis while eliminating the cancer. Other activities include total body irradiation before bone marrow transplantation, stereotactic body radiotherapy, brachytherapy-therapy, and stereotactic radio-surgery for A-V malformations, meningiomas, and malignant intracranial lesions. Research interests include clinical trials, radiation biology, radiation modifiers, molecular biology, immunology, and applied physics. Knowledge of the disease in question, the comparative efficacy of radiation therapy and other methods, radiation biology and pathophysiology, and the physical characteristics of various radiations is essential.

The educational programs serve medical, dental, basic science (biology and physics), nursing, and radiation therapy students, and community and postgraduate physicians; there also is a four-year program for residents who are qualifying for certification in radiation oncology by the American Board of Radiology.

For more details on the Department of [Radiation Oncology](#) and courses offered, see the department website.

[Radiation Oncology faculty](#) information is available from the department.

## Radiation Oncology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Course

**199. Directed Research in Radiation Oncology. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## RADIOLOGICAL SCIENCES

*David Geffen School of Medicine*

1638 Ronald Reagan Medical Center  
Box 957351  
Los Angeles, CA 90095-7351

### Radiological Sciences

Residency Program, 310-267-8797

### Residency e-mail

Fellowship Program, 310-267-8796

### Fellowship e-mail

Dieter R. Enzmann, MD, *Chair*

Robert D. Suh, MD, *Vice Chair, Education*

## Overview

The Department of Radiology is committed to offering its trainees high-level instruction, unique experience, and comprehensive evaluation necessary to succeed in all systems practicing diagnostic radiology, combining outstanding patient care and excellence in clinical imaging, research, and educational programs with state-of-the-art technology.

The Diagnostic Radiology program currently has 48 resident positions and is conducted at five major teaching hospitals within and associated with the Geffen School of Medicine. Rotating through all five facilities, the resident gains a broad exposure to all types of disorders, both the commonplace and unusual. The 48-month program leads to eligibility for examination and certification by the American Board of Radiology.

The Interventional Radiology Integrated residency program offers quality medical educational experience in image-based diagnosis, image-guided procedures, and peri- and post-procedural patient care. The five-year residency curriculum concentrates on diagnostic radiology during the first three years and interventional radiology during the last two years, leading to dual certification in interventional and diagnostic radiology.

The programs aim to guide residents in attaining mastery of the clinical skills needed to become highly accomplished radiologists. Residents are provided with outstanding and comprehensive education and educational experiences with the purpose of developing advocates for the practice of radiology, who will serve as critical interdisciplinary team members by providing ethical, professional, and valuable medical expertise to patients and colleagues.

For more details on the Department of [Radiological Sciences](#), see the department website.

[Radiological Sciences faculty](#) information is available from the department.

## RELIGION, STUDY OF

*Interdepartmental Program  
College of Letters and Science*

378 Kaplan Hall  
Box 951511  
Los Angeles, CA 90095-1511

### Study of Religion

310-206-8799

Carol A. Bakhos, PhD, *Chair*

## Faculty Committee

Carol A. Bakhos, PhD (*Near Eastern Languages and Cultures*)

Stephanie Balkwill, PhD (*Asian Languages and Cultures*)

John P. Carriero, PhD (*Philosophy*)

Jeffrey J. Guhin, PhD (*Sociology*)

Stephanie W. Jamison, PhD (*Asian Languages and Cultures*)

Eleanor K. Kaufman, PhD (*Comparative Literature, English, European Languages and Transcultural Studies*)

Terence D. Keel, PhD (*African American Studies, Society and Genetics*)

Gina V. Konstantopoulos, PhD (*Near Eastern Languages and Cultures*)

Diego Loukota Sanclemente, PhD (*Asian Languages and Cultures*)

Ronald W. Vroon, PhD (*Slavic, East European, and Eurasian Languages and Cultures*)

Luke B. Yarbrough, PhD (*Near Eastern Languages and Cultures*)

## Overview

The undergraduate major in Study of Religion equips students to understand and compare creatively the worldwide varieties of core convictions, stories, texts, rituals, and practices known collectively as religion. Students complete courses in a wide range of departments in which religious phenomena are analyzed, including anthropology, art history, Asian languages and cultures, classics, comparative literature, English, history, Near Eastern languages and cultures, philosophy, political science, and world arts and cultures/dance. Students can anticipate gaining versatile intellectual tools for approaching, analyzing, and appreciating the deep roots, human motivations, and history of the formation of religious traditions in their respective cultural contexts. Within this interdepartmental program, students may focus in depth on one or more specific religions. Students may wish to select this major in combination with a second major field, a minor, or related language study.

## Undergraduate Major

### Study of Religion BA

#### Capstone Major

The Study of Religion major is a designated capstone major. Students must complete an advanced seminar that provides unique opportunity to work closely with a faculty member on a focused topic of research. Through their capstone work students are expected to demonstrate their ability to plan and carry out a major project, apply subject matter and research methods knowledge to produce a paper or other research project, and organize information into a coherent and persuasive form for oral presentation to their peers.

#### Learning Outcomes

The Study of Religion major has the following learning outcomes:

- Demonstrated ability to plan a major project that concludes with writing a cogent and convincing document
- Application of knowledge of a wide-ranging bibliography and of methods of research to thoroughly prepare for seriously engaging an interviewee or for writing the prospectus describing the major project
- Development of skills essential to taking oral histories or doing field research in Los Angeles' multicultural population
- Ability to organize research data into a coherent and persuasive form for oral presentation to peers
- Demonstrated empathy as a critic of a wide array of religious traditions, institutions, and practices

### Entry to the Major

#### Transfer Students

Transfer applicants to the Study of Religion major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one history of religions course, one philosophy of religion course, and two courses from sociocultural anthropology, Buddhism, history of Western civilization, Asian civilizations, civilizations of Africa, and history of China.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Study of Religion M4 or 11, and two courses from Ancient Near East 10W, Anthropology 3, Asian M60, History 1A, 1B, 1C, 9A, 9C, 9D, 9E, M10A, 10B, 11A, 11B, Philosophy 2, 21, Study of Religion M10, M50, M60A through M60E, M60W, M61, M61W.

#### The Major

*Required:* Twelve upper-division courses, including (1) Study of Religion 101, 191 (capstone seminar), (2) one *theory and methods*

course from Anthropology 130, 142P, Study of Religion 110, 120, 150, 160, 177, 180, M186C, (3) two *religious ideas, practices, and institutions in context* courses from Ancient Near East 162, Anthropology 114P, 162, 168P, Arabic 120, Art History CM115A, C120, 150A, 152A, 154A, 154B, 156, Asian 151, 162, Chinese 165, C175, Classics 166A, 166B, M167, English 111A, 111B, 111C, 145, 156, Greek 130, Hebrew 120, 130, History 108A, 121B, 174A, M182C, 185B, Iranian 170, Japanese 161, Jewish Studies M150A, Korean 165, 172, Philosophy 100B, 104, 107, 155A, Study of Religion M105A, M105B, M105C, M106A, M107, M108, M132, M133, M135, 140, M142C, M155, M161A through M161D, M172, M173C, M174D, M174E, M178, M182A, M182B, M184A, M185D, M186A, M186B, World Arts and Cultures C142, C151, (4) seven elective courses selected from items 2 and 3 above.

Students are encouraged to select courses that focus on a specific religious tradition or traditions, or on a set of thematic issues important to the study of religion.

#### Honors Program

Students admitted to honors should take three Study of Religion 198 courses under the guidance of the sponsoring professor. The first 198 course should be taken in spring quarter of the junior year, the second during the following fall quarter, and the third during winter quarter of the senior year. The three courses count as part of the regular requirement of 12 upper-division courses. The program culminates in an honors thesis.

### Policies

#### The Major

During their senior year students must complete the capstone seminar, Study of Religion 191.

A course may be taken twice, on different topics, for credit toward the major where repetition is allowed by the department offering the course. A maximum of two upper-division courses in an ancient language relevant to the course of study may be applied toward the major requirements with consent of the adviser.

A maximum of 12 units of special studies courses (197, 198, 199) approved by the adviser may be applied toward the major. Each course for preparation for the major and the major must be taken for a letter grade.

#### Honors Program

The honors program provides exceptional students with an opportunity to do independent research under the tutorial guidance of a faculty member.

To qualify for admission students should have a minimum grade-point average of 3.4. The 198 courses designed for the program and the thesis topic should be approved by the committee in charge of the major.

For more information, contact the student affairs officer or the faculty adviser at the program address.

## Undergraduate Minor

### Study of Religion Minor

#### Admission

To enter the Study of Religion minor, students must have an overall grade-point average of 2.0 or better.

#### The Minor

*Required Lower-Division Courses (4 to 10 units):* Study of Religion M4 or 11, or M50 and M60A or M60W.

*Required Upper-Division Courses (24 to 29 units):* Study of Religion 101 and five courses selected from *theory and methods* (Anthropology 130, 142P, Study of Religion 110, 120, 150, 160, 177, 180, M186C) and from *religious ideas, practices, and institutions in context* (Ancient Near East 162, Anthropology 114P, 162, 168P, Arabic 120, Art History CM115A, C120, 150A, 152A, 154A, 154B, 156, Asian 151, 162, Chinese 165, C175, Classics 166A, 166B, M167, English 111A, 111B, 111C, 145, 156, Greek 130, Hebrew 120, 130, History 108A, 121B, 174A, M182C, 185B, Iranian 170, Japanese 161, Jewish Studies M150A, Korean 165, 172, Philosophy 100B, 104, 107, 155A, Study of Religion M105A, M105B, M105C, M106A, M107, M108, M132, M133, M135, 140, M142C, M155, M161A through M161D, M172, M173C, M174D, M174E, M178, M182A, M182B, M184A, M185D, M186A, M186B, World Arts and Cultures C142, C151).

Students are encouraged to select courses that focus on a specific religious tradition or traditions, or on a set of thematic issues important to the study of religion.

### Policies

A course may be taken twice, on different topics, for credit toward the minor where repetition is allowed by the department offering the course. A maximum of 4 units of special studies courses (197, 198, 199) approved by the adviser may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Study of Religion

### Lower-Division Courses

**M4. Introduction to History of Religions. (5)** (Same as History M4.) Lecture, three hours; discussion, two hours. Comparative study of eight major religious traditions, with emphasis on their beginnings and subsequent decisive changes in their respective historical developments and interactions. Equips students with intellectual tools necessary for thinking analytically, empathetically, and comparatively about fascinating human phenomena identified as religious, such as sa-

cred acts, places, words, and persons in their varied historical contexts. Development of student skills in critical thinking, analyzing documents, and making persuasive arguments based on historical evidence. P/NP or letter grading.

**M10. Introduction to Judaism. (5)** (Same as Jewish Studies M10.) Lecture, three hours; discussion, one hour. Judaism's basic beliefs, institutions, and practices. Topics include development of biblical and rabbinic Judaism; concepts of god, sin, repentance, prayer, and the messiah; history of Talmud and synagogue; evolution of folk beliefs and year-cycle and life-cycle practices. P/NP or letter grading.

**11. Religion in Los Angeles. (5)** Lecture, four hours. Introduction to varieties of religious experience in Los Angeles and its environs. Presentations, required readings, and (where possible) site visits to examine selected faiths and spiritual practices throughout Southern California and provide deeper understanding of myriad ways that sacred is made manifest and encountered. Foundational academic orientations within study of religion (anthropological, historical, psychological, sociological, etc.) used as framework to examine and interpret almost unparalleled religious diversity of City of Angels. Recognizing that spiritual traditions are crucial reflection of region's ever-changing demographics, emphasis on role of ethnicity, gender, nationality, and race in shaping of religious landscape. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Introduction to Islam. (5)** (Same as Islamic Studies M20.) Lecture, three hours; discussion, one hour. Genesis of Islam, its doctrines, and practices, with readings from Qur'an and Hadith; schools of law and theology; piety and Sufism; reform and modernism. P/NP or letter grading.

**M40. Christianities East and West. (5)** (Same as Slavic M40.) Lecture, three hours; discussion, one hour. Survey of three major historical branches of Christianity—Eastern and Oriental Orthodoxy, Roman Catholicism, and Protestantism, contrasting how history, dogma, culture, and community structures develop in those three traditions. P/NP or letter grading.

**M50. Origins of Judaism, Christianity, and Islam. (5)** (Same as Ancient Near East M50B and Middle Eastern Studies M50B.) Lecture, three hours; discussion, one hour. Examination of three major monotheisms of Western cultures—Judaism, Christianity, and Islam—historically and comparatively. Development, teachings, and ritual practices of each tradition up to and including medieval period. Composition and development of various sacred texts, highlighting key themes and ideas within different historical and literary strata of traditions, such as mechanisms of revelation, struggle for religious authority, and common theological issues such as origin of evil and status of nonbelievers. Letter grading.

**55. Spirit of Medicine. (5)** Lecture, three hours; discussion, one hour. Examination of relationship between medicine, religion, and society; how religion is help or hindrance to health; and what health care might look like beyond biomedical clinic. Examination of historical entwinement of religion, medicine, and society in Western antiquity to early modern period; disentanglement in Enlightenment to early 20th century; and confluence of science, technology, and capitalism in biomedicine compartmentalized from religion today. Conceptualization of rhetorics and epistemologies of healing—what it means to be healed and how one would know—and put in tension with faith healings and religion-as-medicine, medicine-as-religion, and integrated approaches. Analysis of alternatives to biomedical status quo in theoretical medicine and in health care delivery, with particular attention to questions of justice and holistic care in U.S. and of policy and practice globally. P/NP or letter grading.

**M60A. Introduction to Buddhism. (5)** (Same as Asian M60.) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course M60W. Knowledge of Asian languages not required. General survey of development of Buddhism in India,

with focus on those religious doctrines and meditative practices most essential to various Asian traditions of Buddhism. Letter grading.

**M60B. Introduction to Chinese Religions. (5)** (Same as Chinese M60.) Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course M61W. Knowledge of Chinese not required. General survey of religious life in China, with emphasis on everyday religious practice over doctrine, and themes common to Buddhism, Daoism, and Confucianism. P/NP or letter grading.

**M60C. Introduction to Korean Religions. (5)** (Same as Korean M60.) Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. General survey of history of religions in Korea—Shamanism, Buddhism, Confucianism, Daoism, Christianity, Tonghak, and some new religions—with focus on religious doctrines, practices, Korean characteristics, and social impacts. P/NP or letter grading.

**M60D. Religion in Classical India: Introduction. (5)** (Same as South Asian M60.) Lecture, three hours; discussion, one hour. Introduction to religions of classical India—Vedic, Brahmanical, Hindu, Jain, and Buddhist—paying equal attention to change and continuity, with emphasis on chronological development. P/NP or letter grading.

**M60E. Religious Traditions in Southeast Asia. (4)** (Same as Southeast Asian M60.) Lecture, three hours. Introduction to historical development and contemporary practice of religions in Southeast Asia. Examination of indigenous religious beliefs and major textually based religions introduced to region, including Hinduism, Buddhism, Islam, and Christianity. P/NP or letter grading.

**M60W. Introduction to Buddhism. (5)** (Same as Asian M60W.) Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course M60A. Knowledge of Asian languages not required. General survey of Buddhist worldview and lifestyle, with focus on those religious doctrines and meditative practices most essential to various Asian traditions of Buddhism. Particular attention to problems involved in study of religion. Satisfies Writing II requirement. Letter grading.

**M61. Introduction to Zen Buddhism. (5)** (Same as Asian M61.) Lecture, three hours; discussion, one hour. Knowledge of Asian languages not required. Introduction to Zen traditions and to interplay between Zen and other fundamental cultural and religious concerns in East Asia. Topics include role of Zen within Buddhist thought and practice, artistic and literary arts, society, and daily life. Letter grading.

**M61W. Introduction to Chinese Religions. (5)** (Same as Chinese M60W.) Lecture, three hours; discussion, one hour. Enforced requisite: English Composition 3 or 3H or English as a Second Language 36. Not open for credit to students with credit for course M60B. Knowledge of Chinese not required. General survey of religious life in China, with emphasis on everyday religious practice over doctrine, and themes common to Buddhism, Daoism, and Confucianism. Satisfies Writing II requirement. Letter grading.

**M70. Demons, Fear, and Uncanny in Ancient World. (5)** (Same as Ancient Near East M70.) Lecture, three hours; discussion, one hour. Consideration of place of demons and fear in several different societies and cultures in ancient world: Mesopotamia; ancient Egypt, Greece, and Rome; and Biblical and early Jewish contexts. Investigation into why demons and monsters existed in these cultures; how they were opposed or protected again; and what these different societies feared, and how that fear was represented. As demons and monsters are reflections of particular culturally specific fears and norms, studying them allows for examination of societies that constructed them. Examination of how fear of threats such as disease, illness, and death were constructed alongside fears of foreign and of women. Critical examination of wide range of primary source texts, addressing core question of how different societies construct unique fears—and how those fears shape those societies in turn. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. History of Study of Religion. (4)** Lecture, four hours. Recommended requisite: History 4. Survey of major modern theories, methods, and approaches to study of religion to situate them within their own historical, philosophical, and social contexts. Critical consideration of changing and contested meanings of term religion and its relationship to such categories as science and magic, as well as to other domains of social experience. Examination of how study of religion has interacted with other academic fields, especially biblical studies, anthropology, sociology, psychology, and evolutionary biology. P/NP or letter grading.

**M105A. Bahá'í Faith in Iran: Historical and Sociological Survey. (4)** (Same as Iranian M105A.) Lecture, three hours. Readings in English. Rise and development of Bábí and Bahá'í religions in context of 19th century Iran. Focus on personalities of Báb, Bahá'u'lláh, and 'Abdu'l-Bahá. May be taken independently for credit. P/NP or letter grading.

**M105B. Bahá'í Faith in Iran: Survey of Bahá'í Scriptures and Thought. (4)** (Same as Iranian M105B.) Lecture, three hours. Readings in English. Analysis of major writings by Báb, Bahá'u'lláh, and 'Abdu'l-Bahá. Emphasis on mystical and social principles. May be taken independently for credit. P/NP or letter grading.

**M105C. Bahá'í Faith in Iran: 20th-Century Iran and the Bahá'ís. (4)** (Same as Iranian M105C.) Lecture, three hours. Readings in English. Focus on history of 20th-century Iran beginning with constitutional revolution, development and persecution of Bahá'í community, and latter's relation to reform movements in Iran. May be taken independently for credit. P/NP or letter grading.

**M106A. Premodern Islam. (4)** (Same as History M106.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of early development of Islam with special attention to doctrine of nature of God, human responsibility, guidance, revelation and religious authority, duties of believers, ritual, law, sectarian movements, mysticism, and popular religion. P/NP or letter grading.

**M107. Islam in West. (5)** (Same as Arabic M107 and Islamic Studies CM107.) Lecture, three hours; discussion, one hour. Acquisition of understanding of basic doctrines and practices of Islam. Survey of history of Islam in West, with focus on U.S. and France. Analysis of issues relevant to growth and development of selected Muslim communities in West. Exposure to diverse expressions of Islam through independent research on Muslim communities and institutions in U.S. Development of strong analytical writing and speaking skills. P/NP or letter grading.

**M108. Qur'an. (4)** (Same as Arabic CM106.) Lecture, three hours. Introduction to Qur'an, its early history, and form and function as scripture in Muslim history, civilization, and culture. Focus also on Qur'anic interpretation, its relationship to Islamic law, and Qur'an in

contemporary discourses such as human rights, feminism, and contemporary reform movements. Primary sources include excerpts from Qur'an, Qur'anic interpretation, and selected writings of Muslim thinkers and reformists. Strong focus on analytical and writing skills through in-class assignments and discussion. Letter grading.

**110. Religion and Violence. (4)** Seminar, three hours; discussion, one hour. Exploration of capacity of religion to mobilize and legitimate violence. Materials include theoretical texts by Rene Girard, Walter Burkert, Jonathan Z. Smith, and David Rapoport and case studies dealing with religion and violence in India, Northern Ireland, Egypt, Lebanon, Israel, Palestine, Sri Lanka, and the U.S. Letter grading.

**M115. Islam and Other Religions. (5)** (Same as Islamic Studies CM115.) Lecture, three hours; discussion, one hour. Students gain familiarity with historical cases and modes of interaction between Muslims and non-Muslims in plural societies. Consideration of axis questions such as how does Qur'an reflect religious plurality; how does it situate Islam vis-à-vis its alternatives; what encounters did rapid expansion of Islam bring about in diverse societies; how did Islam and other religions change through debate, war, and exchange of ideas; what roles has political power played in conditioning interreligious interaction; how have conversion and hybridity affected what it means to be Muslim; what is different about interreligious interactions in secular states and societies; and how is past invoked to justify opinions and policies today. Investigation of these questions by conducting microstudies: close readings of sources through theoretical lens. P/NP or letter grading.

**118B. Kierkegaard and Philosophy of Religion. (4)** (Same as Philosophy M118B.) Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Study of selected works of Kierkegaard on philosophy of religion, with emphasis on interpretation of texts. P/NP or letter grading.

**120. Judaism, Christianity, and Islam: Comparative Approach. (4)** Seminar, three hours. Introduction to analysis of complex relationship of Judaism, Christianity, and Islam as living traditions whose historical origins, current interactions, and future development continue to shape spiritual, cultural, political, and social aspects of human civilization in 21st century. Letter grading.

**M132. Ancient Egyptian Religion. (5)** (Same as Ancient Near East M130.) Lecture, three hours; discussion, one hour. Introduction to religious beliefs, practices, and sentiments of ancient Egypt to study Egyptian religion as coherent system of thought and sphere of action that once served as meaningful and relevant framework for understanding physical reality and human life for inhabitants of Nile Valley. General principles as well as developments through time (circa 3000 BC to 300 CE). Topics include mythology, temple and cult, magic, and personal piety. P/NP or letter grading.

**M133. Bible and Qur'an. (4)** (Same as Middle Eastern Studies M133.) Lecture, three hours. Survey of Hebrew Bible/Old Testament, New Testament, and Qur'an to familiarize students with content of scriptures of Judaism, Christianity, and Islam, and socio-cultural background from which these multifarious texts emerged, and to explore major themes and consider variety of approaches to scripture. Development of appreciation for role scripture plays in these religious systems and in American culture and society. P/NP or letter grading.

**M135. Religion in Ancient Israel. (4)** (Same as Ancient Near East M135.) Lecture, three hours. Introductory survey of various ancient Israelite religious beliefs and practices, their origin, and development, with special attention to diversity of religious practice in ancient Israel and Canaan during 1st millennium BCE. P/NP or letter grading.

**140. Undergraduate Seminar: Study of Religion. (4)** Seminar, three hours. Interdisciplinary approach to some major topics in study of religion, such as religion and politics, mysticism, ideas of revelation, myth and religion, worship and ritual. May be repeated for credit with consent of instructor. P/NP or letter grading.

**M142C. History of Religion in U.S. (4)** (Same as History M142C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Consideration of religious dimension of people's experience in U.S. Examination of number of religious traditions that have been important in this country, with emphasis on relating developments in religion to other aspects of American culture. P/NP or letter grading.

**150. Women, Gender, and Religion. (4)** Lecture, four hours. Investigation and consideration of roles, status, and representations of women and gender in one or more religious traditions. Examination of how cultural conceptions of gender as well as social realities (as far as they can be known) for women and men in particular historical periods shape and are shaped by these religious traditions, including discussions regarding ritual practices, spirituality, sexuality, sexual renunciation, religious authority, marriage and family life, fertility, conceptions of body, public life, and/or literary representations of gender (including those of divine). Variety of approaches to be employed, including feminist, literary, historical, sociological, and anthropological. P/NP or letter grading.

**M155. Angels, Demons, and End of World: Magic, Mysticism, and Apocalypse in Jewish Traditions. (4)** (Same as Jewish Studies M155.) Lecture, three hours. Focus on popular Jewish traditions of magic, mysticism, apocalypse, and various contours of Judaism's textual and material traditions in antiquity. Examination of texts and objects from Hebrew Bible to modern discussions of Kabbalah and end of world, concentrating on Jewish antiquity. Discussion of texts, including Hebrew Bible, Dead Sea Scrolls, extra-biblical Jewish texts, New Testament, and rabbinic and later Jewish literature. Discussion of sociohistorical context in order to decipher features and functions of magic, mysticism, and apocalypse in antiquity and modernity. P/NP or letter grading.

**160. Religion, Film, and Media. (4)** Lecture, four hours. Examination of complex relationship between religious traditions and various media (e.g., print, film, photography, television, radio, and electronic) as they have intersected in specific historical and cultural contexts. Illumination of role of media in forming and expressing religious ideas, practices, and identities. Topics may include representations of religious groups, visual and aural piety, identity formation, interreligious conflict, religious education, and use of media technologies for propaganda or proselytizing purposes. Historical, sociological, and anthropological approaches used in concert with various methodologies current within media studies. P/NP or letter grading.

**M161A. Chinese Buddhism. (4)** (Same as Chinese CM160.) Lecture, three hours; discussion, one hour. Knowledge of Chinese not required. Introduction and development of Buddhism in China, interaction between Buddhism and Chinese culture, rise of Chinese schools of Buddhism. Letter grading.

**M161B. Japanese Buddhism. (4)** (Same as Japanese CM160.) Lecture, three hours; discussion, one hour. Knowledge of Japanese not required. Development of Buddhism in Japan in its cultural context, with emphasis on key ideas and teachings. Letter grading.

**M161C. Korean Buddhism. (4)** (Same as Korean CM160.) Lecture, three hours; discussion, one hour. Knowledge of Korean not required. Introduction and development of Buddhism in Korea, interactions between indigenous Korean culture and Sinitic traditions of Buddhism, Korean syntheses of imported Buddhist theological systems and meditative techniques, and independent Son (Zen) schools of Korea. Letter grading.

**M161D. Buddhism in India. (4)** (Same as South Asian CM160.) Lecture, three hours; discussion, one hour. Knowledge of Indian languages not required. Overview of social and doctrinal history of Buddhism from its origin to its disappearance in India, based not only on texts but on archaeological, art historical, and inscriptional sources. Examination of both formal doctrine and actual practices and on what learned Buddhists wrote and ordinary Buddhists did, saw, and made. Letter grading.

**M172. Bible and Its Interpreters. (4)** (Same as Ancient Near East M170.) Lecture, three hours. Knowledge of original languages not required. Bible (Old and

New Testaments) as book. Canon, text, and versions. Linguistic, literary, historical, and religious approaches to Bible study. Survey of history of interpretation from antiquity to present. P/NP or letter grading.

**M173C. Shinto, Buddhism, and Japanese Folk Religion. (4)** (Same as History M173C.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Social dimension of various Ways, great and little: Shinto's connection with cultural nationalism, Buddhism's medieval Reformation and Zen's relation to warrior culture, folk religious aspects such as shamanism, ancestor worship, and millenarianism. P/NP or letter grading.

**M174D. Indo-Islamic Interactions, 700 to 1750. (4)** (Same as History M174D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Historical introduction to Muslim communities of what eventually became nations of India, Pakistan, and Bangladesh. Topics include social, political, religious, and cultural history. P/NP or letter grading.

**M174E. Indo-Islamic Interactions, 1750 to 1950. (4)** (Same as History M174E.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Examination of interplay of factors that, from Christian missionaries to Islamic madrasa schools and colonial rebellions, gave shape to multifaceted Muslim reformation in context of colonial modernity. P/NP or letter grading.

**M175. Topics in Philosophy of Religion. (4)** (Same as Philosophy M175.) Lecture, three hours; discussion, one hour. Prerequisite: Philosophy 21 or 22. Intensive investigation of one or two topics or works in philosophy of religion, such as attributes of God, arguments for or against existence of God, or relation between religion and ethics. Topics announced each term. May be repeated for credit with consent of instructor.

**177. Variable Topics in Religion. (4)** Seminar, three hours. Interdisciplinary approach to some major topics in study of religion, such as religion and science, religion and society, politics, mysticism, ideas of revelation, scripture, myth and religion, worship and ritual. May be repeated for credit with topic change. P/NP or letter grading.

**M178. Variable Topics. (4)** (Same as Middle Eastern Studies M178.) Seminar, three hours. Interdisciplinary approach to some major topics in study of religion and Middle Eastern studies. May be repeated for credit with topic change. P/NP or letter grading.

**M179. Topics in Moral Philosophy: Evil. (4)** (Same as Philosophy M152B.) Lecture, three to four hours; discussion, one hour (when scheduled). Preparation: one philosophy course. Exploration of philosophical issues raised by topic of evil actions and/or evil people. Issues may include nature of evil, problem of evil and theodicies, responsibility for evil and problem of free will, causes and motivations for evil action, and variant responses to evil such as forgiveness and punishment. P/NP or letter grading.

**180. Religion and Modern Critical Thought. (4)** Lecture, four hours. Examination of how various traditions of modern critical thought inform academic study of religion, with primary focus on philosophical analysis of religious belief and practice and its relation to other areas of theoretical discussion, such as philosophy of language, discourse analysis, epistemology, metaphysics, ethics, practice theory, and political theory. Topics may include nature of religious experience and its epistemic status, embodiment and religious self, relationship between knowledge, faith, and doubt, nature and function of religious language, relationship between science and religion, religious belief and standards of rational discourse, theoretical approaches to problems of religious diversity and competing truth claims, formation of religious and secular in modernity. P/NP or letter grading.

**M182A. Ancient Jewish History. (4)** (Same as History M182A and Jewish Studies M182A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Survey of social, political, and religious developments. P/NP or letter grading.

**M182B. Medieval Jewish History. (4)** (Same as History M182B and Jewish Studies M182B.) Lecture, three hours; discussion, one hour (when scheduled).



Designed for juniors/seniors. Exploration of unfolding of Jewish history from rise of Christianity to expulsion of Jews from Spain in 1492. P/NP or letter grading.

**M184A. Jewish Civilization: Encounter with Great World Cultures. (4)** (Same as History M184A and Jewish Studies M184A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Exploration of dynamic and millennia-old interaction of Jews with great world cultures. Creative adaptations that have lent Jewish culture its distinct and various forms. P/NP or letter grading.

**M185D. Religions of Ancient Near East. (4)** (Same as Ancient Near East M185D and History M185D.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Main polytheistic systems of ancient Near East, with emphasis on Mesopotamia and Syria and with reference to religion of ancient Israel: varying concepts of divinity, hierarchies of gods, prayer and cult, magics, wisdom, and moral conduct. P/NP or letter grading.

**M186A. History of Early Christians. (4)** (Same as History M185F.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Christian movement from its origins to circa 160 CE, stressing its continuity/discontinuity with Judaism, various responses to Jesus of Nazareth, writings produced during this period, movement's encounters with its religious, social, and political world, and methods of research. P/NP or letter grading.

**M186B. Religious Environment of Early Christians. (4)** (Same as History M185G.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Rich variety in religious practice and thought in Mediterranean world of 1st century CE as in context of developing Christian movement. Topics include Pharisees, Qumran, Philo, Stoics, Epicureans, traditional Greek and Roman religions, mysteries, astrology, magic, gnosticism, and emperor-worship. P/NP or letter grading.

**M186C. Jesus of Nazareth in Historical Research. (4)** (Same as History M185I.) Lecture, three hours; discussion, one hour (when scheduled). Recommended preparation: course M185F. Designed for juniors/seniors. Stimulated by significant post-Enlightenment historical evaluations, students are led into firsthand knowledge (in translation) of various multilayered sources for reconstruction of life, teaching, and initial impact of Jesus of Nazareth in his social, economic, political, and religious contexts. P/NP or letter grading.

**187XP. Religion, Society, and Civic Engagement. (4)** (Formerly numbered 187SL.) Seminar, three hours; fieldwork, two hours. Examination of variable topics related to religion and civic engagement, with particular emphasis on justice and coexistence in pluralistic societies. How are we to best enact—or manage—clashing visions of what Los Angeles is and ought to be; theoretical and practical ways citizens work out tensions in what city of angels means. Key themes may include cities and utopia, secularism and secularism, political economy, trust, solidarity, access, equality, liberty, philanthropy, and eschatology. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Study of Religion. (4)** Seminar, four hours. Preparation: completion of preparation for major courses and at least half of upper-division courses required for major (in-

cluding theory and method courses). Designed for senior majors. Seminar on central method and/or theme in study of religion. Refinement and integration of this knowledge by means of close reading and analysis of primary documents, debating contested issues, and researching and writing original paper. P/NP or letter grading.

**198. Honors Research in Religion. (4)** Tutorial, three hours. Limited to juniors/seniors. Development and completion of 40-page honors thesis under direct supervision of faculty member. Must be taken twice to receive departmental honors program credit. Individual contract required. May be repeated for a maximum of 12 units. Letter grading.

**199. Directed Research in Study of Religion. (2 to 4)** Tutorial, one hour. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper or project required. Twelve units may be applied toward major. Individual contract required. Letter grading.

## RESEARCH PRACTICE

*College of Letters and Science*

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[Research Practice](#)

310-825-2935

[Program e-mail](#)

Muriel C. McClendon, PhD, *Humanities, Arts, and Social Sciences Chair*

Craig A. Merlic, PhD, *Sciences Chair*

## Faculty Committee

Tama W. Hasson, PhD (*Integrative Biology and Physiology*)

Beth A. Lazizzera, PhD (*Microbiology, Immunology, and Molecular Genetics*)

Muriel C. McClendon, PhD (*History*)

Craig A. Merlic, PhD (*Chemistry and Biochemistry*)

## Overview

The Research Practice subject area includes interdisciplinary courses in the practice of research. Hosted by the [Undergraduate Research Center—Sciences](#) and the [Undergraduate Research Center for Humanities, Arts and Social Sciences](#), research practice courses cover the development of research questions and the application of methodologies, as well as forms of qualitative and quantitative analysis, and research communications and publications. The courses combine theory and practice, and emphasize experiential learning. Students do not just gain knowledge and skills in their discipline; they also develop an understanding of how knowledge is created and applied across the university.

Research practice courses expand on important skills for success in research, and also explore how research skills integrate into a variety of careers. Research practice courses are not associated with one department; students in any major can enroll. Some courses are associated with a research, journal, or scholarship program, and acceptance into that program is required to enroll. Other courses have an open

enrollment. For more information see [Research Practice—UCLA Undergraduate Research](#).

## Research Practice

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**96. Bruins Studying Bruins: Introduction to Higher Education Research through Course-Based Collaborative Research Project. (2)** Seminar, two hours. Course-based research experience that introduces students to higher education institutional research, assessment, and accreditation. Students collaborate on research assessment project that is used toward campus instructional improvements and its accreditation documentation. P/NP grading.

**97XA. PEERS Freshman Seminar: Succeeding in Science. (1)** (Formerly numbered Ecology and Evolutionary Biology 97XA.) Seminar, one hour. Limited to students in Program for Excellence in Education and Research in Sciences (PEERS). Series of lectures, workshops, and discussions to enhance student success in sciences by developing critical academic survival skills, acquainting students with practice of science, and highlighting opportunities available to participate in research as undergraduate students. P/NP grading.

**97XB. PEERS Sophomore Seminar: Pathways in Majors, Careers, and Entry into Research. (1)** (Formerly numbered Ecology and Evolutionary Biology 97XB.) Seminar, one hour. Limited to students in Program for Excellence in Education and Research in Sciences (PEERS). Series of lectures and workshops to enhance student success in sciences by acquainting students with practice of science, opportunities available to participate in research as undergraduate students, and careers available to students with science degrees. P/NP grading.

**97XC. Transfer Success and Pathways to Undergraduate Research for Life Sciences Majors. (4)** Seminar, one hour. Limited to new transfer students. Designed to provide essential academic skills for life science transfer students, and promote engagement in university research including instruction on securing research opportunities and skills necessary for research and professional success, communication of research, and exploring funding resources and life science careers. P/NP grading.

**97XD. Research Unwrapped: Introduction to Research in Sciences. (1)** Seminar, two hours. Exposes students to university research and wide array of research practices in sciences. Introduction to benefits of undergraduate research, scientific method, information and publication search strategies, science communication, and degree and careers requiring research experience. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**102. Research Practice: Research Revealed. (2)** (Formerly numbered 191A.) Seminar, two hours. Limited to students participating in Research Revealed undergraduate research preparation program. Students are prepared to conduct their own research, apply to research programs, or assist faculty members. Topics vary by term. P/NP grading.

**103. Research Practice: Student Research Forum.** (2) Lecture/activities, four hours. Designed to promote deep engagement in university research, including instruction on securing research opportunities, skills necessary for research and professional success, exploring research internships on and off campus, and communication of research across all disciplines. P/NP grading.

**105. Effective Science Communication.** (2) Seminar, two hours. Effectively communication science in essential for careers in science, technology, engineering, and mathematics. Designed to strengthen and practice skills of sharing science. Emphasis on verbal communication and presentations, drawing on storytelling techniques to craft more compelling talks. Students have many hands-on experiences with presenting their research in different formats, for different audiences, and with different objectives. P/NP grading.

**110A. Careers in Libraries and Archives.** (2) (Formerly numbered Honors Collegium 101M.) Seminar, two hours. Study of wide variety of careers in libraries and archives. Introduction to career pathways of various professionals. Brief discussion of professional issues in these fields especially in relation to recruitment and retention of individuals in these professions. Discussion of careers in variety of locations and types of libraries and archives, with emphasis on outstanding professionals at UCLA. Stronger focus on careers in academic spaces. P/NP grading.

**110B. Preparing for Post-UCLA Success: Fellowships, Graduate School, and More.** (2) (Formerly numbered Honors Collegium 101K.) Seminar, two hours. Prepares students to achieve goals beyond UCLA. Participants reflect on values and interests, and learn what is required for effective applications to graduate school, scholarships, and more. Review of process of applying for nationally competitive awards such as Truman, Rhodes, Marshall, and others. Students learn to craft effective curricula vitae, strong personal statements, and compelling research proposals. Students learn to solicit strong letters of recommendation. Skills are preparation for scholarship/fellowship application process, as well as graduate school and job application process. P/NP grading.

**120. Research Today: Sources, Tools, and Strategies.** (2) Seminar, two hours. Research is process of exploration, experimentation, and discovery. Study is designed to help students engage with this process and prepare for research-intensive honors thesis. Students collaborate with peers, mentors, and experts across UCLA campus as they develop their own approach to research. P/NP grading.

**130. Integrity in Science Research.** (2) Seminar, two hours. Limited to students in funded research programs, or completing individual study senior thesis. Exploration of research integrity and discussion of important ethical issues that impact scientific investigation. Presentation of major issues in field of research ethics and integrity. Students work together in small groups to present and lead discussions on ethical dilemmas. Focus on research integrity issues that impact broad group of undergraduate researchers on UCLA campus. Student presentations are topical in nature, and vary from year to year based on recent ethical events. P/NP grading.

**182. Developing Your Research Skills: Reading, Writing, and Sharing Academic Research in Humanities and Social Sciences.** (4) Seminar, three hours; workshop, three hours. Designed for visiting juniors and seniors in Mellon Mays Undergraduate Fellowship program who are engaged in multi-year research projects in humanities and social sciences at home institutions. Focus on development of three important research skills: reading scholarly writing, writing for scholarly audiences, and presenting research for academic and general audiences. Students are supported in producing seven to eight pages of polished writing in form of literature review, thesis chapter, or another meaningful unit of writing as agreed upon with instructor. Students learn to write abstract and present work orally and visually. Approaches reading, writing, and sharing academic research as ongoing, iterative

processes. Students gain necessary tools to succeed in all parts of research process. Concludes with symposium in which work is presented. P/NP grading.

**192A. UCLA Undergraduate Science Journal.** (2) Seminar, two hours. Designed to guide students through critical aspects of preparing UCLA Undergraduate Science Journal for publication. These aspects of writing, reviewing, editing, and formatting articles for publication are essential to research process for sharing findings and engaging with broader scientific and engineering community. Students develop teamwork and project management skills that can help in future career paths. May be repeated for maximum of 10 units. P/NP grading.

**192B. Undergraduate Research Journal for Humanities and Social Sciences.** (2) (Formerly numbered Honors Collegium 101C.) Seminar, two hours. Limited to students on editorial board of Aleph journal. Students participate in workshops to assess, edit, and publish journal articles. May be repeated for maximum of 10 units. P/NP grading.

**193. Variable Topics: Research Practice Journal Club.** (2) (Formerly numbered Neurobiology M171 and Physiological Science M171.) Seminar, two hours. Limited by application. Centered on presentation and critical analysis of scientific journal articles, and presentation of students' own research. Intensive literature-based training program which increases student confidence and scientific literacy, and facilitates transition to postgraduate study. May be repeated for maximum of 10 units. P/NP grading.

**194A. Mellon Mays Undergraduate Fellows Research Seminar.** (2) (Formerly numbered Honors Collegium 101J.) Seminar, two hours. Limited to current Mellon Mays undergraduate fellows. Designed to support students in their research, and in preparation for graduate school and professional careers. May be repeated five times for credit. P/NP grading.

**194B. Research Seminar: Writing Research Proposals and Graduate Applications.** (2) Seminar, two hours. Research seminar for undergraduates applying in fall for science, technology, engineering, and mathematics (STEM) PhD or MS programs. Designed to support students in their research, and in preparation for graduate school and professional careers. Letter grading.

**194C. Mastering Oral Presentation of Your Research.** (2) Seminar, two hours. Examination of best practices in oral presentation of scientific research. Familiarization with rubric used to evaluate oral research presentations given by graduate students and peers. Students present their research, tailored to diverse audience of science-savvy students, and give feedback to their peers. Oral and written feedback is used to help students revise their talks. Culminates with second research presentation by each student. Letter grading.

**195. Research Activities.** (4) Tutorial, 12 hours. Designed to provide academic context for off-campus, remote work at research institutions outside of UCLA. Students work independently with graduate student mentor to learn about research teams, discuss management of research protocols and data, and work weekly on science writing, culminating in production of research abstract and assembly of research paper. May be repeated for credit up to two consecutive quarters. Individual contract required. Letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

# SCIENCE EDUCATION

*Interdisciplinary Minor*  
College of Letters and Science

1037 Young Hall  
Box 951569  
Los Angeles, CA 90095-1569

Science Education

310-794-2191

Minor e-mail

Patricia E. Phelps, PhD, *Co-Chair*  
Arlene A. Russell, PhD, *Co-Chair*

## Faculty Committee

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Eric J. Deeds, PhD (Integrative Biology and Physiology)

Neil K. Garg, PhD (Chemistry and Biochemistry)

Rashmita S. Mistry, PhD (Education)

Gaston M.U. Pfluegl, PhD, *ex officio* (Life Sciences)

Patricia E. Phelps, PhD (Integrative Biology and Physiology)

Jody Z. Priselac, EdD (School of Education and Information Studies)

Arlene A. Russell, PhD (Chemistry and Biochemistry, Education)

Joshua F. Samani, PhD (Physics and Astronomy)

Shanna Shaked, PhD, MAT, *ex officio* (Environment and Sustainability)

## Overview

The Science Education minor provides preparation for careers where teaching is an important component, including middle and high school, community college, university, or other science-related outreach careers. Students who wish to become middle or high school science teachers and who plan to teach as graduate students in their disciplines are the primary focus. The minor supplies the broad general science background included in California state subject matter credential examinations, education coursework, field experiences in the development, management, and teaching of science laboratory instruction in grades 7 through 12, and UCLA-based teaching practicums in lower-division science laboratory.

## Undergraduate Minor Science Education Minor

### Admission

Students eligible for admission to the Science Education minor should be making normal progress on the preparation for a major in the sciences or engineering whether they have declared such a major or not. They must have completed nine courses selected from the following, with at least one course from each of the four categories: (1) Chemistry and Biochemistry 14A, 14B, 14BL, 14C, 14CL (or 20A,



20B, 20L, 30A, 30AL), (2) Life Sciences 7A, 7B, 7C, 23L, (3) Mathematics 3A, 31A or Life Sciences 30A, and (4) Physics 1A, 1B, 4AL, 4BL (or 5A, 5B, 5C). Prior participation in a supervised experience in schools is recommended.

To enter the minor, students must be in good academic standing with an overall grade-point average of 2.0 or better. Students must consult with the academic coordinator responsible for the minor to plan a coherent program to complete both the minor and their major, prior to filing a petition to enter the minor.

## The Minor

**Required Lower-Division Courses (6 to 8 units):** Science Education 1XP or 10XP or 15XP, and Earth, Planetary, and Space Sciences 1 (Earth, Planetary, and Space Sciences 101 or C113 or Atmospheric and Oceanic Sciences 101 or 102 or 103 may be substituted for course 1).

**Required Upper-Division Courses (22 units minimum):** (1) Education 127, (2) Science Education 100XP, (3) at least three units selected from Chemistry and Biochemistry 192A, 192B, Life Sciences M192A, 192B, 192C, 192D, 192E, Physics 192M, M192S, Physiological Science 192A, 192B, and (4) at least one and no more than two courses selected from Education M102, M103, 104A, 105B, 106A, 107A, 107B, M108, C111, 123, 126, M131A, 132, M136, 139, 141.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units must be taken in residence at UCLA.

Each minor course, except Science Education 1XP, 10XP, or 15XP, must be taken for a letter grade, with a grade of C or better in each, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Science Education

### Lower-Division Courses

**1XP. Classroom Practices in Elementary School Science. (2)** (Formerly numbered 1SL.) Seminar, 90 minutes; fieldwork, three hours per week for eight weeks. Introduction for prospective science teachers to field of elementary education and teaching and learning of science in elementary school classrooms. Pairs of students are placed in local elementary school classrooms to observe, participate, and assist mentor teachers in instruction. Introduction to inquiry-based learning practices, national and California standards, reading and learning differences in children, and cognitive ability of elementary-age children as it relates to introduction of concepts, curricular planning, classroom management, and learning assessment. P/NP grading.

**10XP. Classroom Practices in Middle School Science. (2)** (Formerly numbered 10SL.) Seminar, 90 minutes; fieldwork, three hours. Introduction for prospective science teachers to field of secondary education and teaching and learning of science in middle school classrooms. Pairs of students are placed in local middle school classrooms to observe, participate, and assist mentor teachers in instruction. Discussion of learning in middle school culture, cognitive develop-

ment of students at this level, and best means to teach appropriate science concepts at this level. P/NP grading.

**15XP. Exploration of K-12 Classroom Practices in Science Education. (3)** Seminar, two hours; fieldwork, two hours. Introduction to field of K-12 science education including equity and access, pedagogy, and career exploration. Examination of broad range of student developmental levels and science learning progressions from kindergarten to high school. Pairs of students are placed in local elementary, middle, or high school classrooms to observe, participate, and assist mentor teachers in instruction. Students engage in fieldwork lesson study including identifying Next Generation Science Standards (NGSS), lesson development, lesson implementation, and lesson reflection. P/NP grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100XP. Classroom Practices in High School Science. (5)** (Formerly numbered 100SL.) Seminar, three hours; service learning fieldwork, three hours. Recommended prerequisite: course 1XP or 10XP. Introduction for prospective science teachers to field of secondary education and teaching and learning of science in high school classrooms. Pairs of students are placed in local high school classrooms to observe, participate, and assist mentor teachers in instruction. Discussion of learning in high school culture, cognitive development of students at this level, and best means to teach appropriate science concepts at this level. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

# SLAVIC, EAST EUROPEAN, AND EURASIAN LANGUAGES AND CULTURES

*College of Letters and Science*

322 Kaplan Hall  
Box 951502  
Los Angeles, CA 90095-1502

[Slavic, East European, and Eurasian Languages and Cultures](#)

310-825-3856

[Department e-mail](#)

Igor Pilshchikov, PhD, *Chair*

## Faculty Roster

### Professors

Lilya Kaganovksy, PhD  
Roman Koropecy, PhD  
Gail D. Lenhoff, PhD  
Igor Pilshchikov, PhD  
Ronald W. Vroon, PhD (*Vladimir and Lydia Markov Professor of Russian Literature*)

### Professors Emeriti

Henning Andersen, PhD  
Peter C. Hodgson, Jr., PhD  
Emily R. Klenin, PhD  
Aleksandr L. Ospovat, PhD

### Associate Professor

Vadim Shneyder, PhD

### Senior Lecturers

Susan C. Kresin, PhD  
Anna Kudyma, PhD

### Lecturers

Melinda Borbely, MA  
Anca M. Cuptor, PhD  
Yelena Furman, PhD  
Dennis T. Keen, MA  
Viktorija Lejko-Lacan, PhD

### Adjunct Professor

Vladimir Paperny, PhD

## Overview

The Department of Slavic, East European, and Eurasian Languages and Cultures offers a wide array of courses in the languages and cultures of Russia and of central and eastern Europe. Instruction is offered in Czech, Hungarian, Polish, Romanian, Russian, Serbian/Croatian, and Ukrainian to provide students with the necessary linguistic skills to pursue advanced work in the literature, culture, history, politics, and social structures of these areas. Students have the choice of several majors and minors and the opportunity to enhance their knowledge and skills through programs of study abroad.

## Undergraduate Study

The department offers three majors: (1) Central and East European Languages and Cultures, (2) Russian Language and Literature, and (3) Russian Studies. The equivalent of a major in Central and East European Languages and Cultures or Russian Language and Literature is normally required for admission to the department graduate program and is used to determine the number of courses in Russian literature and/or linguistics that students majoring in Russian Studies are expected to make up in order to receive graduate degrees in the department. Students not majoring in Central and East European Languages and Cultures or Russian Language and Literature who intend to pursue graduate study in the department are strongly encouraged to take courses in Russian literature and linguistics during their undergraduate years to reduce the number of makeup courses required. Qualified seniors may also take graduate courses numbered below 220 with consent of the instructor and the graduate and undergraduate advisers.

## Undergraduate Majors

### Central and East European Languages and Cultures BA

The major in Central and East European Languages and Cultures is designed to provide students with a mastery of one language of central or eastern Europe and familiarity with the literature, as well as general background in the cultural, political, and social history of the Slavic peoples.

### Capstone Major

The Central and East European Languages and Cultures major is a designated capstone major. Students must complete a capstone seminar and present their final paper in the department annual Undergraduate Research Conference. Students draw on their previously acquired subject matter knowledge and skills to plan a research project and write a substantial academic paper. They also gain experience engaging in scholarly discourse, preparing appropriate media for public presentation, and submitting their work to an academic journal.

### Learning Outcomes

The Central and East European Languages and Cultures major has the following learning outcomes:

- Incorporation of knowledge acquired to formulate an independent study topic and research project
- Selection and use of original sources in a Central and East European language or Russian to prepare a thesis
- Acquisition of skills relating to development of discourse and argument that is clear, reasoned, reflective, informed by evidence, and aimed at deciding what to believe
- Determination of what information should be developed and analyzed

- Completion of conference presentation that includes fielding audience questions
- Mastery of oral communication including interpersonal communication, presentation, and discussion
- Editing of the research paper into a journal article, and submission of it to an academic journal

### Entry to the Major

#### Transfer Students

Transfer applicants to the Central and East European Languages and Cultures major with 90 or more units must complete the following introductory course prior to admission to UCLA: one culture, history, or civilization course on one or more European nations.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Central and East European Studies 91 or Slavic 90.

#### The Major

*Required:* (1) One three-quarter (12 to 15 units) introductory central and east European language sequence, or one 12-unit intensive introductory central and east European language course, to be selected from Czech 101A, 101B, 101C, Hungarian 101A, 101B, 101C, Polish 101A, 101B, 101C, Romanian 101A, 101B, 101C, 103, Serbian/Croatian 101A, 101B, 101C, 103, or Ukrainian 101A, 101B, 101C; (2) one three-quarter (12 to 15 units) language sequence to be selected from Czech 102A, 102B, 102C, Hungarian 102A, 102B, 102C, Polish 102A, 102B, 102C, Romanian 102A, 102B, 102C, Serbian/Croatian 102A, 102B, 102C, or Ukrainian 102A, 102B, 102C, or any three courses from Russian 100A, 100B, 100C, 101A, 101B, 101C, 102A, 102B, 102C, 103A, 103B, 103C, 130A, 140A; (3) three courses (12 units) from the following list (187 courses are 2 units each; no more than 8 units may be from the 187 series): Central and East European Studies M120, 125, C126, Czech 155, 187A through 187M, History 120A through 120D, Hungarian 187A through 187M, Polish 152A, 152B, 152C, 187A through 187M, Romanian 152, 187A through 187M, Russian CM124G, Serbian/Croatian 187A through 187M, Ukrainian 152, 187A through 187M; one of the three courses may be selected from Russian M118, 119, 120, C124C, C124D, C124N, C124T.

During their senior year, students must also take Slavic 191TA, 191TB, and 191TC in which they complete a capstone senior thesis.

#### Honors Program

The honors program is designed for exceptional departmental majors who wish to complete a research project that culminates in an honors thesis.

The honors program is a three-term sequence (Slavic 198A, 198B, 198C), taken in addition to requirements for the major.

## Policies

### The Major

Students may petition to substitute courses after consulting with the undergraduate adviser.

Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

### Honors Program

#### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year. At the time of admission, students must have completed at least two upper-division courses in their major. Prior to admission to the honors program, students must identify a faculty adviser, who must be a regular member of the UCLA faculty; the faculty adviser must commit to mentoring the student for the duration of the program. Students must also write a two-page proposal of the project, to be approved by the faculty adviser and submitted with the application form.

#### Requirements

The courses must be taken during senior year (fall, winter, and spring terms respectively). Students pursuing departmental honors must submit the contract for each course by the end of the tenth week of the previous quarter. The sequence culminates in the submission of a thesis. Students who enroll in the honors program are exempt from taking the standard thesis course sequence (Slavic 191TA, 191TB, 191TC).

The honors thesis is intended to be a substantial piece of original scholarship at least 40 pages in length exclusive of front matter, appendixes, and bibliography (25 pages to satisfy the regular capstone senior thesis major requirement). Students are required to use a Slavic, east European, or Eurasian language in their research, with the scope of the language work to be determined in consultation with their faculty adviser. Evaluation of the honors thesis is made by the faculty adviser.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Slavic 198A, 198B, 198C with grades of B or better.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Slavic 198A, 198B, 198C with grades of A- or better.

Honors and highest honors are recorded on the final transcript and diploma after students successfully complete the program.

In the event that a student does not complete the departmental honors program or qualify for



departmental honors/highest honors, their paper may count toward the regular capstone senior thesis requirement for their major (25 pages minimum to satisfy requirement).

## Russian Language and Literature BA

The Russian Language and Literature major is designed to provide students with basic mastery of the Russian language and familiarity with the classics of Russian literature. Students typically begin to study Russian in their first year, but those contemplating a Russian major later in their academic program can fulfill the Russian language requirement by combining regular coursework with summer programs or with the University of California [Education Abroad Program](#) (EAP) in Moscow, which is open to students who have completed the equivalent of one or more years of study (level 1 on the American Council on Teaching of Foreign Languages [ACTFL] scale). Students interested in this program should consult with the undergraduate adviser as early as possible.

### Capstone Major

The Russian Language and Literature major is a designated capstone major. Students must complete a capstone seminar and present their final paper in the department annual Undergraduate Research Conference. Students draw on their previously acquired subject matter knowledge and skills to plan a research project and write a substantial academic paper. They also gain experience engaging in scholarly discourse, preparing appropriate media for public presentation, and submitting their work to an academic journal.

### Learning Outcomes

The Russian Language and Literature major has the following learning outcomes:

- Incorporation of knowledge acquired to formulate an independent study topic and research project
- Selection and use of original sources in Russian or a related language to prepare a thesis
- Acquisition of skills relating to development of discourse and argument that is clear, reasoned, reflective, informed by evidence, and aimed at deciding what to believe
- Determination of what information should be developed and analyzed
- Completion of conference presentation that includes fielding audience questions
- Mastery of oral communication including interpersonal communication, presentation, and discussion
- Editing of the research paper into a journal article, and submission of it to an academic journal

### Entry to the Major

#### Transfer Students

Transfer applicants to the Russian Language and Literature major with 90 or more units must complete the following introductory courses

prior to admission to UCLA: two years of Russian and one Russian civilization course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Russian 6 or 20 or equivalent proficiency, one course from 25, 25W, 90A, 90B, or 90BW.

#### The Major

*Required:* Ten courses (44 to 47 units), including (1) three Russian language courses selected from Russian 100A, 100B, 100C, 101A, 101B, 101C, 102A, 102B, 102C, 103A, 103B, 103C, 107A, 107B, 107C, 108 (consult with the undergraduate adviser for appropriate placement); (2) five Russian literature and culture courses selected from 119, 120, 121, 129, 130A, 130B, 130C, 140A through 140D; and (3) two additional Russian language and/or literature courses selected from 102A, 102B, 102C, 103A, 103B, 103C, 107A, 107B, 107C, 108, M118, 122, C124C, C124D, CM124G, C124N, C124P, C124T, M127, Slavic CM114.

During their senior year, students must also take Slavic 191TA, 191TB, and 191TC in which they complete a capstone senior thesis.

#### Honors Program

The honors program is designed for exceptional departmental majors who wish to complete a research project that culminates in an honors thesis.

The honors program is a three-term sequence (Slavic 198A, 198B, 198C), taken in addition to requirements for the major.

### Policies

#### The Major

Students may petition to substitute courses after consulting with the undergraduate adviser.

Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

#### Honors Program

##### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year. At the time of admission, students must have completed at least two upper-division courses in their major. Prior to admission to the honors program, students must identify a faculty adviser, who must be a regular member of the UCLA faculty; the faculty adviser must commit to mentoring the student for the duration of the program. Students must also write a two-page proposal of the project, to be approved by the faculty adviser and submitted with the application form.

### Requirements

The courses must be taken during senior year (fall, winter, and spring terms respectively). Students pursuing departmental honors must submit the contract for each course by the end of the tenth week of the previous quarter. The sequence culminates in the submission of a thesis. Students who enroll in the honors program are exempt from taking the standard thesis course sequence (Slavic 191TA, 191TB, 191TC).

The honors thesis is intended to be a substantial piece of original scholarship at least 40 pages in length exclusive of front matter, appendixes, and bibliography (25 pages to satisfy the regular capstone senior thesis major requirement). Students are required to use a Slavic, east European, or Eurasian language in their research, with the scope of the language work to be determined in consultation with their faculty adviser. Evaluation of the honors thesis is made by the faculty adviser.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Slavic 198A, 198B, 198C with grades of B or better.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Slavic 198A, 198B, 198C with grades of A– or better.

Honors and highest honors are recorded on the final transcript and diploma after students successfully complete the program.

In the event that a student does not complete the departmental honors program or qualify for departmental honors/highest honors, their paper may count toward the regular capstone senior thesis requirement for their major (25 pages minimum to satisfy requirement).

## Russian Studies BA

The major in Russian Studies is designed for students who wish to complement mastery of the language with an array of courses on Russian history, politics, literature, and culture.

### Capstone Major

The Russian Studies major is a designated capstone major. Students must complete a capstone seminar and present their final paper in the department annual Undergraduate Research Conference. Students draw on their previously acquired subject matter knowledge and skills to plan a research project and write a substantial academic paper. They also gain experience engaging in scholarly discourse, preparing appropriate media for public presentation, and submitting their work to an academic journal.

## Learning Outcomes

The Russian Studies major has the following learning outcomes:

- Incorporation of knowledge acquired to formulate an independent study topic and research project
- Selection and use of original sources in Russian or a related language to prepare a thesis
- Acquisition of skills relating to development of discourse and argument that is clear, reasoned, reflective, informed by evidence, and aimed at deciding what to believe
- Determination of what information should be developed and analyzed
- Completion of conference presentation that includes fielding audience questions
- Mastery of oral communication including interpersonal communication, presentation, and discussion
- Editing of the research paper into a journal article, and submission of it to an academic journal

## Entry to the Major

### Transfer Students

Transfer applicants to the Russian Studies major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of Russian and one Russian civilization course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Russian 6 or 20 or equivalent proficiency, one course from 25, 25W, 90A, 90B, or 90BW.

### The Major

*Required:* Ten courses (44 to 47 units), including (1) three Russian language courses selected from Russian 100A, 100B, 100C, 101A, 101B, 101C, 102A, 102B, 102C, 103A, 103B, 103C, 107A, 107B, 107C, 108 (consult with the undergraduate adviser for appropriate placement); (2) three additional Russian language and/or literature courses selected from 102A, 102B, 102C, 103A, 103B, 103C, 107A, 107B, 107C, 108, M118, 119, 120, 121, 122, C124C, C124D, CM124G, C124N, C124P, C124T, 129; and (3) four related fields courses selected from History M127A through 127D, Political Science 128A, 128B, 156A, Slavic CM114.

During their senior year, students must also take Slavic 191TA, 191TB, 191TC in which they complete a capstone senior thesis.

### Honors Program

The honors program is designed for exceptional departmental majors who wish to complete a research project that culminates in an honors thesis.

The honors program is a three-term sequence (Slavic 198A, 198B, 198C), taken in addition to requirements for the major.

## Policies

### The Major

Students may petition to substitute courses after consulting with the undergraduate adviser.

Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

### Honors Program

#### Admission

The honors program is open to majors with a 3.5 grade-point average in upper-division courses in the major and a 3.0 overall GPA. Students should apply for admission by spring quarter of their junior year. At the time of admission, students must have completed at least two upper-division courses in their major. Prior to admission to the honors program, students must identify a faculty adviser, who must be a regular member of the UCLA faculty; the faculty adviser must commit to mentoring the student for the duration of the program. Students must also write a two-page proposal of the project, to be approved by the faculty adviser and submitted with the application form.

#### Requirements

The courses must be taken during senior year (fall, winter, and spring terms respectively). Students pursuing departmental honors must submit the contract for each course by the end of the tenth week of the previous quarter. The sequence culminates in the submission of a thesis. Students who enroll in the honors program are exempt from taking the standard thesis course sequence (Slavic 191TA, 191TB, 191TC).

The honors thesis is intended to be a substantial piece of original scholarship in at least 40 pages in length exclusive of front matter, appendixes, and bibliography (25 pages to satisfy the regular capstone senior thesis major requirement). Students are required to use a Slavic, east European, or Eurasian language in their research, with the scope of the language work to be determined in consultation with their faculty adviser. Evaluation of the honors thesis is made by the faculty adviser.

To qualify for graduation with departmental honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.5 or better in upper-division courses required for the major and an overall GPA of 3.0 or better, and (3) complete Slavic 198A, 198B, 198C with grades of B or better.

To qualify for graduation with departmental highest honors, students must (1) complete all requirements for the major, (2) have a cumulative grade-point average of 3.8 or better in upper-division courses required for the major and an overall GPA of 3.5 or better, and (3) complete Slavic 198A, 198B, 198C with grades of A- or better.

Honors and highest honors are recorded on the final transcript and diploma after students successfully complete the program.

In the event that a student does not complete the departmental honors program or qualify for

departmental honors/highest honors, their paper may count toward the regular capstone senior thesis requirement for their major (25 pages minimum to satisfy requirement).

## Undergraduate Minors

### Central and East European Studies Minor

The Central and East European Studies minor is designed for students who wish to augment their major program of study in the College of Letters and Sciences with exposure to a variety of disciplines pertinent to the study of central and eastern Europe, including language, literature, history, political science, folklore, ethnomusicology, and women's studies.

### Admission

To enter the minor students must be in good academic standing (2.0 minimum grade-point average) and file a petition with the department counselor in 322B Kaplan Hall, 310-825-3856.

### The Minor

*Required Lower-Division Course (5 units):* Central and East European Studies 91 or Slavic 90.

*Required Upper-Division Courses (28 to 31 units):* (1) One three-quarter introductory central and east European language sequence, or one 12-unit intensive introductory central and east European language course, to be selected from Czech 101A, 101B, 101C, Hungarian 101A, 101B, 101C, Polish 101A, 101B, 101C, Romanian 101A, 101B, 101C, 103, Serbian/Croatian 101A, 101B, 101C, 103, or Ukrainian 101A, 101B, 101C (students who demonstrate sufficient fluency in one of these languages through departmental testing are exempt from this three-course sequence and must replace it with a minimum of 12 units of language courses from item 3); (2) one course dealing directly with the target culture to be selected from Central and East European Studies M120, 125, C126, Czech 155, History 120A through 120D, Polish 152A, 152B, 152C, Romanian 152, Russian CM124G, Serbian/Croatian 154, or Ukrainian 152; (3) 12 units of second-year or higher-level language courses to be selected from Czech 102A, 102B, 102C, 187A through 187M, Hungarian 102A, 102B, 102C, 187A through 187M, Polish 102A, 102B, 102C, 187A through 187M, Romanian 102A, 102B, 102C, 187A through 187M, Serbian/Croatian 102A, 102B, 102C, 187A through 187M, Ukrainian 102A, 102B, 102C, 187A through 187M (187 courses are 2 units each) OR three courses dealing directly with any central and east European culture to be selected from Central and East European Studies M120, 125, C126, Czech 155, History 120A through 120D, Polish 152A, 152B, 152C, Romanian 152, Russian CM124G, Ukrainian 152.

### Policies

With approval of the undergraduate adviser, other related upper-division courses may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Russian Language Minor

### Admission

To enter the Russian Language minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Lower-Division Courses (9 to 17 units):* Russian 6 or 20 or equivalent proficiency, one course from 25, 25W, 90A, 90B, or 90BW.

*Required Upper-Division Courses (20 to 23 units):* Students select one of the following options: (1) Russian 101A, 101B, 101C and two additional Russian language or literature courses; (2) Russian 100A, 100B, 100C and two additional Russian language or literature courses; or (3) five Russian language and literature courses selected from 102A, 102B, 102C, 103A, 103B, 103C, 107A, 107B, 107C, 130A, 130B, 130C, 140A through 140D, with a minimum of three courses in Russian language.

### Policies

Students may petition to substitute courses after consulting with the undergraduate adviser.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Russian Literature Minor

### Admission

To enter the Russian Literature minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Lower-Division Courses (9 to 17 units):* Russian 3 or 10 or equivalent proficiency, one course from 25, 25W, 30, 31, 32, 90A, 90B, or 90BW.

*Required Upper-Division Courses (20 units):* Five Russian language and literature courses, including at least two from Russian M118, 119, 120, 130A, 130B, 130C, 140A through 140D.

### Policies

Students may petition to substitute courses after consulting with the undergraduate adviser.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Russian Studies Minor

### Admission

To enter the Russian Studies minor, students must have an overall grade-point average of 2.0 or better.

### The Minor

*Required Lower-Division Courses (9 to 17 units):* Russian 3 or 10 or equivalent proficiency, one course from 25, 25W, 30, 31, 32, 90A, 90B, or 90BW.

*Required Upper-Division Courses (20 units):* Five courses in Russia-related fields, with a minimum of three courses selected from History M127A through 127D, Political Science 128A, 128B, 156A.

### Policies

Students may petition to substitute courses after consulting with the undergraduate adviser.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Major

### Slavic, East European, and Eurasian Languages and Cultures MA, CPhil, PhD

The graduate program provides advanced training in Slavic literatures and linguistics leading to the MA and PhD degrees in Slavic, East European, and Eurasian Languages and Cultures. The primary task of the department faculty is to develop and refine the critical and analytic skills of its students in preparation for productive careers in college teaching and research in the Slavic field. Alternative careers include language teaching, business, translation, interpreting, librarianship, and government service.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announce-

ments, other publications, and websites of the schools, departments, and programs.

## Bulgarian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101A-101B-101C. Elementary Bulgarian. (5-5-5)** Lecture, five hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Basic courses in Bulgarian language. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Central and East European Studies

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**31. Introduction to Slavic, East European, and Central Asian Cultures through Film. (5)** Lecture, three hours; discussion, one hour. Interdisciplinary introduction to diversity of languages and cultures represented in Department of Slavic, East European, and Eurasian Languages and Cultures through medium of film. P/NP or letter grading.



**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**91. Culture and Society in Central and Eastern Europe. (5)** Lecture, three hours; discussion, one hour. Interdisciplinary introduction to main themes and concepts of Central and East European studies, including historical background, nation states and ethnic groups, and languages spoken in area. Focus on politics, society, and culture in communist and early post-communist periods: party control and dissidence; national economic planning and private entrepreneurship; atheist education and state religion; politically engaged literature, mass media, and freedom of expression; sports, visual and performing arts, and nationalism. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**M120. Women and Literature in Southeastern Europe. (4)** (Same as Comparative Literature M120.) Seminar, three hours. Examination of changing roles of women in Balkan countries (Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Greece, Macedonia, Montenegro, Romania, Serbia, Slovenia, Turkey) in last forty years. Emphasis on cultural, social, political, and economic factors affecting women's roles during countries' transition from agricultural to industrial economy and from communism to post-communism (in former communist countries). Sensitizes students to complexity of issues in region and helps them better understand multiplicity of causes of present situation. Interdisciplinary study, drawing on sociological/women's studies, articles, and short fiction by women writers for analysis. Discussion of topics covered in articles, positions taken by authors, and ways in which aspects of Southeast European realities are rendered in fictional form by women writers from region. P/NP or letter grading.

**125. Interwar Central European Prose. (4)** Lecture, three hours. Analysis of selected novels, stories, plays, and essays of representative authors of 1920s and 1930s in translation. Special attention to relation between literature and historical and ethnic concerns. P/NP or letter grading.

**C126. Cold-War Central European Culture. (4)** (Formerly numbered 126.) Lecture, three hours. Examination of cold-war Central European culture through prism of prose fiction, essays, and film from 1947 to 1989. Analysis of strategies of Polish, Czech, Hungarian, and East German writers as articulation of tensions, contradictions, and compromises informing communist rule in central and eastern Europe, with focus on culture as node of resistance as well as accommodation to communist system. Concurrently scheduled with course C226. P/NP or letter grading.

**127. Central European Culture after Fall of Communism. (4)** Lecture, three hours. Examination of Central and East European culture through literature, film, visual arts, music, and other cultural artifacts from 1989 to present. Analysis of Polish, Czech, Slovak, Romanian, Hungarian, former Yugoslav, and East German writers, essayists, filmmakers, musicians, visual art-

ists, and graphic novelists in order to reflect on nature of political and societal changes after fall of communism. P/NP or letter grading.

**130. Balkan Cultures in Film and Literature. (4)** Lecture, three hours. Examination of cultural and linguistic issues in Western Balkans (Bosnia, Croatia, Serbia) through literature, film, music, and visual arts. Examination of interaction of politics and culture (language, religion, literature, film, and mass media) before and after breakup of Yugoslavia by analyzing movies, literature, and music. All texts and films are in English translation. No prior knowledge of Western Balkan languages is required. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Central and East European Studies. (4)** Seminar, three hours. Study and discussion of specialized issues and approaches in history, structure, and thematics of one or more literary traditions of central and eastern Europe. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

## Graduate Courses

**C226. Cold-War Central European Culture. (4)** Lecture, three hours. Examination of cold-war Central European culture through prism of prose fiction, essays, and film from 1947 to 1989. Analysis of strategies of Polish, Czech, Hungarian, and East German writers as articulation of tensions, contradictions, and compromises informing communist rule in central and eastern Europe, with focus on culture as node of resistance as well as accommodation to communist system. Concurrently scheduled with course C126. S/U or letter grading.

## Czech

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor.

Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101A-101B-101C. Introduction to Czech Language and Culture. (5-5-5)** Lecture, five hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Beginning Czech language courses with strong cultural component. P/NP or letter grading.

**102A-102B-102C. Advanced Czech. (4-4-4)** Lecture, three hours. Recommended preparation: course 101C (may be waived with consent of instructor). Course 102A is recommended preparation for 102C. Each course may be waived with consent of instructor. P/NP or letter grading.

**103. Intensive Elementary Czech. (12)** Lecture, 25 hours. Intensive basic course in Czech equivalent to courses 101A, 101B, 101C. Offered in summer only. P/NP or letter grading.

**104. Intensive Advanced Czech. (12)** Lecture, 25 hours. Intensive advanced course in Czech equivalent to courses 102A, 102B, 102C. Offered in summer only. P/NP or letter grading.

**155. Survey of Czech Literature from Middle Ages to Present. (4)** Lecture, three hours. Lectures and readings in English. P/NP or letter grading.

**187A. Advanced Tutorial Instruction in Czech. (2)** Tutorial, one hour; laboratory, one hour. Enforced requisite: course 102C or Czech placement test. Tutorial and guided independent study of advanced Czech: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**187B-187M. Advanced Tutorial Instruction in Czech. (2 each)** Tutorial, one hour; laboratory, one hour. Preparation: prior course in sequence or Czech placement test. Tutorial and guided independent study of advanced Czech: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Hungarian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.



**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101A-101B-101C. Elementary Hungarian. (4-4-4)** Lecture, three to four hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Introduction to grammar; instruction in speaking, listening, reading, and writing. P/NP or letter grading.

**102A-102B-102C. Advanced Hungarian. (4-4-4)** Lecture, three hours. Recommended preparation: course 101C (may be waived with consent of instructor). Course 102A is recommended preparation for 102B, which is recommended preparation for 102C. Each course may be waived with consent of instructor. P/NP or letter grading.

**121. Survey of Hungarian Literature in Translation. (4)** Lecture, three hours. Designed for students in general and comparative literature, as well as students interested in Finno-Ugric studies. Survey of main trends and contacts with other literatures. P/NP or letter grading.

**187A. Advanced Tutorial Instruction in Hungarian. (2)** Tutorial, one hour; laboratory, one hour. Preparation: two years of Hungarian and/or Hungarian placement test. Tutorial and guided independent study of advanced Hungarian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**187B-187M. Advanced Tutorial Instruction in Hungarian. (2 each)** Tutorial, one hour; laboratory, one hour. Preparation: prior course in sequence or Hungarian placement test. Tutorial and guided independent study of advanced Hungarian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in Hungarian. (2 to 4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Lithuanian Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101A-101B-101C. Elementary Lithuanian. (4-4-4)** Lecture, five hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Basic courses in Lithuanian language. P/NP or letter grading.

**102A-102B-102C. Advanced Lithuanian. (4-4-4)** Lecture, three hours. Recommended preparation: course 101C (may be waived with consent of instructor). Course 102A is recommended preparation for 102B, which is recommended preparation for 102C. Each course may be waived with consent of instructor. Review and reinforcement of grammar introduced in first year of study, expansion of vocabulary, further training in written and oral expression. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Polish Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101A-101B-101C. Elementary Polish. (5-5-5)** Lecture, five hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Basic courses in Polish language. P/NP or letter grading.

**102A-102B-102C. Advanced Polish. (4-4-4)** Lecture, three hours. Recommended preparation: course 101C (may be waived with consent of instructor). Course 102A is recommended preparation for 102B, which is recommended preparation for 102C. Each course may be waived with consent of instructor. P/NP or letter grading.

**152A-152B-152C. Survey of Polish Literature. (4-4-4)** Lecture, three hours. Lectures and readings in English. Letter grading. **152A.** From the Middle Ages to Neoclassicism; **152B.** Reimagining a Nation. Readings in 19th-century Polish literature and culture. **152C.** Dreaming, Mocking, and Writing "as if." Readings in modern Polish literature and culture.

**C180. Variable Topics in Polish Literature. (4)** Seminar, three hours. Reading knowledge of Polish recommended but not required. Topics include major writers, genres, or periods. May be repeated for credit with topic change. Concurrently scheduled with course C280. P/NP or letter grading.

**187A. Advanced Tutorial Instruction in Polish. (2)** Tutorial, one hour; laboratory, one hour. Preparation: two years of Polish and/or Polish placement test. Tutorial and guided independent study of advanced Polish: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**187B-187M. Advanced Tutorial Instruction in Polish. (2 each)** Tutorial, one hour; laboratory, one hour. Preparation: prior course in sequence or Polish placement test. Tutorial and guided independent study of advanced Polish: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for

maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Graduate Course

**C280. Variable Topics in Polish Literature. (4)** Seminar, three hours. Reading knowledge of Polish recommended but not required. Topics include major writers, genres, or periods. May be repeated for credit with topic change. Concurrently scheduled with course C180. S/U or letter grading.

## Romanian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Introduction to Romanian Civilization. (4)** Lecture, three hours. Introductory survey of social and cultural institutions of Romanian people and their historical background. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101A-101B-101C. Elementary Romanian. (5-5-5)** Lecture, five hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Basic courses in Romanian language. P/NP or letter grading.

**102A-102B-102C. Advanced Romanian. (5-5-5)** Lecture, five hours. Recommended preparation: course 101C (may be waived with consent of instructor). Course 102A is recommended preparation for 102B, which is recommended preparation for 102C. Each course may be waived with consent of instructor. Differences between oral and written discourse, expansion of students' general and academic vocabulary, and increase of range of grammatical structures for use in speaking and writing. Cultural information to be included in readings. P/NP or letter grading.

**103. Intensive Elementary Romanian. (12)** Lecture, 25 hours. Intensive basic course in Romanian equivalent to courses 101A, 101B, 101C. P/NP or letter grading.

**152. Survey of Romanian Literature. (4)** Lecture, three hours. Lectures and readings in English. Survey of Romanian literature from Middle Ages to present. P/NP or letter grading.

**187A. Advanced Tutorial Instruction in Romanian. (2)** Tutorial, one hour; laboratory, one hour. Enforced requisite: course 102C or Romanian placement test. Tutorial and guided independent study of advanced

Romanian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**187B-187M. Advanced Tutorial Instruction in Romanian. (2 each)** Tutorial, one hour; laboratory, one hour. Preparation: prior course in sequence or Romanian placement test. Tutorial and guided independent study of advanced Romanian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Russian

### Lower-Division Courses

**1. Elementary Russian. (5)** Recitation, five hours; laboratory, one hour. P/NP or letter grading.

**2. Elementary Russian. (5)** Lecture, five hours; laboratory, one hour. Requisite: course 1 or Russian placement test. P/NP or letter grading.

**3. Elementary Russian. (5)** Lecture, five hours; laboratory, one hour. Requisite: course 2 or Russian placement test. P/NP or letter grading.

**4. Intermediate Russian. (5)** Lecture, five hours; laboratory, one hour. Requisite: course 3 or Russian placement test. P/NP or letter grading.

**5. Intermediate Russian. (5)** Lecture, five hours; laboratory, one hour. Requisite: course 4 or Russian placement test. P/NP or letter grading.

**6. Intermediate Russian. (5)** Lecture, five hours; laboratory, one hour. Requisite: course 5 or Russian placement test. P/NP or letter grading.

**10. Intensive Elementary Russian. (12)** Lecture, 19 hours. Intensive basic course in Russian language equivalent to courses 1, 2, 3. P/NP or letter grading.

**15A-15B. Accelerated Elementary Russian. (8-7)** Recitation, five hours; laboratory, two hours. Material of first-year Russian course to be covered in two terms, with extensive use of language laboratory and the Russian Room. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Intensive Intermediate Russian. (12)** Lecture, 19 hours. Intermediate instruction in reading, writing, and speaking Russian equivalent to courses 4, 5, 6. P/NP or letter grading.

**25. Great Russian Novel. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 25W. Designed for nonmajors. Knowledge of Russian not required. Study of major works by great 19th-century Russian novelists. P/NP or letter grading.

**25W. Great Russian Novel. (5)** Lecture, three hours; discussion, one hour. Requisite: English Composition 3. Not open for credit to students with credit for course 25. Designed for nonmajors. Knowledge of Russian not required. Study of major works by great 19th-century Russian novelists. Satisfies Writing II requirement. Letter grading.

**30. Russian Literature and World Cinema. (4)** Lecture, three hours; discussion, one hour. Examination of Russian literary masterpieces and their screen adaptations in various national cinematic traditions, with focus on problems of perception and misperception arising when literature is translated into cinema, and one national culture is viewed through the eyes of another. P/NP or letter grading.

**31. Introduction to Russian Film. (5)** Lecture, three hours; discussion, one hour; film screening, two hours. Key works, names, events, and concepts of Russian cinematic tradition. Development of skills in analyzing and interpreting films and acquisition of critical terminology of film studies. How film form and aesthetics are conditioned by technology, ideology, economics, theory, tradition, and culture. How cinema in Russia has created and contested narratives of history and identity, how cinema has served interests of state, and how it has defied them. P/NP or letter grading.

**32. Russia and Asia: Cultural Dialogues. (5)** Lecture, three hours; discussion, one hour. Since end of Soviet Union, cultural and political flux within non-Christian lands neighboring Russia has increased dramatically. Given radical rejection of Russian heritage in most former Soviet territories, key distinctions in humanities have become unclear, including fundamental confusion between limits of Slavic and Near Eastern studies. Examination of relation of Russia's culture to its borders: Caucasus, Central Asia, China, and Japan. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90A. Introduction to Russian Civilization. (5)** Lecture, three hours; discussion, one hour. Introduction to Russian culture and society from earliest times to 1917. P/NP or letter grading.

**90B. Russian Civilization in 20th Century. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for course 90BW. Survey of literature, theater, cinema, television, press, music, and arts. Emphasis on contemporary period, with constant reference to Russian and early Soviet antecedents. P/NP or letter grading.

**90BW. Russian Civilization in 20th Century. (5)** Lecture, three hours; discussion, one hour. Requisite: English Composition 3. Not open for credit to students with credit for course 90B. Survey of literature, theater, cinema, television, press, music, and arts. Emphasis on contemporary period, with constant reference to Russian and early Soviet antecedents. Weekly discussions focus on varied approaches to writing addressing class topics. Five short papers required. Satisfies Writing II requirement. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100A-100B-100C. Literacy in Russian. (4-4-4)** Lecture, three hours. Course 100A or Russian placement test is enforced requisite to 100B; course 100B or Russian placement test is enforced requisite to 100C. For students who speak Russian but have difficulty reading and writing. Focus on improving reading and

writing skills, increasing vocabulary, and developing speaking skills required for academic discourse. P/NP or letter grading.

**101A-101B-101C. Third-Year Russian. (5-5-5)** Lecture, three hours; discussion, two hours. Enforced requisite: course 6 or Russian placement test. Course 101A or Russian placement test is enforced requisite to 101B; course 101B or Russian placement test is enforced requisite to 101C. Advanced grammar, reading, and conversation, with strong multimedia component. P/NP or letter grading.

**102A-102B-102C. Topics in Advanced/Superior Russian. (4-4-4)** Lecture, three hours. Enforced requisite: course 101C or Russian placement test. Course 102A or Russian placement test is enforced requisite to 102B; course 102B or Russian placement test is enforced requisite to 102C. Discussion and composition, with emphasis on vocabulary development and review of selected grammar topics. Readings in fiction and nonfiction, films, and videos, and use of Internet. Each course may be taken independently and may be repeated for credit. P/NP or letter grading.

**103A-103B-103C. Russian for Native and Near-Native Speakers. (4-4-4)** Lecture, three hours. Course 103A is not requisite to 103B, which is not requisite to 103C. Improvement of oral and written language skills, emphasizing correct and diversified use of language and addressing individual grammatical difficulties. May be repeated for credit with topic and/or instructor change. P/NP or letter grading. **103A.** Russian National Identity. Readings in literature, philosophy, criticism, film. **103B.** Literature and Film. Film adaptations of Russian literature. Readings and screenings. **103C.** Special Topics.

**107A-107B-107C. Russian for Social and Cultural Studies. (4-4-4)** Lecture, three hours. Recommended preparation: third-year Russian. Lectures and readings in Russian. Exploration of texts and media in social sciences and culture, with emphasis on press, television, and Internet. Each course may be taken independently and may be repeated for credit. P/NP or letter grading.

**108. Russian for Business: Language and Culture. (4)** Lecture, three hours. Discussion of economics and business in Russia, language of advertising, business and official correspondence. P/NP or letter grading.

**110. Russian Flagship Program Abroad: Intensive Advanced Russian. (12)** Lecture, 19 hours. Enforced requisites: courses 101A, 101B, 101C or equivalent coursework as determined by department. Taught in Russian. Designed for students with high proficiency in Russian. Intensive advanced seven-week course in Russian language covering reading, writing, speaking, listening, and grammar. Lectures on Russian history also included. Opportunity to interact with Russian speakers outside of class and serve as volunteers. Part of Russian Flagship Program Abroad. May not be repeated for credit. Offered in summer only. Letter grading.

**111A-111B-111C. Russian Flagship Program Abroad: Superior Russian. (5-5-5)** Lecture, three hours. Enforced requisite: course 110 or equivalent coursework as determined by department. Course 111A is enforced requisite to 111B, which is enforced requisite to 111C. Taught in Russian. Designed for students with advanced proficiency. Development of skills in Russian phonetics, conversation, and grammar. Acquisition of advanced syntactical structures and expansion of lexical repertoire. Emphasis on formal interpersonal and presentational modes. Letter grading.

**112A-112B-112C. Russian Flagship Program Abroad: Russian Literature and Culture. (4-4-4)** Lecture, three hours. Enforced requisite: course 110 or equivalent coursework as determined by department. Course 112A is enforced requisite to 112B, which is enforced requisite to 112C. Taught in Russian. Critical reading, analysis, and discussion of Russian literature, with exposure to Russian cultural and intellectual norms. Readings and essays, with emphasis on formal and academic writing. Letter grading.

**113A-113B-113C. Russian Flagship Program Abroad: Professional and Academic Russian and Experiential Learning. (5-5-5)** Lecture, three hours. Enforced requisite: course 110 or equivalent coursework as determined by department. Course 113A is enforced requisite to 113B, which is enforced requisite to 113C. Taught in Russian. Use of discourse practices (speaking, listening, reading, and writing) to participate effectively in discussions of professional topics and situations outside of course. Opportunity to communicate in Russian in authentic contexts by participating in courses with local students, providing service to community, or interning in one business. Letter grading.

**M118. History of Russia, Origins to Rise of Muscovy. (4)** (Same as History M127A.) Lecture, three hours; discussion, one hour (when scheduled). Designed for juniors/seniors. Kievan Russia and its culture, Appanage principalities and towns; Mongol invasion; unification of Russian state by Muscovy, Autocracy and its Servitors; serfdom. P/NP or letter grading.

**119. Golden Age and Great Realists. (4)** Lecture, three hours. Designed for juniors/seniors. Russian majors are advised to take this course in their sophomore year. Lectures and readings in English. Survey of 19th-century Russian literature (Pushkin, Gogol, Tolstoy, Dostoevsky, Chekhov) in its cultural, political, and social contexts. P/NP or letter grading.

**120. Literature and Revolution. (4)** Lecture, three hours. Designed for juniors/seniors. Russian majors are advised to take this course in their sophomore year. Lectures and readings in English. Major works of the 20th century (Belyi, Pasternak, Bulgakov, Solzhenitsyn, and others) from prerevolutionary avant-garde to the present. P/NP or letter grading.

**121. Russian Pop Culture. (5)** Lecture, three hours. Designed for juniors/seniors. Lectures and readings in English. Overview of Russian popular culture today, with examination of status of Russia's classic(al) traditions for artists and audiences working in modern Russia. Death of one tradition and attempts at creation of another lead away from written word into neighboring forms of expression, primarily visual. Consideration of battles of modern storytelling with cinema, television, animation, music videos, and Internet. Letter grading.

**122. Siberia. (5)** Lecture, three hours. Introductory survey in which current cultural and ecological issues are situated in their geographical and historical background, including analysis of Siberian human geography before first contact with European colonizers and development of modes of interaction among different cultural groups. Reading in English of selection of literary works by well-known 20th-century Siberian writers whose texts serve as locus for closer examination of Siberian regional literary culture and ecological network within which it exists. Letter grading.

**C124C. Studies in Russian Literature: Chekhov. (4)** Lecture, three hours. Lectures and readings in English. Survey of short stories, novellas, and major plays (*The Seagull*, *Uncle Vanya*, *Three Sisters*, *The Cherry Orchard*), with discussion of Russian and American productions. Concurrently scheduled with course C224C. P/NP or letter grading.

**C124D. Studies in Russian Literature: Dostoevsky. (4)** Lecture, three hours. Lectures and readings in English. In-depth reading of major fictional works such as *Crime and Punishment*, *Notes from the Underground*, and *The Brothers Karamazov*. Concurrently scheduled with course C224D. P/NP or letter grading.

**CM124G. Studies in Russian Literature: Gogol. (4)** (Formerly numbered C124G.) (Same as Ukrainian CM124G.) Lecture, three hours. Lectures and readings in English. Short stories, novel *Dead Souls*, and selected plays. Concurrently scheduled with course CM224G. P/NP or letter grading.

**C124N. Studies in Russian Literature: Nabokov. (4)** Lecture, three hours. Lectures and readings in English. Russian novelist (*The Gift*), American novelist (*Lolita*), autobiographer (*Speak Memory*), and critic. Concurrently scheduled with course C277. P/NP or letter grading.

**C124P. Studies in Russian Literature: Pushkin. (4)** Lecture, three hours. Lectures and readings in English. Major works in all genres, including lyric poetry, narrative poems, plays, prose fiction, and selected letters. Concurrently scheduled with course C224P. P/NP or letter grading.

**C124T. Studies in Russian Literature: Tolstoy. (4)** Lecture, three hours. Lectures and readings in English. Early and late stories and novellas, excerpts from the diaries and one major novel such as *War and Peace* or *Anna Karenina*. Concurrently scheduled with course C224T. P/NP or letter grading.

**125. Russian Novel in Its European Setting. (4)** Lecture, three hours. Designed for juniors/seniors. Lectures and readings in English. Emphasis on 19th- and 20th-century novelists.

**126. Russian Theater: Plays and Performance. (4)** Lecture, three hours. Lectures and readings in English. Major Russian plays and living tradition of performance from classical to avant-garde. P/NP or letter grading.

**M127. Women in Russian Literature. (4)** (Same as Gender Studies M127.) Lecture, three hours. Designed for juniors/seniors. Lectures and readings in English. Introduction to alternative tradition of women's writings in Russia and Soviet Union. Emphasis on images of women expressed in this tradition as compared with those found in works of contemporary male writers. P/NP or letter grading.

**128. Russian Science Fiction. (4)** Lecture, three hours. Readings in English. Introduction to Russian science fiction in the 20th century. Emphasis on function of science fiction in development of Russian culture before and after the October Revolution. P/NP or letter grading.

**129. Animation and Music Video. (5)** Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Lectures and readings in English. Humanities have recently passed through so-called visual turn: traditional emphases on language(s) in field have been reconsidered in light of society's increasingly visual workings. New attitude toward our own changing culture (i.e., toward its future) has equal value if applied retrospectively to multiple cultures of one erstwhile empire. In territory where many tongues or traditions needed to be ironed out, visual often plays special role in social cohesion. Because of past politics and today's profit-driven events, small fickle forms of visual narrative reflect change and social chance much better than ponderous grandeur of feature-length cinema. Letter grading.

**130A-130B-130C. Russian Poetry. (4-4-4)** Lecture, three hours. Preparation: third-year Russian recommended. Lectures and readings in Russian. May be repeated for credit with topic and/or instructor change. **130A.** Introduction to Analysis of Russian Poetry. Role of biography, cultural subtexts, rhetoric, and form in interpreting poetic texts. **130B.** Poetry of Russian Neoclassicism, Romanticism, and Realism. Major works of late 18th and 19th centuries in their historical and cultural contexts. **130C.** Russian Poetry in the 20th Century. Major poetic schools from early modernism (symbolism, futurism, acmeism) to contemporary avant-garde.

**131. History of Russian Cinema. (4)** Lecture, three hours. Overview of most popular art form in world's largest nation to show how cinema struggled under incipient capitalism in Russia, how moviemaking on other side of world departed from path marked out by Hollywood and London, how films operate as form of nationwide persuasion, relationship between word and image in those acts of persuasion, how even frightening dogma cannot escape importance of audience desire(s), different forms of social existence as refuge from both capitalism and communism, and what values of world's biggest country are. Role of language in self-definition. Is selfhood verbal or visual matter? P/NP or letter grading.

**M132. Comparative Media Studies. (4)** (Same as Comparative Literature M132.) Lecture, three hours. History, form, and function of various media. Grounded in political and commercial experience of eastern Europe, comparative investigation of media technologies, today's burgeoning markets, and yes-

terday's tragic abuses. Development of media form(s) and content across various times, places, and cultures, with special attention to Slavic phenomena. Letter grading.

**140A-140D. Russian Prose Fiction. (4 each)** Lecture, three hours. Preparation: third-year Russian recommended. Lectures and readings in Russian. May be repeated for credit with topic and/or instructor change. P/NP or letter grading. **140A.** Introduction to Analysis of Russian Narrative Prose. Close analysis of genre, narrative, and rhetorical strategies and interplay of literature, history, and culture. **140B.** Russian Romantic Prose. Karamzin, Pushkin, Gogol, and others. **140C.** Great Realists. Dostoevsky, Tolstoy, and others. **140D.** 20th-Century Modernism.

**M145. Literary Texts and Literary Languages: Strategies of Analysis and Digital Tools. (4)** (Same as Digital Humanities M145.) Lecture, three hours. Lectures and readings in English. Non-obligatory additional materials in Russian. Formal, quantitative, and computational methods for analysis of poetry and prose. Digital tools for analysis. P/NP or letter grading.

**150. Russian Folk Literature. (4)** Lecture, four hours. Lectures and readings in Russian. P/NP or letter grading.

**C170. Russian Folklore. (3 to 5)** Lecture, three hours. Lectures and readings in English. General introduction to Russian folklore, including survey of genres and related folkloric phenomena. Concurrently scheduled with course C240. P/NP or letter grading.

**187A. Advanced Tutorial Instruction in Russian. (2)** Tutorial, one hour; laboratory, one hour. Enforced requisite: course 102C or Russian placement test. Tutorial and guided independent study of advanced Russian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**187B-187M. Advanced Tutorial Instruction in Russian. (2 each)** Tutorial, one hour; laboratory, one hour. Preparation: prior course in sequence or Russian placement test. Tutorial and guided independent study of advanced Russian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Russian Literature. (4)** Seminar, three hours. Requisite: course 6. Reading and discussion of selected authors; culminating seminar paper required. May be repeated for credit with topic and/or instructor change. P/NP or letter grading.

## Graduate Courses

**201A-201B-201C. Russian: Vocabulary, Pronunciation, Style. (4-4-4)** Lecture, three hours. Requisite: course 102C. Conducted in Russian. Reading and analysis of texts with focus on vocabulary, pronunciation, and style, respectively, in three consecutive terms. S/U or letter grading.

**204. Introduction to History of Russian Literary Language. (4)** Lecture, three hours. Requisites: course 220A, Slavic 201. Required for MA (linguistics) and PhD (literature). Evolution of literary Russian from the 11th to 20th centuries. Analysis of texts. S/U or letter grading.

**211A. Literature of Medieval Rus'. (4)** Lecture, three hours. Required for MA (literature). Survey of the literature from its beginning through the Kievan and Muscovite periods up to end of the 17th century.

**211B. 18th-Century Russian Literature. (4)** Lecture, three hours. Required for MA (literature). Lectures and readings in major and secondary writers. Analysis of related literary works.

**212A. 19th-Century Russian Literature: Golden Age. (4)** Lecture, three hours. Required for MA (literature). Survey of major literary movements and schools following demise of neoclassicism: sentimental school, early and late Romanticism, and beginnings of natural school. Discussion of representative works of Karamzin, Zhukovsky, Batyushkov, Pushkin, Baratynsky, Lermontov, Gogol. S/U or letter grading.

**212B. 19th-Century Russian Literature: Age of Realism. (4)** Lecture, three hours. Required for MA (literature). Survey devoted to emergence of critical and psychological realism, beginning with early works of Turgenev, Goncharov, and Dostoevsky, moving to major novels of Tolstoy, Dostoevsky, and Saltykov-Shchedrin, and concluding with works of the presymbolist period, especially short stories of Chekhov. S/U or letter grading.

**213A. 20th-Century Russian Literature, 1890 to 1929. (4)** Lecture, three hours. Required for MA (literature). Lectures and readings in major literary trends of modernist period, such as decadence, symbolism, futurism, acmeism, and ornamental school. Analysis of representative works by Blok, Belyj, Khlebnikov, Pasternak, Platonov, and others. S/U or letter grading.

**213B. 20th-Century Russian Literature, 1930 to 1989. (4)** Lecture, three hours. Required for MA (literature). Lectures and readings in major literary trends, including socialist realism, *The Thaw*, and second- and third-wave emigration. S/U or letter grading.

**214. Contemporary Russian Literature. (4)** Lecture, three hours. Requisites: courses 213A, 213B. Required for PhD (literature). Close readings in selected texts of poetry and prose, metropolitan and émigré, of recent vintage. May be repeated for credit. Letter grading.

**220A-220B. Structure of Modern Russian. (4-4)** Lecture, three hours. S/U or letter grading. **220A.** Required for MA (literature, linguistics). Survey of basic concepts and categories (graphics, phonetics, morphology, syntax, discourse). **220B.** Requisite: course 220A. Required for MA (linguistics). Selected problems and approaches in structure of Russian.

**C224C. Studies in Russian Literature: Chekhov. (4)** Lecture, three hours. Lectures and readings in English. Survey of short stories, novellas, and major plays (*The Seagull*, *Uncle Vanya*, *Three Sisters*, *The Cherry Orchard*), with discussion of Russian and American productions. Concurrently scheduled with course C124C. S/U or letter grading.

**C224D. Studies in Russian Literature: Dostoevsky. (4)** Lecture, three hours. Lectures and readings in English. In-depth reading of major fictional works such as *Crime and Punishment*, *Notes from the Underground*, and *The Brothers Karamazov*. Concurrently scheduled with course C124D. S/U or letter grading.

**CM224G. Studies in Russian Literature: Gogol. (4)** (Formerly numbered C224G.) (Same as Ukrainian CM224G.) Lecture, three hours. Lectures and readings in English. Short stories, novel *Dead Souls*, and selected plays. Concurrently scheduled with course CM124G. S/U or letter grading.

**C224P. Studies in Russian Literature: Pushkin. (4)** Lecture, three hours. Lectures and readings in English. Major works in all genres, including lyric poetry, narrative poems, plays, prose fiction, and selected letters. Concurrently scheduled with course C124P. S/U or letter grading.

**C224T. Studies in Russian Literature: Tolstoy. (4)** Lecture, three hours. Lectures and readings in English. Early and late stories and novellas, excerpts from the diaries and one major novel such as *War and Peace* or *Anna Karenina*. Concurrently scheduled with course C124T. S/U or letter grading.

**C240. Russian Folklore. (3 to 5)** Lecture, three hours. Lectures and readings in English. General introduction to Russian folklore, including survey of genres and related folkloric phenomena. Concurrently scheduled with course C170. S/U or letter grading.

**264. History of the Russian Literary Language. (4)** Lecture, three hours. Requisites: course 204, Slavic 201. Evolution of literary Russian from the 11th to 20th century. Lectures and analysis of texts.

**270. Russian Poetics. (4)** Lecture, three hours. Introduction to technical study of Russian poetics and versification, with attention to metrics, stanza forms, rhyme, and development of various verse types from the 18th into the 20th century.

**C277. Studies in Russian Literature: Nabokov. (4)** Lecture, three hours. Lectures and readings in English. Russian novelist (*The Gift*), American novelist (*Lolita*), autobiographer (*Speak Memory*), and critic. Concurrently scheduled with course C124N. S/U or letter grading.

**292. Seminar: 19th-Century Russian Literature. (4)** Seminar, three hours. Requisites: courses 212A, 212B. Selected authors and works from 19th-century poetry, prose, and drama. May be repeated for credit with consent of instructor and graduate adviser.

**293. Seminar: 20th-Century Russian Literature. (4)** Seminar, three hours. Requisite: course 213A. Selected authors and works from 20th-century poetry, prose, and drama. May be repeated for credit with consent of instructor and graduate adviser. S/U or letter grading.

**294. Seminar: Russian Literary Criticism. (4)** Seminar, three hours. Requisites: courses 211B, 212A, 212B, 213A. Detailed study of specific school of literary criticism, single literary critic, or period in Russian literary history as reflected in literary criticism. Simultaneous or similar phenomena in literary criticism in West. May be repeated for credit with consent of instructor and graduate adviser. S/U or letter grading.

**296. Seminar: History of Russian Culture. (4)** Discussion, three hours. Reading and discussion on selected topics in history of Russian culture.

## Serbian/Croatian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.



## Upper-Division Courses

**101A-101B-101C. Elementary Serbian/Croatian. (5-5-5)** Lecture, five hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Basic courses in Serbian/Croatian. P/NP or letter grading.

**102A-102B-102C. Advanced Serbian/Croatian. (4-4-4)** Lecture, three hours. Recommended preparation: course 101C (may be waived with consent of instructor). Course 102A is recommended preparation for 102B, which is recommended preparation for 102C. Each course may be waived with consent of instructor. P/NP or letter grading.

**103. Intensive Elementary Bosnian, Serbian, Croatian. (12)** Lecture, 25 hours. Intensive basic course in Bosnian, Serbian, Croatian equivalent to courses 101A, 101B, 101C. P/NP or letter grading.

**154. South Slavic Literature. (4)** Lecture, three hours. Lectures and readings in English. Survey of South Slavic literature from Middle Ages to the present. P/NP or letter grading.

**187A. Advanced Tutorial Instruction in Serbian/Croatian. (2)** Tutorial, one hour; laboratory, one hour. Enforced requisite: course 102C or Serbian/Croatian placement test. Tutorial and guided independent study of advanced Serbian/Croatian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**187B-187M. Advanced Tutorial Instruction in Serbian/Croatian. (2 each)** Tutorial, one hour; laboratory, one hour. Preparation: prior course in sequence or Serbian/Croatian placement test. Tutorial and guided independent study of advanced Serbian/Croatian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

## Slavic

### Lower-Division Courses

**5. Introduction to Eurasia. (5)** Lecture, three hours; discussion, one hour (when scheduled). Interdisciplinary survey of Eurasia. Introduction to history, culture, and geography of diverse area that is often vaguely understood as not quite Europe and not quite Asia, yet both at the same time home to several of history's most powerful overlaid empires, as well as its most notorious figures: Genghis Khan, Alexander the Great, Ivan the Terrible, and others. Exploration of contemporary issues in modern states of Russia, China, Mongolia, Kazakhstan, Uzbekistan, Tajikistan, Iran, and Azerbaijan. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M20. Visible Language: Study of Writing. (5)** (Same as Asian M20, Indo-European Studies M20, Near Eastern Languages M20, and Southeast Asian M20.)

Lecture, three hours; discussion, one hour. Consideration of concrete means of language representation in writing systems. Earliest representations of language known are those of Near East dating to end of 4th millennium BC. While literate civilizations of Egypt, Indus Valley, China, and Mesoamerica left little evidence of corresponding earliest developments, their antiquity and, in case of China and Mesoamerica, their evident isolation mark these centers as loci of independent developments in writing. Basic characteristics of early scripts, assessment of modern alphabetic writing systems, and presentation of conceptual basis of semiotic language representation. Origins and development of early non-Western writing systems. How Greco-Roman alphabet arose in 1st millennium BC and how it compares to other modern writing systems. P/NP or letter grading.

**M40. Christianities East and West. (5)** (Same as Religion M40.) Lecture, three hours; discussion, one hour. Survey of three major historical branches of Christianity—Eastern and Oriental Orthodoxy, Roman Catholicism, and Protestantism, contrasting how history, dogma, culture, and community structures develop in those three traditions. P/NP or letter grading.

**87. Languages of Los Angeles. (5)** Lecture, three hours; discussion, one hour. Comprehensive interdisciplinary investigation of Los Angeles as multilingual and multicultural metropolis. Review and analysis of features of major linguistic communities in Los Angeles area (Armenian, Cantonese, Japanese, Korean, Mandarin, Russian, Spanish, and others), with particular attention to social and cultural factors that play role in maintenance of language used in any given ethnic group. Familiarization with discipline and methodology of urban linguistics as part of urban geographical studies and as tool for investigating growing linguistic and cultural diversity of America's large cities. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**90. Introduction to Slavic Civilization. (5)** Lecture, three hours; discussion, one hour. Introductory survey of social and cultural institutions of Slavic peoples and their historical background. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**CM114. Teaching and Learning of Heritage Languages. (4)** (Same as Asian CM124 and Near Eastern Languages CM114.) Lecture, three hours. Consideration of issues relevant to heritage language learners (HLL) and to heritage language (HL) instruction. Readings and discussion on such topics as definitions of HLLs and HLLs; linguistic, demographic, sociolinguistic, and sociocultural profile of HLLs, particularly HL groups most represented among UCLA students; institutional and instructor attitudes toward HLLs; impact of student motivation and expectations on HL curriculum and teaching approaches; similarities and differences between HLLs and foreign language learners (FLLs) regarding teaching methods and materials; diagnostic testing and needs analysis; use of

oral/aural proficiency as springboard for literacy instruction; optimization of instruction of mixed HL and FL classes. Action research component included. Concurrently scheduled with course CM214. P/NP or letter grading.

**188A. Introduction to Eurasia. (2)** Lecture, 90 minutes. Experimental or temporary courses in East European and Eurasian studies, such as those taught by resident or visiting faculty members. May be repeated for credit with topic change. P/NP or letter grading.

**188B. Languages of Eastern Europe and Eurasia. (2)** Lecture or tutorial, 90 minutes. Program-sponsored experimental or temporary courses, such as those taught by resident or visiting faculty members, introducing less commonly taught Slavic, East European or Eurasian language. May be repeated for credit with change in language or language level. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191TA. Senior Capstone Thesis in Slavic Languages and Literatures. (2)** Seminar, three hours. Limited to senior departmental majors. Planning and completion of senior capstone thesis. Introduction to research methods and presentation skills; use of student target language for research required. Verbal and written presentations required. Letter grading.

**191TB-191TC. Senior Capstone Thesis in Slavic Languages and Literatures. (2-2)** Seminar, three hours. Course 191TA is enforced requisite to 191TB, which is enforced requisite to 191TC. Limited to senior departmental majors. Editing and completion of senior capstone thesis. Use of student target language for research required. Letter grading.

**197. Individual Studies in Slavic Languages and Literatures. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. P/NP or letter grading.

**198A. Honors Research in Slavic, East European, and Eurasian Languages and Literatures. (4)** Tutorial, three hours. Limited to senior departmental honors program students. Development of research bibliography and survey of literature in field of Slavic, East European, and Eurasian languages and cultures. Topics chosen through consultation with faculty mentor. Students meet regularly with faculty adviser to report on progress and discuss readings. Individual contract required. Letter grading.

**198B. Honors Research in Slavic, East European, and Eurasian Languages and Literatures. (4)** Tutorial, three hours. Requisite: course 198A. Limited to senior departmental honors program students. Research and writing field of Slavic, East European, and Eurasian languages and cultures under direct supervision of faculty mentor. Topics chosen through consultation with faculty mentor. Students meet regularly with faculty adviser to report on their research, discuss drafts of thesis chapters, and revise writing. Individual contract required. Letter grading.

**198C. Honors Research in Slavic, East European, and Eurasian Languages and Literatures. (4)** Tutorial, three hours. Requisites: courses 198A, 198B. Limited to senior departmental honors program students. Completion of honors thesis in field of Slavic, East European, and Eurasian languages and cultures. Topics

chosen through consultation with faculty mentor. Students meet regularly with faculty adviser to share drafts and revise writing. Thesis must be presented at University of California Undergraduate Conference on Slavic and East/Central European Studies. Final paper submitted to faculty adviser for grading and honors evaluation. Individual contract required. Letter grading.

**199. Directed Research in Slavic Languages and Literatures. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Literary Proseminar. (4)** Seminar, three hours. Required for MA (literature). Designed to prepare incoming graduate students for scholarly work by introducing them to resources (departmental, intramural, and extramural), methodologies, and techniques for analysis of literary materials and cultural studies. Letter grading.

**200B. Proseminar: Slavic Linguistics. (4)** Seminar, three hours. Required for MA (linguistics). Introduction to synchronic and diachronic study of Slavic languages and to research tools and methodologies associated with Slavic linguistics. S/U or letter grading.

**201. Introduction to Church Slavic. (4)** Lecture, three hours. Required for MA (linguistics, literature). Introduction to alphabet, phonology, and grammar; readings from Bible and other church Slavic texts (East Slavic recension). S/U or letter grading.

**202. Introduction to Comparative Slavic Linguistics. (4)** Lecture, three hours. Prerequisite: course 201. Required for MA (linguistics). Introduction to comparative phonology and grammar of Slavic languages.

**CM214. Teaching and Learning of Heritage Languages. (4)** (Same as Asian CM224 and Near Eastern Languages CM214.) Lecture, three hours. Consideration of issues relevant to heritage language learners (HLL) and to heritage language (HL) instruction. Readings and discussion on such topics as definitions of HLLs and HLLs; linguistic, demographic, sociolinguistic, and sociocultural profile of HLLs, particularly HL groups most represented among UCLA students; institutional and instructor attitudes toward HLLs; impact of student motivation and expectations on HL curriculum and teaching approaches; similarities and differences between HLLs and foreign language learners (FLs) regarding teaching methods and materials; diagnostic testing and needs analysis; use of oral/aural proficiency as springboard for literacy instruction; optimization of instruction of mixed HL and FL classes. Action research component included. Concurrently scheduled with course CM114. S/U or letter grading.

**M229. Introduction to Slavic Bibliography. (2)** (Same as Information Studies M229C.) Introduction to Slavic and East European bibliography for the humanities and social sciences. Emphasis to be determined by requirements and background of enrolled students. Topics include relevant library terminology and concepts; survey of languages and transliteration systems; acquisition of Slavic and East European library materials; Slavic and East European scholarship in the West; relevant reference sources, archival resources, and research methods; survey of online databases; compilation of bibliographies. S/U grading.

**230A-230B-230C. Topics in Comparative Slavic Literature. (4-4-4)** Lecture, three hours. Recommended preparation: upper-division courses in Czech, Polish, Russian, and Yugoslav literatures. Two terms required for PhD (literature). May be repeated for credit with consent of instructor and graduate adviser. **230A.** Middle Ages through Baroque; **230B.** Classicism to Romanticism; **230C.** Realism to Modernism.

**251. Introduction to Baltic Linguistics. (4)** Lecture, three hours. Prerequisite: course 202. Introduction to Baltic linguistics, with special attention to relationship between Baltic and Slavic.

**281. Seminar: Slavic Linguistics. (4)** Seminar, three hours. Selected topics in comparative and historical Slavic linguistics. May be repeated for credit with consent of instructor and graduate adviser.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**495. Teaching Slavic Languages at College Level. (4)** Seminar, 90 minutes; discussion, 90 minutes. Designed for graduate students. Theory and practice of language teaching. Discussion of contemporary language teaching methodology as well as problems of pedagogical grammar. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (2 to 8)** Tutorial, to be arranged. S/U grading.

**599. Research for PhD Dissertation. (2 to 12)** Tutorial, to be arranged. S/U grading.

## Ukrainian

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101A-101B-101C. Elementary Ukrainian. (5-5-5)** Lecture, five hours. Course 101A is recommended preparation for 101B, which is recommended preparation for 101C. Each course may be waived with consent of instructor. Basic courses in Ukrainian language. P/NP or letter grading.

**102A-102B-102C. Advanced Ukrainian. (4-4-4)** Lecture, three hours. Recommended preparation: course 101C (may be waived with consent of instructor). Course 102A is recommended preparation for 102B, which is recommended preparation for 102C. Each course may be waived with consent of instructor. Development of advanced listening, speaking, reading, and writing skills. P/NP or letter grading.

**CM124G. Studies in Russian Literature: Gogol. (4)** (Same as Russian CM124G.) Lecture, three hours. Lectures and readings in English. Short stories, novel *Dead Souls*, and selected plays. Concurrently scheduled with course CM224G. P/NP or letter grading.

**152. Ukrainian Literature. (4)** Lecture, three hours. Lectures and readings in English. Survey of writers, literary trends, and issues in Ukrainian literature from the late 18th century to the present. Special attention to works of such major figures as Kotlyarevsky, Shevchenko, Franko, Ukrainka, and Tychnya.

**C180. Variable Topics in Ukrainian Literature. (4)** Seminar, three hours. Reading knowledge of Ukrainian recommended but not required. Topics include major writers, genres, or periods. May be repeated for credit with topic change. Concurrently scheduled with course C280. P/NP or letter grading.

**187A. Advanced Tutorial Instruction in Ukrainian. (2)** Tutorial, one hour; laboratory, one hour. Preparation: two years of Ukrainian and/or Ukrainian placement test. Tutorial and guided independent study of advanced Ukrainian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**187B-187M. Advanced Tutorial Instruction in Ukrainian. (2 each)** Tutorial, one hour; laboratory, one hour. Preparation: prior course in sequence or Ukrainian placement test. Tutorial and guided independent study of advanced Ukrainian: advanced conversation, composition, vocabulary development, and review of selected grammar topics. May be repeated for credit with topic change. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

### Graduate Course

**CM224G. Studies in Russian Literature: Gogol. (4)** (Same as Russian CM224G.) Lecture, three hours. Lectures and readings in English. Short stories, novel *Dead Souls*, and selected plays. Concurrently scheduled with course CM124G. S/U or letter grading.

**C280. Variable Topics in Ukrainian Literature. (4)** Seminar, three hours. Reading knowledge of Ukrainian recommended but not required. Topics include major writers, genres, or periods. May be repeated for credit with topic change. Concurrently scheduled with course C180. S/U or letter grading.

## SOCIAL SCIENCE

*Interdepartmental Program  
College of Letters and Science*

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[Social Science](#)  
310-825-3565

Juliet A. Williams, PhD, *Chair*

## Faculty Committee

Andrew Apter, PhD (*Anthropology, History*)  
Robin L.H. Derby, PhD (*History*)  
Kelly A. Kay, PhD (*Geography*)  
Tamar Kremer-Sadlik, PhD (*Anthropology*)

Davide Panagia, PhD (*Political Science*)  
 Brooke A. Scelza, PhD (*Anthropology*)  
 David Delgado Shorter, PhD (*Anthropology, World Arts and Cultures/Dance*)  
 James W. Stigler, PhD (*Anthropology, Psychology*)  
 Juliet A. Williams, PhD (*Gender Studies*)  
 Min Zhou, PhD (*Asian American Studies, Sociology*)

## Overview

The Division of Social Sciences is home to leading researchers working to advance understanding of human societies around the globe. With over 250 faculty members housed in more than 15 departments and programs, the division encourages students to explore diverse perspectives and approaches to the study of social life.

The Social Science Interdepartmental Program offers the Master of Social Science (MSS) self-supporting degree. Drawing from current theories, methods, and professional practices from across the social sciences, students develop proficiency with quantitative and qualitative research methods used to address complex social problems. The intensive one-year curriculum emphasizes creative problem-solving and collaborative research practices. Graduates will be prepared for academic and professional careers.

## Graduate Major

### Master of Social Science

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Social Science

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**110A. Social Science in Context: Perspectives and Methods in Study of Culture and Society. (4)** Lecture, three hours. Introduction to social science perspectives and methods for study of culture and society through combination of theoretical discussions and practical exercises. Students gain understanding of interaction of persons, societies, cultures, environ-

ments, and time. Examination of relationships between language, culture, and society to gain insights into processes of social reproduction of identities, power relations, and inequality. Students are exposed to working parts of social research: ethics of studying people and communities, gathering and analyzing of data (e.g., observations, interviews, and surveys), and interpretation and presentation of findings. Students gain informed and responsible values and attitudes towards just society, intercultural understanding, informed and active citizenship, ethical research practices, and lifelong learning. Letter grading.

**110B. Social Science in Context: Understanding New Zealand from Colonialism to Neoliberalism. (4)** Lecture, eight hours (four weeks). Offered as part of summer UCLA Travel Study Program to New Zealand. Examination of life in Aotearoa, also known as New Zealand. Focus on historical events and social processes as well as axes of difference such as ethnicity and class and ways in which they have shaped and continue to influence cultural, political, social structures, and norms and values in New Zealand. Students learn to employ social science theories and concepts to gain deeper understanding of issues New Zealand faces. Through readings, classroom discussions, field trips, which provide valuable firsthand experiences, local guest speakers, and unique opportunity of exploring forces that shape society and culture in context of one of most celebrated democracies in world, students gain greater insight into social and political relations and events elsewhere in world, including U.S. Letter grading.

**188. Academic Innovation in Industry. (1)** Lecture, one hour (six weeks). Exploration of how to apply disciplinary knowledge to industry problems and technology trends. Students build skills to enable them to create novel ways of meeting challenges, build network intelligence, and communication their ideas and expertise. Students also learn problem-solving techniques like lean startup approach. Uses case study approach to show how social scientists have connected with recent technology trends to produce impactful innovation. P/NP grading.

### Graduate Courses

**M240. Data and Society. (4)** (Same as Digital Humanities M221.) Seminar, three hours. Introduction to way data and computing technologies increasingly play pivotal role in social life. Students pose critical questions about social impact of data, while also gaining literacy in engaging digital and data tools. Students learn to recognize historically and institutionally produced biases in data research and science. Engagement is encouraged with how to work with data for social justice aims. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400A-400B. Social Science Research and Perspectives. (4-4)** Seminar, three hours. Exploration of contribution of social science research to addressing complex social problems. Students engage wide array of disciplinary perspectives, research methods, and analytical approaches. Emphasis placed on development of multidisciplinary, integrative approaches to social science research. Students learn how to identify and frame social problem; how to identify, interpret, and evaluate relevant research; and how to synthesize research findings generated from different theoretical, methodological, and disciplinary approaches. Development of essential research, writing, and analytic skills. Letter grading.

**401. Qualitative Social Science Research Methods. (4)** Seminar, three hours. Introduction to range of qualitative approaches used in social science research and analysis through combination of theoretical discussions and practical experience. Examination of practical and epistemological issues in qualitative research in workshop format. Covers practical workings of qualitative research: gathering data through inter-

views, focus groups, observation, questionnaires, and archival research; strategies for recording, coding, and analyzing qualitative data; and evaluating and presenting qualitative research. Prepares students to undertake research using qualitative methods through collaborative class research project. Letter grading.

**402. Qualitative Data Analysis in Social Science. (4)** Lecture, two and one half hours; discussion, one hour. Introduction to fundamentals of data analysis and statistics, focusing on application of statistical methods in social problems research. Students develop skills and strategies for evaluating research evidence, and for comparing and synthesizing results of studies that adopt different research methodologies. Descriptive statistics, inferential statistics, probability, statistical tests, correlation, and causation, and regression analysis. Other topics include organizing quantitative data (e.g., tables, graphs), methods for describing data with respect to central tendency, dispersion, and association. At course end students should be able to perform data analysis using appropriate software, to interpret results, and to make critical evaluations of quantitative social science research. Letter grading.

**403. Quantitative Evidence and Analysis in Social Science. (4)** Seminar, three hours; laboratory, one hour. Advanced training in data analysis and statistics, and training in strategies for evaluating research evidence and comparing results of studies that adopt varying research methodologies. Students gain experience working with large datasets, and with designing, testing, and validating statistical modeling techniques. Students are familiarized with datasets most relevant to their individual research interests. Students receive general training and individualized mentoring in selecting appropriate dataset for their major research paper (MRP). Letter grading.

**404. Research Design in Social Science. (4)** Lecture, three hours. Introduction to main components of research projects, focusing on research questions, theoretical frameworks, and research design. Students design feasible research plan for individual project. Students identify research topic and specify research question; identify existing data for original analysis; compare theoretical frameworks for social scientific analysis of data; assess relevant evidence and literature; and explore approaches to data analysis. Students submit assignments, and complete research proposal. Letter grading.

**410. Engaged Social Science. (4)** Seminar, three hours. Exploration of theory and practice of engaged social science, tracing its historical development from policy studies and related fields to more activist modalities of critique and intervention. Drawing on classic and contemporary studies in sociology, anthropology, political science, environmental studies, and social justice, to engage students in larger debates about politics of knowledge in relation to issues, such as poverty, racism, public health, refugees, gang culture, gender hierarchies, public education, and citizenship. Letter grading.

**419. Data Analysis. (4)** Lecture, three hours. Workshop in which students develop research and analysis skills related to establishing and executing data analysis plan. Students engage in intensive peer-review process, working collaboratively in small groups. Students receive detailed feedback from instructor, teaching assistants, and faculty readers, and are expected to routinely revise their work. Students refine their presentation skills and prepare three- to five-minute presentation. Letter grading.

**420. Research Design and Analysis. (4)** Seminar, three hours. Guided completion of major research paper (MRP). Students receive detailed feedback from instructor, revise literature review, finalize analysis, tighten rhetoric, and improve organization of manuscript to transform it into final research paper. Letter grading.

**430. Community-Based Research. (4)** Lecture, three hours; fieldwork, two hours. Study of principles, ethics, and methods of community-based research (CBR), and place and purpose of scholarly inquiry. Working in teams, students conduct small-scale research projects in collaboration with local community organizations. Teams work closely with instructors and organization agents on all aspects of research design,



execution, and data analysis. Students apply quantitative and qualitative research methods skills acquired in courses 401 and 402 to research projects. Attendance at research site meetings, team meetings, and weekly on-campus class meetings required. Each team produces and submits final research report to community partner by end of quarter. Letter grading.

**430A. Community-Based Research, Part 1. (4)** Lecture, three hours; fieldwork, two hours. Part 1 of 2-part series. Students learn principles, ethics, and methods of community-based research (CBR), and place and purpose of scholarly inquiry. Working in teams, students conduct small-scale research projects in collaboration with local community organizations. Research projects are selected in consultation with instructor and community organization to be completed within quarter. Teams work closely with instructors and organization agents on all aspects of research. Teams develop research design, data collection methods and protocols, recruit participants, and engage in data collection. Students apply quantitative and qualitative research methods skills acquired in courses 401 and 402 to their research projects. Students are expected to attend meetings at research sites, team meetings, and weekly class meetings on campus. Letter grading.

**430B. Community-Based Research, Part 2. (4)** Lecture, three hours; fieldwork, two hours. Part 2 of 2-part series. Focus on data analysis and writing of final report. Working in teams, students develop data analysis plan, identify units of analysis, develop coding scheme, determine statistical inquiries, and conduct data analysis (including statistical analyses of quantitative data and coding of qualitative data) and interpretation of results. Work is divided fairly among team members with each team member contributing based on their skills and talents. Teams work closely with instructors and organization agents on all aspects of research and write-up. Students are expected to attend all meetings at research sites, team meetings, and weekly class meetings on campus. Each team produces and submits final research report to instructor and community partner. Letter grading.

## SOCIAL THOUGHT

*Interdisciplinary Minor  
College of Letters and Science*

A316 Murphy Hall  
Box 951430  
Los Angeles, CA 90095-1430

**Social Thought**  
310-267-5430  
**Minor Adviser**

Jeffrey J. Guhin, PhD, *Chair*

## Faculty Committee

Cécile Guédon, PhD (*European Languages and Transcultural Studies*)

Jeffrey J. Guhin, PhD (*Sociology*)

Barbara Herman, MA, PhD (*Law, Philosophy, Society and Genetics*)

Mitchum A. Huehls, PhD (*English*)

Jeffrey Prager, PhD (*Sociology*)

Stephanie B. Santana, PhD (*Comparative Literature*)

## Overview

The Social Thought minor helps students to think better: to think more deeply and more critically, drawing on the intellectual resources of major thinkers from around the world. Emphasizing social and political thought from the 17th century to today, students read widely to develop an original argument about social life,

culminating in a thesis project that is an original contribution to scholarship.

The minor builds on lower-division introductory exposure to the history of modern ideas as embodied in a number of key texts by significant thinkers such as Darwin, Descartes, de Beauvoir, Du Bois, Freud, Hobbes, Locke, Marx, Mill, Nietzsche, Rousseau, Said, Smith, Weber, and Wollstonecraft. Building upon these foundations, students are encouraged to read widely and make connections to intellectuals who are not traditionally considered part of the canon of North Atlantic thought, especially thinkers from the Global South, indigenous communities, and historically marginalized groups.

Insisting that the best way to develop your thoughts is to write about them, the minor culminates in a two-term capstone project, a thesis of at least 5,000 words, under the direction of a UCLA faculty mentor. Students from all majors are encouraged to join the Social Thought minor. The Social Thought minor is about asking big questions about big ideas, and writing answers to those questions.

## Undergraduate Minor Social Thought Minor

### Admission

The Social Thought minor is limited to students who formally apply and are admitted. To apply, students must meet with the academic adviser, and submit an application, a letter of recommendation from a faculty mentor, and an application essay to the College Academic Counseling Office, A316 Murphy Hall. For more information, see the minor [website](#).

To enter the minor, students must have an overall grade-point average of 2.0 or better and apply for admission only after successfully completing the following lower-division requirements: Clusters 21A and 21B, or two courses from German 56, Honors Collegium 20, 21W, 55, 57, 83W, Philosophy 6, Political Science 10, Sociology 10.

### The Minor

*Required Upper-Division Courses (16 to 20 units):* Four courses spanning at least two different departments selected from African American Studies M114C, Anthropology 100, 131, Community Engagement and Social Change M115, Classics M124, Economics 107, History 122A, 122C through 122F, 131A, 142A, 142B, Honors Collegium 110, Philosophy 151A, C151B, 153A, C153B, 154, C156, Political Science M111A through 114A, M115C, 116A, 116B, 119, M119A, M180A, Sociology 101, 102.

*Required Research Colloquia and Senior Thesis (12 units):* Students must also complete Social Thought 190A and 199A in one term and courses 190B and 199B in the following term.

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor. No more than two courses (8 to 10 units)

may be applied toward both this minor and a major or minor in another department or program.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Social Thought

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190A-190B. Research Colloquia in Social Thought I, II. (2-2)** Seminar, two hours. Corequisite for course 190A: course 199A; for 190B: course 199B. Limited to juniors/seniors. Required of students in Social Thought minor. Designed to bring together students undertaking supervised senior thesis work in seminar setting with one or more faculty members to discuss their work or related work in Social Thought minor. Led by one supervising faculty member. Course 190A may be repeated for credit. P/NP grading.

**199A-199B. Directed Research or Senior Thesis in Social Thought I, II. (4-4)** Tutorial, to be arranged. Corequisite for course 199A: course 190A; for 199B: course 190B. Limited to juniors/seniors. Required of students in Social Thought minor. Supervised indi-



vidual research under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. Letter grading.

## SOCIAL WELFARE

*Meyer and Renee Luskin School of Public Affairs*

3357 Public Affairs Building  
Box 951656  
Los Angeles, CA 90095-1656

### Social Welfare

310-825-2892

Laura S. Abrams, PhD, *Chair; Director, MSW Program*

Todd M. Franke, PhD, *Chair, Doctoral Program*

Susan Lares-Nakaoka, MSW, PhD, MA, *Director, Field Education*

## Faculty Roster

### Professors

Laura S. Abrams, PhD  
Ron Avi Astor, MSW, PhD (*Marjorie Crump Professor of Social Welfare*)  
David Cohen, PhD  
Todd M. Franke, PhD  
Ian W. Holloway, MSW, MPH, PhD  
Ananya Roy, PhD (*Meyer and Renee Luskin Professor of Inequality and Democracy*)  
Laura Wray-Lake, PhD

### Professors Emeriti

Rosina M. Becerra, PhD  
A.E. Benjamin, Jr., PhD  
Diane S. de Anda, PhD  
Alfreda P. Iglehart, PhD  
Aurora P. Jackson, PhD  
Mark S. Kaplan, DrPH  
Stuart A. Kirk, DSW (*Marjorie Crump Professor Emeritus of Social Welfare*)  
James E. Lubben, MSW, MPH, DSW  
Ailee Moon, PhD  
Alex J. Norman, DSW  
Jack Rothman, PhD  
Robert F. Schilling, PhD  
Leonard Schneiderman, PhD  
Fernando M. Torres-Gil, PhD

### Associate Professors

Lené F. Levy-Storms, MPH, PhD  
Carlos E. Santos, PhD

### Assistant Professors

Leyla Karimli, PhD  
Tatiana Londoño, PhD  
Judith L. Perrigo, LCSW, PhD  
Amy E. Ritterbusch, PhD  
Cindy C. Sangalang, MSW, PhD  
Latoya A. Small, PhD  
David C. Turner III, PhD

### Adjunct Professors

Helmut K. Anheier, PhD  
Jorja J. Leap, PhD

### Adjunct Assistant Professors

Khush E. Cooper, MSW, PhD  
Ayako Miyashita Ochoa, JD

### Fieldwork Consultants

Laura Alongi, LCSW  
Larhia R. Dunham, MSW  
Woo K. (Toby) Hur, MSW  
Tranishia L. James, LCSW  
Hector R. Palencia, LCSW  
Michelle Talley, MSW

## Overview

The primary objectives of the Department of Social Welfare graduate program are to prepare leaders for the profession of social work and to develop the empirical base for all facets of practice. In response to changing demographic trends and the emergence of new social problems, the department provides leadership in the areas of policy, practice, and research and in the development of an innovative curriculum for training students and professionals to meet the service needs of a multicultural clientele.

The educational program is based on the premise that all students need to acquire a common body of knowledge and basic skills, and a common understanding of the philosophy and values of the profession. These then form a sound foundation for the development of more specialized knowledge and skills along the lines of each student's interests and the needs of the field.

Students are encouraged to take advantage of the resources within UCLA by selecting elective courses in related disciplines. In addition, as a department within the Luskin School of Public Affairs, the program affords students instructional opportunities in the other affiliated departments—Public Policy and Urban Planning.

Beyond national opportunities in the profession of social work, there is increasing demand for qualified and experienced social workers to serve in the international field, where many social service programs are conducted under the auspices of the United Nations, the U.S. government, and national sectarian organizations. Graduates of the doctoral program generally secure appointments at major universities or research centers.

The challenge to the department, the profession, and those who join us as students is to prepare to forge the paths, build the bridges, and shape the future to ensure that all individuals, families, and communities enjoy better education, better health care, better job training, and better economic futures.

## Graduate Majors

### Master of Social Welfare

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announce-

ments, other publications, and websites of the schools, departments, and programs.

### Concurrent Degree Program

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Social Welfare/Asian American Studies MA
- Master of Social Welfare/Juris Doctor
- Master of Social Welfare/Master of Public Health
- Master of Social Welfare/Master of Public Policy

## Social Welfare PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Social Welfare

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**100A. Introduction to Social Welfare: Policies and Programs. (4)** Lecture, four hours. Origin and development of major U.S. social welfare programs and policies guiding them, with emphasis on analysis of policy developments/issues related to provision of social welfare services. Study of historical and current responses of profession to major social problems. P/NP or letter grading.

**100B. Social Welfare Policy: Overview. (4)** Lecture, four hours. Requisite: course 100A. Review of existing policy regarding major social issues in field of social welfare. Examination of discrepancy between need and capacity of social agencies to address need. Exploration of differential impact of policy on various populations. P/NP or letter grading.

**101. Social Welfare in Multicultural Society. (4)** Lecture, four hours. Social policy viewed from perspective of various cultural groups. Students to become aware of their own cultural perspective and learn to recog-

nize similarities and differences in values, perspectives, and beliefs across cultural groups. P/NP or letter grading.

**102. Social Welfare Organizations and Community Systems.** (4) Lecture, four hours. Recommended requisites: courses 100A, 100B. Detailed demonstration of implementation of policy via functioning of human service organizations. Examination of organizational structures/functions. Exploration of characteristics and organization of community and forces that influence its development and change. P/NP or letter grading.

**103. Introduction to Direct Practice with Individuals, Families, and Groups.** (4) Lecture, four hours. Requisites: courses 100A, 100B, 101. Description and demonstration of basic skills employed in direct social work practice via casework process. Students practice these skills in written, role-play, small group, and video or audio exercises. P/NP or letter grading.

**M104C. Diversity in Aging: Roles of Gender and Ethnicity.** (4) (Same as Chicana/o and Central American Studies M106B, Gender Studies M104C, Gerontology M104C, and Public Affairs M131.) Lecture, four hours. Exploration of complexity of variables related to diversity of aging population and variability in aging process. Examination of gender and ethnicity within context of both physical and social aging, in multidisciplinary perspective utilizing faculty from variety of fields to address issues of diversity. Letter grading.

**M104D. Public Policy and Aging.** (4) (Same as Gerontology M104D.) Lecture, four hours. Examination of theoretical models and concepts of policy process, with application to aging policy. Analysis of decision-making processes that affect aging policy. Description of history of contemporary aging policy. Exploration of current policy issues affecting elderly. P/NP or letter grading.

**M104E. Social Aspects of Aging.** (4) (Same as Gerontology M104E.) Lecture, four hours. Topics include theories of aging, economic factors, changing roles, social relationships, and special populations. Weekly seminars organized around key aspect of social gerontology. P/NP or letter grading.

**105. Social Welfare Policy in Modern America: Historical Perspectives.** (4) Lecture, three hours; outside study, nine hours. Historical overview of American social policy dealing with three core societal problems: poverty, sickness, and joblessness. Programs developed by governments to ameliorate these problems have typically been public insurance programs or cash transfers such as unemployment insurance, welfare, and Social Security. Collectively these programs are known as the welfare state; examination of origins of the U.S. welfare state, its development over time, and features that make it distinctive as compared to welfare states in other nations. Letter grading.

**106. Research Seminar and Field Observation: Social Welfare.** (4) Seminar, three hours; discussion, one hour; outside study, eight hours. Didactic component with focus on development of basic skills in the areas of research. Students select one field of observation experience (module) from a number of field settings. P/NP or letter grading.

**107. Field Practicum: Social Welfare.** (4) Lecture, three hours; discussion, one hour; outside study, eight hours. Requisite: course 106. In field practicum students are placed in a specific agency where they combine observation of agency functions with participation in specific agency tasks and roles under instructional supervision of an agency mentor and a UCLA faculty member. P/NP or letter grading.

**M108. Biomedical, Social, and Policy Frontiers in Human Aging.** (5) (Same as Gerontology M108 and Public Affairs M130.) Lecture, four hours. Limited to juniors/seniors. Course of human aging charted in ways that are based on variety of recent research frontiers. Use of conceptual frameworks to increase relevance of aging to students' lives and enhance their critical thinking—biopsychosocial approach that is based on recognition that aging is inherently interdisciplinary phenomenon, and life course perspective that is distinguished by analytical framework it provides for understanding interplay between human lives and changing social structures, and allows students to un-

derstand how events, successes, and losses at one stage of life can have important effects later in life. Focus on individuals as they age within one particular sociohistorical context. Letter grading.

**M110. Inequality and Democracy: Analysis and Praxis of Public Problems.** (4) (Same as Urban Planning M110.) Lecture, three hours; discussion, one hour. Analysis and praxis of public problems. Taking up case of persistent inequality in liberal democracies, coverage of key frameworks and methodologies for understanding and analyzing poverty and inequality and examination of forms of action, from role of government to social movements, that seek to intervene in such problems. Study of problems, programs, policies, and politics in globally interconnected, transnational world, while avoiding analytical divide between global north and global south. Letter grading.

**130A-130B. Community Research and Services Seminars.** (4-4) Seminar, three hours; service learning, four hours; outside study, five hours. Course 130A is requisite to 130B. Limited to juniors/seniors. History and roles of social welfare policy within government, organizations, and communities. Reflections about service-learning site experiences, with application of issues related to lecture and seminar readings. Students to be assigned to two-term tutoring/mentoring site where they apply tutoring techniques as they assist middle school children living in impoverished areas of Los Angeles County. In Progress (130A) and P/NP or letter (130B) grading.

**131. Poverty, Poor, and Welfare Policy.** (4) Seminar, three hours. Limited to juniors/seniors. Current research and policy issues concerning poverty in the U.S., with specific emphasis on single-parent households. Overview of measurements and characteristics of poor people; alternative theoretical explanations of poverty; historical overview of major social welfare policies to combat poverty, particularly Aid to Families with Dependent Children (AFDC) and Personal Responsibility and Work Opportunity Reconciliation Act (PROWA); and critical appraisal of recently enacted state welfare reform policies. Relationship between research knowledge about poverty and current policies, and effects of gender, ethnicity, and class on patterns of poverty and policy responses. P/NP or letter grading.

**132. Community Analysis and Community Needs.** (4) Lecture, three hours. Limited to juniors/seniors. Theoretical and practical foundation for understanding and depicting demographic composition of communities and for determining community needs. Use of systems theory as organizing framework. Community-level interventions are affected by community's social ecology, culture, economic system, political system, ethnic composition, and class structure. Agencies often seek to define community needs and develop interventions to respond to those needs. Knowledge of community infrastructure necessary for ascertaining its strengths and resources that can be mobilized for addressing and responding to community needs, issues, and concerns. Social service agencies and communities can work together in partnership to enhance quality of community life. P/NP or letter grading.

**M140. Introduction to Study of Aging.** (4) (Same as Psychology M140.) Lecture, three hours. Designed for juniors/seniors. Perspectives on major features of human aging—biological, social, psychological, and humanistic. Introduction to information on range of influences on aging to prepare students for subsequent specialization. P/NP or letter grading.

**M142XP. Intergenerational Communication across Lifespan.** (4) (Formerly numbered M142SL.) (Same as Gerontology M142XP and Public Affairs M129XP.) Lecture, three hours; fieldwork, one hour. Limited to juniors/seniors. What do you say to your parents in conversation? How do you talk to your grandparents? Does your family talk well to one another as group? How do you communicate well with boss who is 30 years older than you? Individuals of all ages interact with one another, and their interactions have significance throughout their lives. Introduction to psychological, interpersonal, and societal issues related to intergenerational communication across lifespan. Letter grading.

**M151. Child Welfare Policy in America.** (4) (Formerly numbered 151.) (Same as Public Affairs M124.) Lecture, three hours. Limited to juniors/seniors. Examination of public child welfare system in the U.S. Review of social policies and programs that impact children. History of social policies and programs for children, including discussion of orphanages, foster care, and adoptions. Transformation of public child welfare system into child protection system. Impact of welfare reform on child policies and programs in the U.S. Major programs designed to provide safety net for disadvantaged children, including welfare, food stamps, child care, child support, and children's allowance programs. Review of research and analysis in this area. Overview of social policies and programs that impact children in the U.S. Examination of comparative policies in other countries. P/NP or letter grading.

**162. Health Policy and Services.** (4) Seminar, three hours. Limited to juniors/seniors. Contemporary issues in healthcare financing and delivery and historical perspective on these issues. Role of government in healthcare and ways controversy about this role continues to shape and constrain public policy in health. Major public programs, notably Medicare and Medicaid, and their relationship to issues of access and cost for diverse vulnerable populations. Various public and private approaches to healthcare reform and ways of thinking about their predicted impact, cost, and political feasibility. Issues in care of persons with chronic illness and debate about public and private approaches to long-term care reform. Social work roles in healthcare policy and practice. P/NP or letter grading.

**163. Prevention of Risky Substance Use and Related Problems.** (4) Lecture, four hours. Limited to juniors/seniors. Prevention of substance use and related harms from legal and illegal substances is major concern to parents, communities, and nations. Examination of research related to patterns of drug use and related harm (such as crime and mental health disorders) and effectiveness of interventions to reduce these problems. Through review of science-based programs and policies, evaluation of effectiveness of evidence-based interventions to increase student knowledge, skills, and expertise in determining effective interventions to reduce drug-related harm, using most up-to-date information. P/NP or letter grading.

**164. HIV Prevention in U.S. and Developing World.** (4) Lecture, three hours. Limited to juniors/seniors. Examination of various approaches to HIV prevention, drawing on infectious disease paradigms from public health and theories of behavior change from fields of psychology, sociology, and communications. Sexual behavior and injection drug use, existing and promising technologies to reduce HIV transmission, and fiscal, cultural, ethical, and moral dilemmas in allocation of prevention resources. P/NP or letter grading.

**M165. Disability Policy and Services in Contemporary America.** (4) (Same as Disability Studies M130 and Gerontology M165.) Lecture, three hours. Limited to juniors/seniors. Growing numbers of people of all ages with disabilities are leading active and productive lives in American communities. Many others are struggling to lead such lives. Who are people with disabilities in contemporary America? How has U.S. responded over time to various needs and aspirations of people with disabilities, young and old? What demands have been made over time by disability advocates? How has government addressed demands of advocates for various disability populations? What do we know about extent to which public policies and programs are responsive to people in need? How do demographics, economics, and politics continue to influence evolving public policy responses? P/NP or letter grading.

**181. Nonprofit Sector, State and Civil Society.** (4) Lecture, three hours; outside study, nine hours. Use of political economy perspective to analyze forces that have shaped rise and characteristics of nonprofit sector and its constituent elements. Examination of social history of nonprofit sector in U.S. Exploration of legal and policy environments and distinct organizational forms. Comparative perspective between U.S. and other countries. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Social Welfare. (4)** Seminar, three hours; outside study, nine hours. Examination in depth of particular subfield of social welfare (e.g., child welfare, children and youth, nonprofit, health, mental health). Limits of investigation set by individual instructor. May be repeated for credit with topic change. Letter grading.

**194. Internship Seminars: Social Welfare. (1)** Seminar, one hour; outside study, three hours. Corequisite: course 195. Not open to freshmen. Introduction to topics relevant to psychosocial determinants of children's health and community resources for children and families, with opportunity to gain breadth and depth of knowledge in seminar setting. May be repeated for credit. P/NP grading.

**195. Community Internships in Social Welfare. (2)** Tutorial, four hours. Corequisite: course 194. Not open to freshmen. Introductory course in community-based child health and advocacy. Students learn about community resources for children and families through service learning experience and work with pediatric patients and families in UCLA pediatric unit. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. Letter grading.

**199. Directed Research in Social Welfare. (2 or 4)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**202A-202B. Dynamics of Human Behavior. (4-4)** Lecture, two and one half hours. Requisites: courses 201A, 201B. Deviations and pathologies or stresses in physical, emotional, and social areas of human functioning as those problems relate to role and function of social workers. S/U or letter grading.

**203A-203B-203C. Integrative Seminars. (4-4-4)** Seminar, two and one half hours. Integrative courses that bring together theory and practice of social work in variety of topic areas relevant to profession. Includes identification of problem areas and populations-at-risk requiring further examination. S/U or letter grading.

**M203X. Special Topics in Public Affairs. (4)** (Same as Public Policy M291C and Urban Planning M210A.) Seminar, three hours; outside study, nine hours. Advanced seminar on emerging issues across public policy, social welfare, and urban planning. May be repeated for credit. S/U or letter grading.

**M206A. Homelessness: Housing and Social Service Issues. (4)** (Same as Urban Planning M270.) Lecture, 90 minutes; discussion, 90 minutes; one field trip. Review of current status of homelessness: who homeless are, what social services and housing are available, existing and proposed programs—appropriate architecture, management, and sources of funding. Outside speakers include providers of services to homeless. Letter grading.

**210A. Foundations of Social Work Practice I. (4)** Lecture, two and one half hours. Corequisite: course 401A. Framework for all social work practice—purpose, values, knowledge, and skills—and core processes of preparation, engagement, problem or need definition, assessment, contracting, and beginning professional action with and on behalf of clients. Introduction to evaluation of outcomes. Letter grading.

**210B. Foundations of Social Work Practice II. (4)** Lecture, two and one half hours. Corequisite: course 401B. Weighing and carrying out evidence-supported practices based on differential assessment of people and their situations, with particular focus on following intervention approaches: case management, motivational interviewing, crisis intervention, cognitive, task-centered, and solution-focused therapies, as well as interventions appropriate for family functioning, small group processes, and environmental modification (advocacy and community organization). Continued evaluation of outcomes. Letter grading.

**210C. Foundations of Social Work Practice III. (4)** Lecture, two and one half hours. Corequisite: course 401C. Core concepts of social work practice in organizational, community, and policy settings. Exploration of leadership style and development of personalized group work skills. Role of macro practice in agency-based social work in advancing strategies of organizational and social change. Interface and interaction among policy decisions, community needs, and program development. How societal values influence formation, implementation, and evaluation of social welfare policies, programs, and services. Analysis of social, economic, and political context of community practice in order to understand policy roots of economic and social injustices. Letter grading.

**211A. Human Behavior in Social Environment: Theoretical Perspectives in Social Work and Social Welfare I. (4)** Lecture, two and one half hours. Introduction to terminology and scope of systems framework that underlies social work practice interventions. Students learn how to identify and assess small- and large-scale forces that influence problems presented by clients. Letter grading.

**211B. Human Behavior in Social Environment: Theoretical Perspectives in Social Work and Social Welfare II. (4)** Lecture, two and one half hours. Concerted study of racism, oppression, and social functioning covering various perspectives on roots and significance of racism and other forms of oppression in U.S. (and other societies) today. Forces contributing to initiation and maintenance of institutional oppression and inequality across social categories such as race, ethnicity, gender, sexuality, religion, ability, and age. Letter grading.

**212. Human Behavior in Social Environment: Critical Self-Awareness and Intergroup Dialogue. (2)** Lecture, 75 minutes. Introduction to critical self-awareness and intergroup dialogue. Exploration and appreciation of worldviews and experiences of colleagues. Through self-awareness students learn to engage with diversity and difference in social work practice.

Through intergroup dialogue, students learn to explore social group identity, conflict, community, and social justice. S/U grading.

**213A. Social Welfare Research Methods. (4)** Lecture, two and one half hours. Introduction to various research methodologies, including experimental and quasi-experimental designs, survey research methods, qualitative methods, and single subject and group-based research designs. Exploration of ethical issues pertaining to social welfare and social science research. Students learn and practice formulating research problems, research questions, and hypotheses and learn how to critically review theory and research. Measurement, sampling procedures, and basic descriptive statistics. Letter grading.

**213B. Applied Statistics in Social Welfare. (4)** Lecture, two and one half hours; discussion, one hour. Core statistics course builds on research methods taught in course 213A, and designed to help students develop basic understanding of descriptive and inferential statistical approaches. Introduction to statistical reasoning, with emphasis on how statistics can help us understand world. Topics include numerical and graphical summaries of data, data acquisition and experimental design, probability, hypothesis testing, confidence intervals, correlation, and regression. Letter grading.

**214A. Foundations of Social Welfare Policy. (4)** Lecture, two and one half hours. Overview of key areas of social welfare policy. Roots of American social welfare policy and how they have given rise to today's social policy structure. Path of social welfare policy development, birth of profession of social work and how it has paralleled major social policy issues from early colonial settlements to present day. Specific events and important individuals that have influenced public policy affecting vulnerable populations, such as racial and ethnic minorities, women, children, the poor, and other diverse populations. Examination of role of social research in informing social welfare policy. Letter grading.

**214B. Leadership for Social Change. (4)** Lecture, two and one half hours. Overview and understanding of leadership and social policy elements for effective social change in dynamic and diverse society. Builds on foundations of social welfare history and policy developments. Examination of elements of policy advocacy and competencies for effective social work leadership in organizational and community settings and integration of research and theory in addressing and resolving complex social problems. Letter grading.

**M215. Global Public Affairs: Governing in Interconnected World. (4)** (Same as Public Policy M228B and Urban Planning M231.) Lecture, three hours; outside work, nine hours. Conceptually, focus on interplay between three major institutional complexes of modern, globalizing societies and organizations that operate within them: state, market, and civil society. Study moves between abstract theory and concrete examples, offers sense of where these institutions and organizations have come from, and helps chart their present trajectories. From perspective of governance, assessment of roles and configurations of institutions and organizations to address today's challenges. S/U or letter grading.

**223. Seminar: Social Work Profession. (2)** Seminar, two hours. Nature and role of social work in contemporary society; relationships with other professions; probable future trends in profession; social work ethics, professional organizations, certification licensing; professional responsibility for continued self-criticism and improvement of profession. S/U grading.

**229A. Craft of Social Welfare Scholarship I. (4)** Lecture, three hours; outside study, nine hours. Limited to PhD students. Exploration of one problem for study—its history, current state of knowledge about why problem exists, and what might be done about it. Survey of several problems and alternative ways in which problems have been conceptualized and studied to understand how scholars use theory and empirical evidence to advance what is known, what is yet unknown, where there are important gaps in understanding particular problems, and what might be done to solve them. Letter grading.

**229B. Craft of Social Welfare Scholarship II. (4)** Lecture, three hours; outside study, nine hours. Enforced requisite: course 229A. Limited to PhD students. Continued narrowing of student focus on one social welfare research problem, moving from understanding of evolution and context of general problem to more detailed and intensive review of research literature on specific researchable question to deepen student understanding of existing knowledge on topic and begin to identify one or more critical gaps in knowledge to explore. Discussion of different methods of summarizing research literatures, identifying seminal studies, and interpreting contradictory findings. Regular meetings to discuss ongoing work and to encourage students to review their work with their faculty advisers and/or other mentors with expertise in their problem areas. Letter grading.

**229C. Craft of Social Welfare Scholarship III. (2)** Lecture, 90 minutes; outside study, four and one half hours. Enforced requisite: course 229B. Limited to PhD students. Focus on craft of scholarly writing for publication to help students develop effective narrative frame for presentation, make choices about extent of detail and shape of literature review, and achieve cogent presentation and conclusion. Consideration of elements of effective professional writing. Letter grading.

**231A. Family Systems Interventions. (4)** Lecture, two and one half hours. Application of theories and techniques to develop framework for couples and family social work practice. Examples of social work practice with couples and families may include developing relationship skills for those struggling with mental illness; supportive interventions for family members of impaired or frail elderly; parent education and skill development for welfare recipients; individual, couple, and family interventions for victims of abuse; bereavement support groups, or interventions helping families to recover from experiences with substance abuse, domestic violence, sexual difficulties, and more. S/U or letter grading.

**231B. Advanced Social Welfare Practice. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Advanced-level, critical analysis of theories, concepts, and principles underlying social casework practice. Specific attention to deviation and stress as conditions affecting functioning of individuals and groups and to diagnostic knowledge and competence required in rehabilitation and prevention. S/U or letter grading.

**231E. Advanced Social Welfare Practice: School Social Work. (4)** Lecture, two and one half hours; outside study, nine hours. Integration of theory and practice as they pertain to role of social workers in school settings. Biopsychosocial/ecological assessment of students (including, but not limited to, differences due to ethnic and/or cultural diversity and to students who are learning handicapped), ecological intervention strategies, collaboration within multidisciplinary team, and role of liaison between pupils, family, school, and community. Use of discussion, videos, current literature, and case presentation to explore impact of school social workers as change agents. S/U or letter grading.

**231F. Advanced Social Welfare Practice: Cognitive-Behavioral Theories and Methods. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Advanced-level, critical analysis of key contributors, essential concepts, core theories, current controversies, and recent research findings in contemporary cognitive-behavioral therapy; case conceptualization from cognitive-behavioral perspective; specific cognitive and behavioral assessment methods and intervention techniques and their typical applications; contextual considerations, including human diversity and other sociocultural and developmental factors, in arriving at case conceptualizations and treatment plans. S/U or letter grading.

**231G. Advanced Social Welfare Practice: Substance Abuse Intervention. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Advanced-level, critical analysis of major intervention approaches—individual,

family, group, and environmental—to treating substance abuse and dependency. Specific attention to skills and self-awareness to integrate biological, psychological, and social factors in assessing and intervening with substance-using clients and target populations. S/U or letter grading.

**231J. Advanced Social Welfare Practice: Child Welfare. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Advanced-level, critical analysis of role of public child welfare worker in relationship to consumer, agency, and community. Further development of social work and case management skills in context of public child welfare practice. Clinical case management explored as intervention in its own right in addition to its use as mechanism for linking children and families to other social systems, professions, and forms of intervention. Interpretation of current public child welfare events, trends, terms, and laws and their relationship to direct practice issues. S/U or letter grading.

**231K. Advanced Social Welfare Practice: Mental Health. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Designed to provide students with grounding in social work practice with adults in mental health settings. Emphasis on evidence-based approaches to providing services to pervasive and persistent mentally ill. Exploration of strengths-based recovery-oriented approaches that are consistent with knowledge and values of social work practice. Exposure to range of interventions applicable to most common mental health problems and barriers to service delivery for this vulnerable population, such as stigma, criminalization, cultural bias, and gaps in knowledge. S/U or letter grading.

**231M. Advanced Social Welfare Practice: Health. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Advanced-level, critical analysis of various roles that social workers occupy in health settings and strategies for working with healthcare teams. From case-based approach, examination of variety of clinical challenges, assessment techniques for use in multiple settings, and interventions to implement with individuals, families, groups, and multidisciplinary healthcare teams. Evaluation of policy implications that impact social work practice in health settings. S/U or letter grading.

**231N. Early Childhood Mental Health. (4)** Lecture, two and one half hours; outside study, nine hours. Evidence-based practice training with children and their caregivers in agency-based settings. Integration of theoretical bases of practice with associated methods. Focus on early attachments relationships and on-going life experiences with conflicts, loss, and trauma that occur within context of relationships. S/U or letter grading.

**231P. Advanced Social Welfare Practice: Gerontology. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Advanced-level, critical analysis of theoretical models related directly to practice with diverse population of older adults. Presentation of comprehensive tools for multidimensional geriatric assessment. How to engage in collaborative treatment planning across range of late-life problems and address impediments to intervention process. Theoretical underpinnings and most effective practice models to enable students to serve needs of older clients and their families as they adjust to late-life transitions, as well as to health and mental health problems most prevalent for older adults. Client populations range from well elderly to physically frail and/or demented from diverse backgrounds. S/U or letter grading.

**231Q. Advanced Social Welfare Practice: Psychopharmacology. (4)** Lecture, two and one half hours. Offers distinctive social work/social welfare approach to psychopharmacology and psychiatric medications by emphasizing systems thinking, critical thinking, working with clients as partners, and social justice. Discussion of how psychoactive/psychotropic/psychiatric drugs are named and classified, and how they are studied and approved by FDA. Review of current effectiveness and safety data (and placebo effects) for

main classes of drugs, and highlighting of current crisis of confidence in field. Brief summaries of basic neurobiological actions of drugs. Examination of previous and emerging roles of social workers around medications, as well as legal and ethical dictates of practice. Four practice skills are taught as essential for beginning social workers: reviewing relevant literature critically, taking psychiatric medication histories, understanding clients' subjective views and meanings of medications, and monitoring medications to reduce harms. Letter grading.

**231S. Child and Adolescent Trauma. (4)** Lecture, two and one half hours. Introduction to common concepts (general theory and foundational knowledge), which inform evidence-based assessment and intervention with traumatized children and adolescents. Strength-based practice highlighted along with focus on identification of protective and promotive factors that foster resiliency and post-traumatic growth. Trauma is broadly defined, and includes children and adolescents exposed to traumatic events including but not limited to natural disasters, war, abuse and neglect, medical trauma, and witnessing interpersonal crime (e.g. domestic violence) and other traumatic events. Highlights role of development, culture, and empirical evidence in trauma-specific case conceptualization and treatment planning. Addresses level of functioning of primary care giving environments and assesses capacity of community to facilitate restorative processes. Letter grading.

**232. Prevention and Promotion in Health and Mental Health. (4)** Lecture, two and one half hours. Core course for Health and Mental Health Across the Lifespan area of concentration. Introduction to social determinants/pathways of health, one of over-arching integrative and evidence-based frameworks accounting for upstream influences on health and mental health of populations. Review of different aspects of this approach and illustration of them with examples from efforts to prevent health and mental health problems and to promote positive health and mental health. Introduction to leading psychosocial theories that underpin social work practice in health promotion and disease prevention. Letter grading.

**M241E. Nonprofit Organizations and Philanthropy: Management and Policy. (4)** (Same as Public Policy M228 and Urban Planning M288.) Lecture, three hours; outside study, nine hours. Increased importance of nonprofit organizations—as service providers, vehicles of humanitarian assistance, policy advocates, social entrepreneurs, innovators, and as instruments of government reform—have moved this set of institutions closer to center of social welfare, urban planning and public policy agendas. Introduction of conceptual background, examination of theories and aspects of organizational behavior, and management models and policy frameworks. Lectures, seminar-type discussion, in-class presentations, and guest presentations. Letter grading.

**241G. Advanced Social Welfare Practice: Community Mapping. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Designed to familiarize students with use of geographic data in community practice. Development of skill base for community practice that provides students with tools necessary to organize and plan effectively for political, economic, and social justice in communities. How to use geographic information systems (GIS) to inform community practice. S/U or letter grading.

**241H. Advanced Social Welfare Practice: Institutional Governance and Human Service Management. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Conceptual framework and analytic tools provided to understand organizational features of human services. Human service organizations work on people to improve, sustain, or prevent decline of well-being. Because of their function these organizations have special attributes that distinguish them from other organizations. Examination of these attributes, theoretical perspective to study them, and analysis of factors that shape nature of work they do. Explanation of determinants of relations between workers and clients by looking at such variables as policy environ-



ment, values and mission, internal structure, service technology, reward structure, organizational responses to staff and client diversity, and power relations between workers and clients. S/U or letter grading.

**241I. Advanced Social Welfare Practice: Grant Writing. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Process of grant writing, with emphasis on learning necessary skills to construct functional grant proposals. Application of problem-solving knowledge to development of human service grants. Various steps in writing grant proposals and opportunity to design/prepare grant proposals. S/U or letter grading.

**241J. Advanced Social Welfare Practice: Community Practice. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Designed to deepen student knowledge of community practice methods and empirical base that supports these methods in field of social welfare. Theory, practice, and research methods related to major community practice approaches in context of evidence-based philosophies and processes. Development of skills to address community problems using best available data by applying course concepts to student projects. S/U or letter grading.

**241K. Advanced Social Welfare Practice: Policy Practice. (4)** Lecture, two and one half hours; outside study, nine hours. Corequisite: required social work practicum. Methods of social work policy practice and policy advocacy as problem-solving process. Analysis of consequences of existing social policies, particularly for marginalized populations, development of alternative policies, and use of different advocacy tools/techniques to gain support for policy change. S/U or letter grading.

**242. Resilience, Risk, and Thriving among Children and Families. (4)** Lecture, two and one half hours. Core course for Child and Family Well-Being area of concentration. Introduction to advanced study of child and family well-being from social work perspective. Conveys seminal knowledge of key settings—and experiences within them—that impact children and family functioning. Drawing from resilience theory and empirical research, review of aspects of contexts such as parenting and family systems, schools, and neighborhoods—that serve as risk and protective factors for healthy child development. Emphasis on prevention efforts to ensure healthy development for all youth, stop family violence, and increase social connections. Prepares students for professional roles as social workers who serve, advocate for, and empower children and families around relevant social and economic justice issues. Letter grading.

**M249A. Introduction to Luskin PhD Research. (4)** (Formerly numbered 249A.) (Same as Urban Planning M208A.) Lecture, one hour; discussion, two hours. Required of first-year PhD students. Introduction to design and execution of public affairs research; exploration of subfields of public affairs scholarship and approaches to research on contemporary topics in social welfare and urban planning. Preparation and filing of PhD program of study. Letter grading.

**M249B. Introduction to Qualitative Research. (4)** (Formerly numbered 249B.) (Same as Urban Planning M208D.) Lecture, three hours; outside study, nine hours. Requisite: course M249A. Required in first or second year of PhD program. Introduction to philosophy, theories, logic, design, and practice of qualitative research by studying its varied methodologies. Letter grading.

**M249C. Logic of Inference and Causation. (4)** (Formerly numbered 249C.) (Same as Urban Planning M208B.) Seminar, three hours. Requisites: courses M249A, M249B. Required in first or second year of PhD program. Development of researchable hypotheses and accompanying research strategies, understanding of threats to validity, review of critiques of traditional methods and of alternative approaches to scholarship. Letter grading.

**251A. Advanced Social Welfare Practice: Domestic and Sexual Violence. (4)** Lecture, two and one half hours. Designed for second-year MSW students in macro and clinical social work. One most pervasive aspect of women's existence has been violence

against them as consequence of their gender. Factual information and critical examination of theories, research, and clinical and policy practices in social work regarding various forms of violence against women and girls in their homes, workplaces, and communities provided. Exploration of macro- and micro-level interventions in social work practice to address impact of violence on communities and individuals. Letter grading.

**251B. Advanced Social Welfare Practice: Military Social Work. (4)** Lecture, two and one half hours. Designed for second-year MSW students. Foundational understanding of contemporary issues being experienced by U.S. service members, veterans, and their families, following longest wars in U.S. history. Exploration of different modes of military service and identities (i.e., active duty, National Guard, Reserve, and veteran) along with correlative issues for family members. Examination of family life cycles and military policies and approach to families. Use of trauma-informed practice lens to focus on working with veteran community of all campaigns, as well as current military members and their families. Discussion of military and veteran policies, programs, and practices in context of both social work theory and research, as basis for military social work practice at direct service and policy practice levels. Vicarious trauma, care for caregivers, and provider self-care also addressed. S/U or letter grading.

**252. Theories and Practices of Social Justice. (4)** Lecture, two and one half hours. Core course for Social and Economic Justice area of concentration. Trains students to understand philosophies of social justice, history of ideas, and key ethical frameworks underpinning social work. Connects theory and practice through focus on poverty interventions, welfare policy, mass incarceration, community organizing, homelessness, and displacement. Focus on U.S. with emphasis on global and comparative approach to social welfare. Letter grading.

**M258. Applied Research Design: Dissertation and Thesis Proposal. (4)** (Formerly numbered 258.) (Same as Urban Planning M208C.) Seminar, three hours. Required of all PhD students who have passed their field examinations but have not yet advanced to candidacy and all MURP students completing their thesis capstone option. Advanced research design course that guides students in selecting problem/question to study, reviewing previous research on problem/question, framing specific research questions/hypotheses, and selecting methodology and plan for testing hypotheses. May be repeated for credit. S/U or letter grading.

**259. Variable Topics in Statistics in Social Sciences. (4)** Lecture, three hours. Limited to graduate students. Designed to provide in-depth understanding of particular topics in area of applied statistics/measurement to graduate students engaged in conducting research in broad array of fields that comprise social sciences. Letter grading.

**260A. Research Capstone I: Project Development. (4)** Lecture, two and one half hours. Formulation of research problems, questions, and hypotheses that guide critical review of literature and illuminate understanding of interest area. Working in groups of three to four, development of proposal for research capstone project that includes literature review and outlines plans for collecting data or using existing data to address applied problem. Culminates in completion of full proposal for research capstone project and articulated work plan for team members. S/U grading.

**260B. Research Capstone II: Data Gathering, Analyses, and Interpretation. (2)** Research group meeting, two hours. Supports students in implementing their research capstone, including data gathering and preliminary analysis. Class meetings may occur in small or large groups to assist with trouble shooting or to teach specialized research skills. Culminates in presentation of project methods and initial results. In Progress grading (credit to be given only on completion of course 260C).

**260C. Research Capstone III: Data Gathering, Analyses, and Interpretation. (2)** Research group meeting, two hours. Analysis and interpretation of data and finalization of presentation formats of results.

Grounding of interpretation of results in existing literature and discussion of findings for real-world applications. Culminates in final paper that includes abstract, theory and literature review, methods, results, discussion, and implications for social welfare. S/U grading.

**270. Being Leader and Effective Exercise of Leadership: Ontological/Phenomenological Model. (4)** Lecture, five hours; outside study five hours. Students develop unique context for leadership which gives them direct access to effective exercise of leadership as their natural self-expression, in any situation, regardless of whether they hold title/position. Students have opportunity to become aware of and deal with personal obstacles (ontological constraints) to exercise of leadership. Using leadership project and diverse study group as laboratory, students practice and develop capacities to operate with integrity, uncover ontological constraints, reflect critically, listen authentically, and speak to those they are leading in way that promotes shared vision and inspires others to contribute. S/U or letter grading.

**281A-281B-281C. Advanced Social Welfare Research. (2-2-2)** Discussion, two hours. Individual or group research projects requiring intensive examination and analysis of social problem area, directed toward development of research knowledge and techniques for social work practice. In Progress (281A, 281B) and S/U or letter (281C) grading.

**284A-284B-284C. Doctoral Research Apprenticeship. (2 to 4 each)** Tutorial, to be arranged. Limited to PhD students. Exposes first-year PhD students to process of conducting research in social welfare. Students develop range of research skills and understanding of ethical procedures in research. Students participate in various activities depending on specific research project with which they work. Activities include research tasks such as conducting literature reviews, developing research questions, collecting data, cleaning and preparing data, analyzing data, and writing up research findings for conference and journal submissions. Students work closely with their faculty mentor and other graduate students. Introduction to research process and skills necessary for conducting research in social sciences. In Progress (284A, 284B) and S/U (284C) grading.

**285A-285B-285C. Research in Social Welfare. (4-4-4)** Discussion, three hours. Review of areas of research of concern to social workers, with special attention to design, instrument construction, data collection, data processing, data reduction, analysis, and interpretation. Designs studied include survey, panel, experimental observation, and theory development research. S/U or letter grading.

**285D. Research in Child Welfare. (4)** Lecture, three hours. Integrated examination of development of empirical research in child welfare field. Critical assessment of current approaches to meet needs of children who come to attention of child welfare agencies. Examination of research and theory in child welfare field. Review of student knowledge of research methods and statistics. Letter grading.

**285E. Research in Gerontology. (4)** Lecture, three hours. Overview of research in aging. Development of research questions, selecting appropriate theoretical frameworks, conducting literature reviews, selecting appropriate research design, identifying sampling methods. Special considerations in aging research, including sampling, questionnaire design, and recruitment issues. Letter grading.

**285F. Research in Health. (4)** Lecture, three hours. Research in area of health policy and services. Discussions of readings about range of research from field of health services. Identification of research design issues, design of research instruments, analysis of strengths and limitations of current approaches to health services research, consideration of alternative roles for social work practitioners in arena of health services. Letter grading.

**285G. Research in Mental Health. (4)** Lecture, three hours. Research methods in mental health. Application of experimental designs, survey research methods, ethnographic methods, single-subject designs, and observational methods. Operational definition of variables and selection and design of appro-

priate measures for research in mental health. Practice in critiquing published research related to mental health issues. Letter grading.

**285H. Program Evaluation Research. (4)** Lecture, three hours. Discussion of differences and similarities between evaluation and other research, alternative program evaluation methods, roles and limitations of evaluation research in real world, development of proposals for feasible program evaluation research. Letter grading.

**285I. Research in Youth Populations. (4)** Lecture, three hours. Research methods as applied to problems, issues, and interventions pertaining to youth populations. Instruction and experience in applying experimental and quasi-experimental designs, survey research methods, ethnographic methods, single-subject designs, and observational methods. Operational definition of variables and selection and design of appropriate measures for research with children and adolescents. Letter grading.

**286A. Survey of Research Methods. (4)** Seminar, three hours. Basic concepts underlying research methods. Content includes theoretical and conceptual approaches to research problem formulation; research design, including experimental, comparative, and survey; sampling; statistical methods; methods of observation and techniques of data analysis. Letter grading.

**286B. Advanced Research Methods. (4)** Seminar, three hours. Advanced concepts underlying research methods. Continuing study of theoretical and conceptual approaches to research problem formulation; research design, including experimental, comparative, and survey; sampling; statistical methods; methods of observation and techniques of data analysis. Letter grading.

**286C. Research Internship. (4)** Fieldwork, four hours. Supervised study and training through participation in on-going research project or one initiated by students and carried out under faculty supervision, enabling students to apply research skills developed in prior courses. May be repeated for credit. S/U grading.

**290A-290B-290C. Seminars: Social Work. (4-4-4)** Seminar, three hours; outside study, nine hours. Series of seminars dealing with trends in social work and social welfare, with focus on current social problems affecting individuals, groups, and communities and new patterns of intervention based on recent demonstrations and research. S/U or letter grading.

**290D. Criminal Justice and Mass Incarceration. (4)** Lecture two and one half hours. Exploration of relationship between social welfare and criminal justice system focusing on gangs, prison organization, reform, and reentry. Examination of life trajectories, development of and response to gangs in U.S. and globally. Examination of origin and development of major criminal justice policy surrounding gangs and relationship to punishment, incarceration, death penalty, and development and endurance of prison gangs. Analysis of criminal justice system history, future directions, and capacity of social welfare programs to address needs of marginalized populations. Letter grading.

**290E. Lesbian, Gay, Bisexual, and Transgender Health, Law, and Public Policy. (4)** Lecture two and one half hours. Examination of LGBT-identified communities throughout U.S. Identification of health disparities that exist within broad conception of LGBT-identified communities, including disparities among most marginalized individuals and those living at intersections of multiple identities. Use of law and policy by situating goal of achieving health equity for LGBT communities in current political climate. Offers opportunity to evaluate how better health outcomes for LGBT people may be helped by bringing relevant social science research to bear in shaping law and policy matters moving forward. Letter grading.

**290F. Firearm Violence Prevention Policy. (4)** Lecture, two and one half hours. Introduction to upstream way of thinking about firearm-related violence. Examination of range of topics connected to contemporary debates about firearm violence in U.S. using collection of philosophical, social, and epidemiological literature. Ways of thinking theoretically and scientifically about causes and consequences of firearm violence in dif-

ferent contexts, from mass shootings to firearm suicides. Major theories advanced to explain firearm violence, methods used in scientific study of firearm violence, and important research findings about correlates, patterns, processes, and trends related to firearm violence. S/U or letter grading.

**290G. Psychotropic Drugs and Medications: Harm Reduction Policies. (4)** Lecture, two and one half hours. Philosophy and policy applications of harm reduction approaches to legal (including prescription) and illegal psychoactive drug use in U.S. and elsewhere. Visions and obstacles for future management of psychoactive drugs such as opioids, stimulants, psychedelics, and benzodiazepines according to harm reduction principles. Implications for social work practice across lifespan. Letter grading.

**M290I. Children with Special Healthcare Needs: Systems Perspective. (4)** (Same as Community Health Sciences M420 and Health Policy M420.) Lecture, three hours; fieldwork, one hour. Examination and evaluation of principles, policies, programs, and practices that have evolved to identify, assess, and meet special needs of infants, children, and adolescents with developmental disabilities or chronic illness and their families. Letter grading.

**M290J. Child Welfare Policy. (4)** (Same as Public Policy M212.) Lecture, three hours. Development of social policy as it affects families and children from different cultural backgrounds and as it is given form in public child welfare system. Examination of development of an infrastructure to support needs of children and families. S/U or letter grading.

**M290K. Mental Health Policy. (4)** (Same as Public Policy M213.) Lecture, three hours. Examination of evolution of social policy and services for mentally ill, with emphasis on political, economic, ideological, and sociological factors that affect views of mentally ill and services they are provided. S/U or letter grading.

**M290L. Poverty, Poor, and Welfare Reform. (4)** (Same as Public Policy M214 and Urban Planning M246.) Lecture, three hours. Major policy and research issues concerning poverty and social welfare policy directed toward poor in U.S. S/U or letter grading.

**M290M. Health Policy. (4)** (Same as Public Policy M215.) Lecture, three hours. Introduction to contemporary issues in healthcare financing and delivery, providing historical perspective on emergence of these issues. Examination of major public programs and their relationship to issues of access and cost. S/U or letter grading.

**M290N. Public Policy for Children and Youth. (4)** (Same as Public Policy M216.) Lecture, three hours. Policy issues that affect children and adolescents in relation to their interaction with schools and community, with emphasis on impact of policy across federal, state, and local levels. S/U or letter grading.

**M290P. Aging Policy, Elderly and Families. (4)** (Same as Public Policy M261.) Lecture, three hours; outside study, nine hours. Designed for graduate students. Examination of theoretical models and concepts of policy process and application to aging policy. Analysis of decision-making processes that affect social policies. Description of historical development of contemporary policy. Exploration of current proposals and issues. Letter grading.

**M290Q. Social Welfare Policy in Asian American Communities. (4)** (Same as Asian American Studies M290Q.) Seminar, three hours. Overview of social welfare policy in Asian American communities. Introduction to major social welfare policies and programs in the U.S. and impact on Asian American communities. Policy development, approaches, processes of implementation, evaluation, and strategies to effect policy. S/U or letter grading.

**M290S. Politics, Power, and Philanthropy. (4)** (Same as Public Policy M227 and Urban Planning M287.) Lecture, three hours; outside study, nine hours. Use of political economy perspective to analyze forces that have shaped rise and characteristics of nonprofit sector and its constituent elements. Examination of social history of nonprofit sector in U.S. Exploration of

legal and policy environments and distinct organizational forms. Comparative perspective between U.S. and other countries. S/U or letter grading.

**290T. Juvenile Justice Policy. (4)** Lecture, two and one half hours; outside study, nine hours. Designed for graduate students. Exploration of evolution of juvenile justice system in U.S. and issues that have shaped current-day practice. Role of social workers in system to be theme throughout course. Letter grading.

**M290U. Community Development and Housing Policies: Roles of State, Civil Society, and Nonprofits. (4)** (Same as Public Policy M243 and Urban Planning M275.) Lecture, three hours; outside study, nine hours. Designed for graduate students. Examination of role of U.S. housing policy and role of government agencies and community organizations. Is problem housing or economic development? Should interventions be directed toward inner city housing markets or through neighborhood strategies? What lessons can be learned from experiences of other countries? Letter grading.

**290W. International Social Welfare. (4)** Lecture, three hours; outside study, nine hours. Intended for graduate students interested in pursuing analysis of key international social welfare issues. Topics approached from perspective of globalization of social, economic, and political activities. Problems of global poverty, social injustice and inequality, and issues of racial, ethnic, and cultural diversity, with emphasis on multifaceted contributions of social work, social services, and social welfare and international social development within rich and poor countries. Acquisition of knowledge of international social welfare activities, as well as analytical skills to address and debate complex international issues. S/U or letter grading.

**M290X. Comparative Perspective on States, Markets, and Civil Society. (4)** (Same as Public Policy M247B and Urban Planning M210B.) Lecture, two and one half hours. Governance is about solving and managing societal problems, such as climate change, poverty, migration, security, mobility, pollution, or trade relations. Contemporary governance is complex set of laws, rules, and regulations involving rights and responsibilities of three institutional complexes of modern societies (state, market, and civil society), interests that guide them, and legitimacy and resources they command. Actors often reach across systemic, jurisdictional, and national boundaries; their relationships can be cooperative, neutral, or fraught with conflict, and governance outcomes can vary significantly. These dynamics involve fundamental challenges and, consequently, require significant governance readiness. Lectures, debates, in-class exercises, and student presentations. Exploration of several issues in more detail, e.g., types of state capacities, democracy, crisis management, governance innovation, and specific policy fields such as infrastructure or global finance. S/U or letter grading.

**M297B. Current Issues in Public Affairs. (2)** (Same as Public Policy M297C and Urban Planning M297B.) Lecture, one to two hours. Introduction to wide range of current issues in public affairs. Luskin school faculty present material from their research and teaching. Assigned readings are distributed in advance of each meeting. S/U grading.

**M297F. Career Planning and Management. (2)** (Same as Public Policy M297F and Urban Planning M297F.) Tutorial, six hours. Designed to meet professional development needs of first-year Public Policy, Social Welfare, and Urban Planning students. Development of career management skills while balancing busy life of graduate student. More than just deciding on chosen career path, career planning and management involves taking concrete steps to become career ready. Students gain fundamental career management skills to be competitive on job market, including creating competitive résumé and practicing interviewing articulately. Offers opportunity to learn professional development skills to assist with career planning strategies. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guid-

ance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**401A-401B-401C. Practicum: Social Work. (3-3-3)** Laboratory, 16 hours. Educationally directed practicum conducted in selected health, welfare, and educational facilities. Provides opportunities for students to test their theoretical knowledge and to acquire disciplined practice foundation in profession. In Progress (401A, 401B) and letter (401C) grading.

**402A-402B-402C. Advanced Practicum: Social Work. (4-4-4)** Laboratory, 20 hours. Requisites: courses 401A, 401B, 401C. Practicum in social work, arranged for students in keeping with their major field of study. In Progress (402A, 402B) and letter (402C) grading.

**490. Professional Communication for Social Welfare. (2)** Lecture, two hours. Writing workshop on students' papers in progress, with eye toward scholarly publication. Analysis and group discussion of rhetorical and stylistic principles. May be repeated once. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Special Study and Research in Social Welfare. (2 to 8)** Tutorial, to be arranged. Individual programming for selected students to permit pursuit of subject in greater depth. S/U or letter grading.

**596B. Special Study and Research for PhD Candidates. (2 to 12)** Tutorial, to be arranged. Limited to PhD students. S/U grading.

**597A. Preparation for MSW Comprehensive Examination. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597B. Preparation for PhD Qualifying Examinations. (2 to 12)** Tutorial, to be arranged. Limited to PhD students. S/U grading.

**599. PhD Dissertation Research in Social Welfare. (2 to 12)** Tutorial, to be arranged. Limited to PhD students. S/U grading.

## SOCIETY AND GENETICS, INSTITUTE FOR

Center for Interdisciplinary Instruction  
College of Letters and Science

3360 Life Sciences  
Box 957221  
Los Angeles, CA 90095-7221

**Society and Genetics**

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**Program e-mail**

Aaron L. Panofsky, PhD, *Director*  
Patrick Allard, PhD, *Vice Chair,*  
*Undergraduate Education*

## Faculty Roster

### Professors

Michael E. Alfaro, PhD  
Soraya de Chadarevian, PhD  
Wayne W. Grody, MD, PhD  
Martie G. Haselton, PhD  
Christopher M. Kelty, PhD  
Russell Korobkin, JD (*Richard C. Maxwell Professor of Law*)

Hannah L. Landecker, PhD  
Rachel C. Lee, PhD  
Megan M. McEvoy, PhD  
Christina G.S. Palmer, PhD, *in Residence*  
Aaron L. Panofsky, PhD  
Alexandra M. Stern, PhD  
Stefan Timmermans, PhD

### Professors Emeriti

Joan B. Silk, PhD  
Matthew Norton Wise, PhD

### Associate Professors

Patrick Allard, PhD  
Nanibaa' A. Garrison, PhD  
Terence D. Keel, PhD  
Jessica W. Lynch, PhD

### Assistant Professors

Danielle J. Carr, PhD  
Adys Mendizabal, MD, MS  
Nicholas E. Shapiro, PhD  
Bharat J. Venkat, PhD

### Adjunct Assistant Professor

Michelle A. Rensel, PhD

## Overview

The Human Biology and Society majors provide a rigorous interdisciplinary education in current issues at the intersection of human biology, genetics, and society where bridging the institutional divide between the life sciences and human sciences (humanities and social sciences) is necessary.

The teaching strategy emphasizes the value of synthetic, integrative thinking. Learning can best be organized synthetically around the sorts of knowledge and skills required to investigate and address such problems rather than by building up from the stepwise sequences of traditional disciplines. Preparation for the majors is centered on three areas of study that together prepare students to solve problems at the intersection of biology and society: genes and gene expression; human evolutionary biology; and society, diversity, and identity. The majors provide an important integrative space where different ways of knowing in the human and life sciences are explored, interrelated, and applied. Core and capstone courses emphasize problem-based learning about pressing issues that inextricably link society, culture, and biology, such as medical privacy rights, gene patents, regulation of stem cell research, and questions of race, gender, and identity.

Programmatically, the majors consist of required elements that develop critical thinking skills, knowledge, and excellence in written and spoken communication; and extracurricular involvement in academic research and corporate/community internship. The mission is to educate students who become leaders in diverse areas such as law, medicine, humanities, social sciences, and biological sciences, and to have them interact and work together to form a deep understanding of the issues at the intersection of human social systems, evolutionary biology, and genetics.

The minor in Society and Genetics provides undergraduate students with the opportunity to

understand and probe the complex problems and possibilities presented by modern genetics, with special attention to their social context and content. Given the dynamic interaction between genetics and the social world in which it is embedded, the minor is of necessity multidisciplinary and emphasizes a collaborative cross-disciplinary approach to instruction in the core courses of the minor and exposure to a wide range of disparate scholarship through elective courses available in such areas as anthropology, biology, history, philosophy, public policy, and sociology.

## Undergraduate Majors

### Human Biology and Society BA

#### Learning Outcomes

The Human Biology and Society major has the following learning outcomes:

- Demonstrated strong foundation of knowledge in social science and evolutionary biology and genetics
- Skills to critically analyze and evaluate qualitative and quantitative data and social biological theories
- Formulation of effective and convincing written and oral arguments that integrate biological and social evidence
- Work well in multidisciplinary teams
- Skills at communicating across disciplines and leveraging knowledge from multiple perspectives
- Demonstrated proficiency in at least one area of concentration at the interface between biology and society
- Integration of ethical, legal, and societal concerns in planning, conducting, and assessing research
- Use of societal and biological information to critically assess complex real-world problems and to employ interdisciplinary skills to help solve them

#### Entry to the Major

##### Admission

Admission to the Human Biology and Society BA major is by application and competitive, using courses, grades, grade-point averages, and personal statements as minimum standards for consideration. Only a limited number of students are admitted each year. Applicants are not automatically accepted into the major.

Students must apply for major standing at the beginning of spring quarter of their sophomore year. Applications submitted after the spring quarter deadline are considered during fall quarter of the junior year only as space in the program permits. No applications are considered after fall quarter of the junior year.

Pre-major standing is not required to apply for the major. A copy of the major application is available on the department [major web page](#).

## Pre-major

Incoming first years may be admitted as pre-majors on acceptance to UCLA. All other students must first complete Society and Genetics 5, M71A, or M72A, and then contact the undergraduate counselor in 3360 Life Sciences to request pre-major standing.

## Transfer Students

Transfer applicants to the Human Biology and Society BA major with 90 or more units must complete the following preparatory courses prior to admission to UCLA: one year of general biology (the equivalent of Life Sciences 7A, 7B, and 7C), introductory chemistry, one statistics course, one anthropology human evolution course, and four introductory social sciences or history courses. Society and Genetics 5 must be taken at UCLA once a transfer student is admitted to the University.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* One core course from Society and Genetics 5, M71A, or M72A; and Anthropology 1, Chemistry and Biochemistry 14A or 14AE, Life Sciences 7A, 7B, 7C, Statistics 10 or 13, and four social theory courses (minimum of 16 units) from African American Studies 1, M5, 6, American Indian Studies M10, Anthropology 3, Asian American Studies 10 or 10W, 20 or 20W, 40 or 40W, 50 or 50W, Chicana/o and Central American Studies 10A, 10B, Clusters M1A through 80CW, English M30, Environment M30, Gender Studies 10, Geography 3, History 3A, 3B, 3C, 3D, 12A, 12B, 12C, Honors Collegium 70A, Labor Studies M1A, M1B, M1CW, 10, Molecular, Cell, and Developmental Biology 50, 60, Philosophy 3, 4, 6, 7, 8, 22 or 22W, Political Science 10, 40, Public Affairs 10, 20, 30, 80, Society and Genetics 125, Sociology 1, or M5.

### The Major

*Required:* Society and Genetics 102, 105A, 105B; 4 units from course 195CE, 196, or 199; and six courses (minimum 24 units) with at least 2 courses (8 units) from society and genetics selected from Ancient Near East 162, CM163, Anthropology 100, 110, 111, 124P, 124Q, 124S, 126Q, 128P, M128Q, M128S, M128T, 131, 143, M145P, 145S, M148, M150, M166Q, Arabic M171, Asian American Studies 113, M117, Chicana/o and Central American Studies CM106, M124, CM182, Communication 101, 112, 116, 126, M127, 148, Computer Science CM121, CM124, Disability Studies 101W, M121, M148, M166, M183, Ecology and Evolutionary Biology 100, 116, 120, 121, C126, 129, 130, C135, M157, 175, 176, English M118F, Environment M125, M133, Environmental Health Sciences 100, C185A, C185B, Epidemiology 100, Food Studies M132, M136, Gender Studies M110C, M114, M121, 125, 134, M154P, M162, M164, M165, M167, 171A, M180B, Geography M125, M131, M142, Global Studies 102, 104, History M108C, M151C, 164D, 179A, 179B, 180A, M180B, 180C, 191B, 191C, C191D, 191E, 191F, 191G,

191I, C191J, C191K, 191L, 191M, C191N, C191O, Honors Collegium M143, M152, 177, M183, Human Genetics CM113, CM124, C144, Lesbian, Gay, Bisexual, Transgender, and Queer Studies M114, Linguistics 110, 114, 127, 130, 132, C135, M146, M150, 170, Medical History M169, Microbiology, Immunology and Molecular Genetics 101, 103AL, C122, CM156, 158, 168, C185A, Molecular, Cell, and Developmental Biology 138, 144, CM156, 165A, 168, 172, Neurobiology M169, Neuroscience 180, Philosophy 124, 125, 129, 130, 137, 150, 153A, 154, C154B, 155A, 155B, C156, 157A, 157B, 170, M187, Physiological Science 111A, 111B, 140, 147, 149, 177, Psychology M107, 110, 112A, 112B, 115, M117A, M117B, M117C, 127A, 129C, M140, M165, Public Health M106, C150, Social Welfare M140, 162, Society and Genetics 108, M113, 120, 121, 130, M132, M133, 134, M136, 141, M142, M143, 146, M157, 160, 161, 162, 163, 164, 165, M166, 174, 175, 180, M183, 188, 195CE, 197, 199, Sociology M115, 130, 132, 134, M136, 138, 143, M144, 145, M148, 154, 156, M162, M164, 170, or Urban Planning M165.

Students may additionally choose course options in the subfocus areas of cell development, microbiology and immunology, molecular biology and genomics, physiology, and psychology and mental health.

### Optional Subfocus Areas

The subfocus options are designed and recommended for students who intend a career in medicine or allied health services or are planning to go on to graduate school in the life or health sciences.

Students may optionally select any subfocus area as part of the required elective courses for the major.

*Cell Development:* Molecular, Cell, and Developmental Biology 138, 165A, 168

*Ecology and Evolutionary Biology:* Three courses from Anthropology 124P, 124S, 126Q, 128P, Ecology and Evolutionary Biology 100, 116, 120, 121, C126, 129, 130, C135, 175, 176

*Microbiology and Immunology:* Microbiology, Immunology, and Molecular Genetics 101, C185A, and one course from 103AL, 106, 107, 158, or 168

*Molecular Biology and Genomics:* Molecular, Cell, and Developmental Biology 144, 172, and one course from CM156, Human Genetics CM124, C144, Microbiology, Immunology, and Molecular Genetics C122, or 158

*Physiology:* Physiological Science 111A, 111B, and one course from 147, 149, or 177

*Population Genetics:* Two courses from Ecology and Evolutionary Biology C135, Human Genetics CM124, Society and Genetics 120, and one course from Ecology and Evolutionary Biology 120, 121, or Human Genetics C144

*Psychology and Mental Health:* Three courses from Psychology M107, 112A, 112B, 115, 127A, 129C

### Honors Program

To receive departmental honors, students must take each course in the major for a letter grade

and complete all upper-division courses in the major with an overall grade-point average of 3.5 or better. For highest departmental honors, students must complete a research project and receive a grade of A or better in Society and Genetics 108, 197, or 199.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade, and students must complete all pre-major courses with a cumulative minimum grade-point average of 2.9.

### The Major

Each course must be taken for a letter grade and passed with a grade of C– or better, and all courses must be completed with a cumulative minimum grade-point average of 2.0.

## Human Biology and Society BS

### Learning Outcomes

The Human Biology and Society major has the following learning outcomes:

- Demonstrated strong foundation of knowledge in social science and evolutionary biology and genetics
- Skills to critically analyze and evaluate qualitative and quantitative data and social biological theories
- Formulation of effective and convincing written and oral arguments that integrate biological and social evidence
- Demonstrated broad comprehension of mathematical, physical, and life sciences as preparation for medical school
- Work well in multidisciplinary teams
- Skills at communicating across disciplines and leveraging knowledge from multiple perspectives
- Demonstrated proficiency in at least one area of concentration at the interface between biology and society
- Integration of ethical, legal, and societal concerns in planning, conducting, and assessing research
- Use of societal and biological information to critically assess complex real-world problems and to employ interdisciplinary skills to help solve them
- Use of societal and biological information to critically assess complex real-world problems and to employ interdisciplinary skills to help solve them

## Entry to the Major

### Admission

Admission to the Human Biology and Society BS major is by application and competitive, using courses, grades, grade-point averages, and personal statements as minimum standards for consideration. Only a limited number of students are admitted each year. Applicants are not automatically accepted into the major.



Students must apply for major standing at the beginning of spring quarter of their sophomore year. Applications submitted after the spring quarter deadline are considered during fall quarter of the junior year only as space in the program permits. No applications are considered after fall quarter of the junior year.

Pre-major standing is not required to apply for the major. A copy of the major application is available on the department [major web page](#).

### Pre-major

Incoming first years may be admitted as pre-majors on acceptance to UCLA. All other students must first complete Society and Genetics 5, M71A, or M72A, and then contact the undergraduate counselor in 3360 Life Sciences to request pre-major standing.

### Transfer Students

Transfer applicants to the Human Biology and Society BS major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of general biology with laboratory for majors, preferably equivalent to Life Sciences 7A, 7B, and 7C, one year of calculus, one year of general chemistry with laboratory for majors, and one semester of organic chemistry with laboratory.

Transfer applicants must also complete at least two of the following introductory courses prior to admission to UCLA: one statistics course, one anthropology human evolution course, and two introductory social sciences or history courses. A second semester of organic chemistry or one year of calculus-based physics is strongly recommended but not required for admission. Society and Genetics 5 must be taken at UCLA once a transfer student is admitted to the University.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* One core course from Society and Genetics 5, M71A, or M72A; and Anthropology 1; Chemistry and Biochemistry 14A or 14AE, 14B or 14BE, 14BL, 14C, 14D (or 20A, 20B, 20L, 30A, 30AL, 30B); Life Sciences 7A, 7B, 7C, 23L; Life Sciences 30A, 30B, and 40 or Statistics 13, or Mathematics 3A, 3B, 3C, and Statistics 10 or 13, or Mathematics 31A or 31AL, 31B, 32A, and Statistics 10 or 13; Physics 1A, 1B, 1C, 4AL, 4BL (or 5A, 5B, 5C); and two social theory courses (minimum 8 units) selected from African American Studies M5, American Indian Studies M10, Anthropology 3, Asian American Studies 20 or 20W, Chicana/o and Central American Studies 10A, 10B, Clusters M1A through 80CW, Gender Studies 10, Geography 3, History 3C, Molecular, Cell, and Developmental Biology 50, 60, Philosophy 4, 6, 8, 22 or 22W, Public Affairs 10, Society and Genetics 125, Sociology 1, or M5.

### The Major

*Required:* Life Sciences 107; Society and Genetics 102, 105A, 105B; 4 units from course

195CE, 196, or 199; and six courses (minimum 24 units) with at least 2 courses (8 units) from society and genetics selected from Ancient Near East 162, CM163, Anthropology 100, 110, 111, 124P, 124Q, 124S, 126Q, 128P, M128Q, M128S, M128T, 131, 143, M145P, 145S, M148, M150, M166Q, Arabic M171, Asian American Studies 113, M117, Chicana/o and Central American Studies CM106, M124, CM182, Communication 101, 112, 116, 126, M127, 148, Computer Science CM121, CM124, Disability Studies 101W, M121, M148, M166, M183, Ecology and Evolutionary Biology 100, 116, 120, 121, C126, 129, 130, C135, M157, 175, 176, English M118F, Environment M125, M133, Environmental Health Sciences 100, C185A, C185B, Epidemiology 100, Food Studies M132, M136, Gender Studies M110C, M114, M121, 125, 134, M154P, M162, M164, M165, M167, 171A, M180B, Geography M125, M131, M142, Global Studies 102, 104, History M108C, M151C, 164D, 179A, 179B, 180A, M180B, 180C, 191B, 191C, C191D, 191E, 191F, 191G, 191I, C191J, C191K, 191L, 191M, C191N, C191O, Honors Collegium M143, M152, 177, M183, Human Genetics CM113, CM124, C144, Lesbian, Gay, Bisexual, Transgender, and Queer Studies M114, Linguistics 110, 114, 127, 130, 132, C135, M146, M150, 170, Medical History M169, Microbiology, Immunology and Molecular Genetics 101, 103AL, C122, CM156, 158, 168, C185A, Molecular, Cell, and Developmental Biology 138, 144, CM156, 165A, 168, 172, Neurobiology M169, Neuroscience 180, Philosophy 124, 125, 129, 130, 137, 150, 153A, 154, C154B, 155A, 155B, C156, 157A, 157B, 170, M187, Physiological Science 111A, 111B, 140, 147, 149, 177, Psychology M107, 110, 112A, 112B, 115, M117A, M117B, M117C, 127A, 129C, M140, M165, Public Health M106, C150, Social Welfare M140, 162, Society and Genetics 108, M113, 120, 121, 130, M132, M133, 134, M136, 141, M142, M143, 146, M157, 160, 161, 162, 163, 164, 165, M166, 174, 175, 180, M183, 188, 195CE, 197, 199, Sociology M115, 130, 132, 134, M136, 138, 143, M144, 145, M148, 154, 156, M162, M164, 170, or Urban Planning M165.

Students may additionally choose course options in the subfocus areas of cell development, microbiology and immunology, molecular biology and genomics, physiology, and psychology and mental health.

### Optional Subfocus Areas

The subfocus options are designed and recommended for students who intend a career in medicine or allied health services or are planning to go on to graduate school in the life or health sciences.

Students may optionally select any subfocus area as part of the required elective courses for the major.

*Cell Development:* Molecular, Cell, and Developmental Biology 138, 165A, 168

*Ecology and Evolutionary Biology:* Three courses from Anthropology 124P, 124S, 126Q, 128P, Ecology and Evolutionary Biology 100, 116, 120, 121, C126, 129, 130, C135, 175, 176

*Microbiology and Immunology:* Microbiology, Immunology, and Molecular Genetics 101,

C185A, and one course from 103AL, 106, 107, 158, or 168

*Molecular Biology and Genomics:* Molecular, Cell, and Developmental Biology 144, 172, and one course from CM156, Human Genetics CM124, C144, Microbiology, Immunology, and Molecular Genetics C122, or 158

*Physiology:* Physiological Science 111A, 111B, and one course from 147, 149, or 177

*Population Genetics:* Two courses from Ecology and Evolutionary Biology C135, Human Genetics CM124, Society and Genetics 120, and one course from Ecology and Evolutionary Biology 120, 121, or Human Genetics C144

*Psychology and Mental Health:* Three courses from Psychology M107, 112A, 112B, 115, 127A, 129C

### Honors Program

To receive departmental honors, students must take each course in the major for a letter grade and complete all upper-division courses in the major with an overall grade-point average of 3.5 or better. For highest departmental honors, students must complete a research project and receive a grade of A or better in Society and Genetics 108, 197, or 199.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade, and students must complete all pre-major courses with a cumulative minimum grade-point average of 2.5.

### The Major

Each course must be taken for a letter grade and passed with a grade of C– or better, and all courses must be completed with a cumulative minimum grade-point average of 2.0.

## Undergraduate Minor

### Society and Genetics Minor

#### Admission

Admission to the Society and Genetics minor is by application and competitive, using courses, grades, grade-point averages, and personal statements as minimum standards for consideration. Applicants must be in their junior year and have an overall grade-point average of 2.5 or better. Only a limited number of students are admitted each year. Applicants are not automatically accepted into the minor.

Students must apply for admission to the minor at the beginning of fall quarter of their junior year. No applications are considered after that.

Information about the application process is available on the [minor website](#) and by consultation with the undergraduate counselor in 3360 Life Sciences.

#### The Minor

*Required Upper-Division Courses (30 to 34 units):* Society and Genetics 101 (or, if Life Sciences 107 has been completed, one course

from the approved list of electives), 102, 191S, and at least four additional upper-division elective courses (minimum 16 units) from the approved list.

The approved list of upper-division elective courses includes Anthropology 111, 124P, 124Q, 124S, 128P, M148, M150, Ecology and Evolutionary Biology 120, 121, 180A, 180B, Gender Studies M114, 134, M162, M180B, Geography M142, History 179B, M180B, 180C, 191I, Honors Collegium M152, Human Genetics C144, Lesbian, Gay, Bisexual, Transgender, and Queer Studies M114, Linguistics M146, Microbiology, Immunology, and Molecular Genetics CM156, Molecular, Cell, and Developmental Biology CM156, Philosophy 153A, C154B, 155A, C156, Physiological Science 140, Psychology M140, Society and Genetics 120, 121, 130, 131, M133, M144, 160, 161, 162, 163, 164, 165, 175, 180, 188, 197, 199, Social Welfare M140, Sociology 143, M162, 170.

## Policies

Students may petition to have a course not on the approved list applied toward the four-course elective requirement. Contact the undergraduate counselor in 3360 Life Sciences.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade of C– or better. Successful completion of the minor is indicated on the transcript and diploma.

# Society and Genetics

## Lower-Division Courses

**5. Integrative Approaches to Human Biology and Society. (5)** Lecture, three hours; discussion, one hour. Introduction to concept of problem-based approaches to study of biology and society and areas of concentration, such as bioethics and public science policy, evolutionary biology, culture, and behavior, historical and social studies of life sciences, medical genetics and public health, and population genetics and history, and central thematic issues shared across concentrations, such as commercialization of life and public understanding of science. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**M71A-M71B-M71CW. Biotechnology and Society. (6-6-6)** (Same as Clusters M71A-M71B-M71CW.) Course M71A is enforced requisite to M71B, which is enforced requisite to M71CW. Limited to first-year freshmen. **M71A-M71B.** Lecture, three hours; discussion, two hours. Exploration of methods, applications, and implications of biotechnology and of ethical, social, and political implications as well as biological underpinnings. P/NP or letter grading. **M71CW.** Special Topics. Seminar, three hours. Enforced requisite: course M71B. Topics include in-depth examination of ethics and human genetics, bioweapons and biodefense, sex and biotechnology. Satisfies Writing II requirement. Letter grading.

**M72A-M72B-M72CW. Sex from Biology to Gendered Society. (6-6-6)** (Same as Communication M72A-M72B-M72CW, Clusters M72A-M72B-M72CW, and Sociology M72A-M72B-M72CW.) Course M72A is enforced requisite to M72B, which is enforced requisite to M72CW. Limited to first-year freshmen. Letter

grading. **M72A-M72B.** Lecture, three hours; discussion, two hours. Examination of many ways in which sex and sexual identity shape and are shaped by biological and social forces, approached from complementary perspectives of anthropology, biology, medicine, and sociology. Specific topics include biological origins of sex differences, intersex, gender identity, gender inequality, homosexuality, sex differences, sex/gender and law, and politics of sex research. **M72CW.** Special Topics. Seminar, three hours. Enforced requisite: course M72B. Topics may include politics of reproduction, sexuality, sexual identity, social construction of gender, and reproductive technologies. Satisfies Writing II requirement.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Genetic Concepts for Human Sciences. (5)** Lecture, three hours; discussion, one hour. Not open for credit to students with credit for Life Sciences 4. Focused treatment of selected complex genetic concepts from molecular biology, population and quantitative genetics, and evolutionary biology, with emphasis on gene-environment interaction at various levels and culminating in exploration of notion of co-evolution of genetics and society. Basic science concepts presented through real-world issues and research problems. Current research on cancer, immune system and development, and how this research is performed and adds to knowledge. Letter grading.

**102. Societal and Medical Issues in Human Genetics. (5)** Lecture, three hours; discussion, two hours. Sequence of entire human genome is now known. Consideration of how this knowledge impacts concepts of ourselves as individuals and of our place in biological universe, concepts of race/ethnicity and gender, ability of DNA-based forensics to identify specific individuals, ownership and commodification of genes, issues of privacy and confidentiality, issues of genetic discrimination, issues of predictive genetic testing. Discussion of human cloning for reproductive and therapeutic purposes. Exposure to medical genetics cases. Discussion of role of whole genome sequencing in clinical setting. Human Genome Project influence on medicine and on our concepts of self and identity. Letter grading.

**105A. Ways of Knowing in Life and Human Sciences. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 5 or M71A or M72A. Course 105A is not requisite to 105B. Introduction to study of epistemology to train students to recognize different ways of knowing what we know. In life and human sciences, instruments and methods are used to study, measure, and experiment. Exploration of how they are manifest in technologies that cut across disciplines to help students evaluate explanatory models, standards of proof, and qualitative versus quantitative studies. Explorations may include DNA sequencing, tissue cultures, bioinformatics, statistics, photography and cinema, charts, trees, and databases. DNA se-

quencing is used to study gene functions, evolutionary patterns, and disease and plays role in legal context to reconstruct aspects of human history or to trace identity of people. Databases play role in life sciences in administrative, commercial, and legal contexts. Photography is used in sciences and medicine (e.g., X-ray photography), as well as in art and forensics. Letter grading.

**105B. Problems of Identity at Biology/Society Interface. (4)** Lecture, three hours; discussion, one hour. Requisites: course 101 or Anthropology 1, or Life Sciences 4 and 23L, or 7C (each may be taken concurrently). Course 105A is not requisite to 105B. Exploration of problems of human identity that are inherently biological and social. Topics vary and may include race, obesity and nutrition, autism, deafness or disability, gender, intelligence, or sexuality. Topics contain set of intertwined problems so complex, so difficult to define, and so wrapped up in conceptions of what it is to be human, that it has spawned research from variety of perspectives in biological and human sciences. Students critically engage various intellectual perspectives—some competing, some complementary—that intersect on one particular topic. Examination of how researchers from social/historical and biological sciences construct topic as intellectual problem, methods they bring to bear on it, and findings they have produced. Letter grading.

**108. Human Biology, Genetics, and Society. (5)** Lecture, three hours; laboratory, two hours. Limited to senior Human Biology and Society majors. Lectures, readings, discussions, and development of collaborative culminating project. Group-based research projects in mapping and staging contemporary controversy at intersections of human biology, genetics, and society. Reading of large amounts of material to make sense of both scientific concepts and social and political issues, with original research project and presentation required. Letter grading.

**M110D. Posthumans. (4)** (Same as African American Studies CM110D.) Seminar, three hours. Denaturalization of concept of human and with it uniquely western philosophical commitments that sustain imagined boundaries between human and non-human, modern and pre-modern, male and female, abled and disabled, chosen and condemned, indigenous and European, African and whiteness, religious and secular. Exploration of formation of human throughout long course of Euro-American intellectual history and its contemporary posthuman formations. Study is informed by range of theoretical work that covers meaning of modernity, liberalism, inter-species relationships, critical race theory, conceptual problems in evolutionary biology, and public health. P/NP or letter grading.

**M113. Ethical, Legal, and Societal Topics in Genetic Counseling. (2)** (Same as Human Genetics CM113.) Lecture, two hours. Discussion of social, cultural, ethical, and legal issues in genetics and genetic counseling. Letter grading.

**120. Genetics and Human History. (4)** Lecture, three hours. Requisite: course 101 or Life Sciences 107. Advancements in genomic research have rapidly transformed traditional archaeological and historical investigations of human past. Drawing from recent research, focus on how genomic analysis has shed new light on old debates such as migration of *Homo sapiens* out of Africa, human interbreeding with Neanderthals, first migration to North America, ethnic expansions throughout Europe, and genetic legacy of historical figures such as Thomas Jefferson and Genghis Khan. Discussion of practical and theoretical issues surrounding genetic research on history of humans, including challenges of using ancient and modern DNA, population genetic theory, and ethical implications of genetic research for understanding ethnicity. Letter grading.

**121. Race, Science, and Citizenship. (4)** Seminar, three hours. Early development of scientific method and systematic exclusion of those in subordinate social groups from scientific practice. Interrogation of binaries that prop up scientific knowledge construction, and consideration of how norms and values embedded in Western science compare with indigenous or local knowledge systems. How medical research is

motivated by competing assumptions of racial hierarchy and equality. Examination of governments' use of science to classify racially inferior and contaminated foreigners as threats to social order. Exploration of how people use knowledge about their embodied experiences to demand rights and accept responsibility for their own health and vitality, either in opposition to or alliance with scientific experts. How contemporary developments in science and technology bring to light some central concerns of social and political theory. Letter grading.

**125. Critical Study of Health, Sickness, and Healing in Global Perspective.** (4) (Formerly numbered 85.) Lecture, three hours; discussion, one hour. Introduction to sociocultural, historical, and global study of health and sickness. Use of case studies of globally important infectious and chronic diseases (diabetes, Ebola, HIV/AIDS) to analyze factors, including key dimensions of diversity (class, gender, urban/rural development) that influence how populations variably encounter, experience, understand, and cope with sickness. Special focus on relationships between Western medicine and traditional and alternative approaches to healing. Letter grading.

**M126. Genes, Disease, and Culture.** (4) (Same as Anthropology M126N.) Lecture, three hours; discussion, one hour (when scheduled). Introduction to genes, disease, and culture. Introduction to basic concepts in human genetics, expanding upon evolutionary genetic concepts learned in Anthropology 1, and survey of both inherited and infectious disease on global level. Wide range of topics include gene-culture co-evolution, niche construction theory, cultural perceptions of disease, cultural selection, biological and environmental determinism, and evolutionary origins of disease. Course is broken down into genes and genomes, Mendelian disease, complex disease, and infectious disease. Discussion of selected readings that integrate cultural perceptions with biological/genetic phenomena. P/NP or letter grading.

**130. Biotechnology and Society.** (4) Lecture, three hours. Technical manipulation of living matter from humans, animals, and plants as scientific and social undertaking. How biotechnology came into existence. Questions, controversies, and changes that come with ability to make living technologies. Rise of engineering ideal in American biology. Biological modernism, ideas of immortality and technical suppression of death, molecularization of life, genetic engineering, food biotechnology, and control of reproduction. Practice and perception of living bodies as factories and machines. Changing economic and legal infrastructure of biological invention. Unfolding of contemporary social controversies concerning biotechnology. Letter grading.

**131. Social and Historical Study of Information, Software, and Networks.** (4) Lecture, three hours. Introduction to critical study of information technology, software, and networks. Thematic focus on history of software, operating systems and networks, free/open source software, standards, intellectual property, and telecommunications regulation. Theoretical focus on publics and public spheres, network theories, and theories of information society. Particular attention to relationship of information technology to scientific and engineering practices and life sciences. Letter grading.

**M132. Food Cultures and Food Politics.** (5) (Same as English M118F and Food Studies M132.) Lecture, four hours; discussion, one hour (when scheduled). Requisite: English Composition 3. Introduction to interdisciplinary field of food studies, with focus on how literature, art, science writing, and visual culture address political dimensions of food and agriculture in specific contexts. P/NP or letter grading.

**M133. Environmental Sociology.** (4) (Same as Environment M133 and Sociology M115.) Lecture, three hours; discussion, one hour. Relationship between society and environment. Analysis in detail of interrelations between social factors (such as class, race, gender, and religion) and environmental factors (such as pollution, waste disposal, sustainability, and global warming). P/NP or letter grading.

**134. Food and Health in Global Perspective.** (4) Lecture, three hours. Study problematizes and adds depth to common-sense understandings of healthy

and unhealthy consumption by examination of relationship between food and health, from critical and holistic perspective, that accounts for interplay of biology and culture within broader historical, societal, and global contexts. Topics include what is meant by health, especially in terms of diet; relationship between food practices and evolutionary biology, as well as particular environments of societies, cultural systems, histories, and their health implications; how major global foods have come to their dominance and consequences for health; and influences of food production, distribution, and preparation on health. Letter grading.

**M136. Eating Society: Science and Politics of Food from Individual to Planetary Health.** (4) (Same as Food Studies M136 and Sociology M136.) Lecture, three hours; discussion, one hour. Questions of food and health are both individual and social. Students gain tools for understanding relationships between individual eaters, medicine, and social organization of food production and processing through set of research frameworks newly emergent in range of social and health sciences. Topics include individual and social ramifications of microbiome science; understanding how human gut microbes and health are shaped by pasteurization, processing, and food safety practices; One Health approaches that encompass human and animal health, discussing examples such as antibiotic resistance and emerging infectious disease as effects of large-scale agriculture; planetary health frameworks that link individual human metabolic health to issues of sustainable agriculture, for example how pesticides and fertilizers tie diets to environments; and resilience of cultural food systems in face of environmental pollution as issue of reproductive health. Letter grading.

**141. Nature versus Nurture: Genes and Environment.** (4) Seminar, three hours. Comprehensive and practical examination of emerging science of gene-environment interaction. Discussion of primary components of field, including role of metabolic pathways in modifying environmental responses and importance of environmental influences in human disease. Exploration of selected hot topics in field such as importance of epigenetics and of microbiome. Course is highly useful for further study in medical field or public health. Letter grading.

**M142. Primate Genetics, Ecology, and Conservation.** (4) (Same as Anthropology M128S.) Seminar, three hours. Focus on genetic research on wild primates at different geographic scales, using readings from primary literature on primate genetics, ecology, and behavior. Study of paternity and kinship, intrapopulation variation, population genetics, biogeography, systematics, phylogenetics/phylogenomics and comparative genomics. Utility and appropriateness of various markers considered for different research questions, e.g., mitochondrial DNA, microsatellites, nuclear genes, Y-chromosome, as well as GWAS and genomic/next generation sequencing platforms, and epigenetic markers. Discussion of methods in fieldwork and lab work, including sampling techniques, collection techniques, wet lab techniques, software analysis packages, and statistical analyses. Introductory-level understanding of genetics expected; study further illuminates areas in molecular biology relevant to case studies analyzed. Letter grading.

**M143. Amazon in Anthropocene.** (4) (Same as Anthropology M128T.) Seminar, three hours. Consideration of major issues faced in Amazon region today using lenses of biology, geography, biological anthropology, primatology, cultural anthropology/ethnography, history, comparative literature, film studies, political science, and environmental science. Analysis of Amazon paleogeography and ecology over time to highlight charismatic species, biodiversity, and habitat types. Focus on human migration into Amazon, diversity of indigenous groups today, and historic/present interactions with environment. Study of European expeditions that carved out political boundaries within Amazon. Study of historic/current effects of human economy and land use on ecology. Exploration of changing power dynamics, inequity, and (un)sustainability of different cultural practices and technologies. Topics include rubber boom, indigenous resistance to oil exploration, hydroelectric dams and clean energy,

deforestation arc, and international land grabs for soy plantations. Highlights value of different kinds of knowledge and expertise for interdisciplinary solutions for current crises in Amazon. Letter grading.

**M144. Stress and Society: Biology and Inequality.** (4) (Same as Sociology M144.) Lecture, three hours; discussion, one hour. Integrative view of health disparities, one of most pressing problems of society, through investigation of effects of socioeconomic status (SES) on health and disease, using specific lens of stress biology. Topics include introduction to fundamentals of physiology of stress, integration of literature on poverty and SES with studies on physiological consequences of poverty, and introduction of concepts of life course by following stress biology through childhood development and into adulthood. Letter grading.

**146. Evolution in Anthropocene.** (4) Lecture, three hours; discussion, one hour. Recommended requisites: Life Sciences 7A, 7B, 7C. Study of evolution across world and tree of life that is being altered at incredible pace by humans. Exploration of incredible stories of surprising, amazing, sometimes heart-breaking ways humans are changing life, and how these things alter human culture, fashion trends, and history. Exploration of footprint that humans are leaving on other species, and astounding ways they have altered their evolutionary course to keep pace. Letter grading.

**M157. Biology of Superheroes: Exploring Limits of Form and Function.** (4) (Same as Ecology and Evolutionary Biology M157.) Lecture, four hours; discussion, one hour. Requisites: Life Sciences 1 and 4, or 7A and 7B. Combines topics posed in popular graphic novels, movies, and television with primary scientific literature to explore bizarre phenomena in natural world and delve into basic scientific theory and principles. Topics covered include evolution, genetics, physiology, biomechanics, brain-machine interfacing, and artificial intelligence among others. Students synthesize primary literature on diverse subjects presented. Letter grading.

**160. Politics of Heredity.** (4) Seminar, three hours. Exploration of intersection of politics and genetics in liberal democracies and totalitarian regimes. How genetics has been used to consolidate and undermine political authority, and how political authority has been employed to both promote and restrict genetics. Consideration of several historical episodes such as rise to power in Soviet Union of T.D. Lysenko, peasant agronomist who rejected Mendelism in favor of quasi-Lamarckian approach to genetics; participation of geneticists in creation of racial state in Nazi Germany; and debates over compulsory sterilization of mental defectives in U.S., Canada, and Europe from 1920s to 1940s. Contemporary cases such as controversies over genetically modified foods and regulation and governance of reproductively technologies, and rise of disease advocacy groups as important players in determining funding and direction of genetic research. Letter grading.

**161. Controversy and Behavior Genetics.** (4) Seminar, three hours. Behavior genetics is controversial and seeks genetic links to intelligence, personality, mental illness, and criminality, among many other traits. It explores differences between individuals, men and women, or racial groups, and what social policies might do about those differences. Analysis of causes and effects of controversy in behavior genetics using critical sociology and history. Consideration of scientific disputes between behavior geneticists and their critics, distinctive history and social organization of behavior genetics as group of scientists, and public reception of behavior genetics and disputes about its social and policy implications. Letter grading.

**162. Biotechnologies, Law, and Body.** (4) Seminar, three hours. Notions of bodily integrity, privacy, right to life, and to choose to die have created perception that our bodies are protected by law, that somehow we possess ownership and control over our bodies, encompassing not only our physical being but intangible information contained within our materialized forms. Question of whether these rights to our own bodies exist and are secured by common and Constitutional law, in light of recent developments in biotechnology.

Introduction to political and legal discourse of rights. Historical perspective of how law and policy have treated our bodies. Legal and policy issues emerging from new biotechnological developments. Examination of reproductive issues, including abortion, assisted reproduction, disputes regarding disposition of embryos, preimplantation genetic testing, cloning, and genetic enhancements. Letter grading.

**163. Science and Popular Movements: Controversy, Conflict, and Collaboration.** (4) Seminar, three hours. Historical and philosophical analysis of myth of separation of science and people. Controversies in genetics and biotechnology, medical research, and environmentalism show examples of popular science where scientists and nonscientists interact in surprising ways: when nonscientists challenge scientists' authority and knowledge, where scientists act like social movement, and where scientists and regular people work together, sometimes cooperatively and sometimes competitively, to generate knowledge. Consideration of some implications and contradictions for politics and knowledge production that emerge from popular science. Letter grading.

**164. Ethics in Health and Research.** (4) Lecture, three hours. Recommended requisite: course 102. How should life-saving organs be allocated in context of scarcity? What happens when doctor disagrees with patient on best treatment? Should researchers be allowed to experiment on human beings? Although medicine has always been faced with life-or-death decisions, new challenges arise in light of dramatic advances of biomedicine in 21st century. New possibilities for cures come with new moral issues. Biomedical research is full of promises, yet faces many ethical difficulties. Examination of complexity of decision making in bioethics by articulating point of views of all actors engaged in those decisions at local and international levels—doctors, nurses, patients, families, health policymakers, researchers, and citizens. Focus on case studies with reliance on philosophical essays and material from contemporary media. Letter grading.

**165. Introduction to Bioethics.** (4) Lecture, three hours. Should one be allowed to choose sex of babies or whether they will be tall enough to be next basketball star? Should terminally ill be helped to die? Do human embryos have moral status? Examples of ethical questions that arise in light of dramatic advances of biomedicine in 21st century. While new knowledge and biotechnology give rise to great possibilities for improving care and finding cures, they also create new moral dilemmas and challenge us to redefine what is good life or family. Introduction to field of bioethics, with focus on case studies that rely on contemporary essays in philosophy and material from contemporary media. Letter grading.

**M166. Health-Care Ethics.** (4) Same as Disability Studies M166.) Lecture, three hours; discussion, one hour. Consideration of critical ethical concepts as they apply to health-care practice, medical decision-making, and medical technology development and use. Consideration of concepts drawn from philosophy, literature and culture, and political history including freedom, equality, justice, vitality, knowledge, kinship, mercy, illness, and disability. Examination of how concept of human dignity should shape health-care decisions such as physician-aided dying or selective abortion; proper relationship between history and concept of human rights and distribution of medical resources; how political and ethical category equality should structure development and use of genetic editing; how health-care concept of patient autonomy relates to political concept of liberty or freedom; how to evaluate good life, or what philosophers call flourishing, in medical treatment decisions for individuals or development of therapies. P/NP or letter grading.

**174. What's Wrong with Science?** (4) Lecture, three hours; discussion, one hour. Recommended requisite: course 105A. Exploration of tangled issues linking science to contemporary post truth crisis. Drawing on ideas and frameworks from sociology, philosophy, anthropology, political psychology, and science and technology studies, consideration of range of materials including theoretical and empirical academic

texts as well as commentaries and documents speaking to current events. Consideration of demarcation of science from pseudoscience, conditions turning scientific disagreement into public controversy, science's relationship to different publics and political cultures, crises of trust in contemporary science and efforts to reconstruct scientific integrity, and weaponization of science and pseudoscience in misinformation campaigns and conspiracy theories. Through engaging these complex matters, students become better armed to understand and advance productive relationships between science and political life. Letter grading.

**175. Current Directions in Social and Historical Study of Science.** (4) Seminar, three hours. Preparation: some familiarity with field of science and technology studies. Investigation of recent work in history and social study of science and technology, with special emphasis on recent developments, possible future directions, and questions of disciplinary and interdisciplinary. Topics may include histories of recent and emerging science; biocapital, biocitizenship, biosecurity, and/or biopolitics; social and historical approaches to finance and money; and social and historical approaches to risk, preparedness, and safety. Letter grading.

**180. Special Courses in Society and Genetics.** (4) Lecture, three hours. Departmentally sponsored experimental or temporary courses on selected topics, such as those taught by visiting faculty members. May be repeated for credit with topic change. Letter grading.

**M183. Being Human: Identity and Mental Illness.** (5) (Same as Disability Studies M183 and Honors Collegium M183.) Seminar, three hours. Exploration of relationship between identity and mental illness through different approaches to nature and treatment of mental disorder, from biomedical accounts of brain-based pathology (and identity) to Mad Pride movement emphasis on mental diversity. Enduring philosophical questions regarding personal identity, consciousness, selfhood and mind-body relationship are investigated through consideration of conditions such as dissociative identity disorder, trauma, psychosis, autism, and depression. P/NP or letter grading.

**188. Special Courses in Society and Genetics.** (4) Seminar, three hours. Departmentally sponsored experimental or temporary courses on selected topics, such as those taught by visiting faculty members. May be repeated for credit with topic change. Letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**190. Research Colloquia in Society and Genetics.** (1) Seminar, one hour. Limited to juniors/seniors. Designed to bring together advanced undergraduate students undertaking faculty-supervised tutorial research to discuss their own work or related work in society and genetics. May be repeated once for credit with topic change. P/NP grading.

**191. Variable Topics Research Seminars: Perspectives in Society and Genetics.** (5) Seminar, three hours. Enforced requisites: courses 101 (or Life Sciences 4), M102. Discussion of genetics and society from historical perspective. How science of genetics itself is deeply social. Study of how biologists and anthropologists have conceptualized relations of genes and (social) environment. Reading of accounts of human nature, human flourishing, and dignity that seem to privilege nature as something that can guide ethical thought and action. How these accounts would encourage or discourage people from manipulating their genetic inheritance. Consideration of what is new in new genetics. Current discussions of promise and peril of genetics in relation to society. Culminating paper required. May be repeated once for credit with topic change. Letter grading.

**191R. Capstone Seminar: Human Biology and Society.** (5) Seminar, three hours. Enforced requisites: courses 105A, 105B. Students bring their accumulated interdisciplinary knowledge and methodological tools to bear on one contemporary problem at intersection of biology and society. Student peers, whose major studies fall within different concentrations, share and learn from each others' multiple perspectives while working together on one topic presented in class. Topics vary and come from major concentrations. Culminating project is team writing assignment, such as grant proposal, report to Congress on contemporary issue, or business plan for new kind of company or nonprofit firm addressing issues in human biology and society. Letter grading.

**191S. Capstone Seminar: Society and Genetics.** (5) Seminar, three hours. Enforced requisites: courses 101 (or Life Sciences 4), M102. Discussion of genetics and society from historical perspective. How science of genetics itself is deeply social. Study of how biologists and anthropologists have conceptualized relations of genes and (social) environment. Reading of accounts of human nature, human flourishing, and dignity that seem to privilege nature as something that can guide ethical thought and action. How these accounts would encourage or discourage people from manipulating their genetic inheritance. Consideration of what is new in new genetics. Current discussions of promise and peril of genetics in relation to society. Culminating paper required. May be repeated once for credit with topic change. Letter grading.

**193. Journal Club Seminars: Society and Genetics.** (1) Seminar, one hour. Limited to undergraduate students. Discussion of topics related to guest speaker series. May be repeated for credit. P/NP grading.

**195CE. Community or Corporate Internships in Society and Genetics.** (4) Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Learning. Individual contract with supervising faculty member required. Letter grading.



**196. Research Apprenticeship in Society and Genetics. (2)** Tutorial, six hours. Limited to juniors/seniors. Entry-level research opportunities in society and genetics under guidance of faculty mentor. May be repeated for maximum of 4 units. Individual contract required. P/NP or letter grading.

**197. Individual Studies in Society and Genetics. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned readings and tangible evidence of mastery of subject matter (paper or other product) required. May be repeated for credit. Individual contract required. Letter grading.

**199. Directed Research in Society and Genetics. (2 to 4)** Tutorial, six to 12 hours. Preparation: submission of written proposal outlining study or research to be undertaken due to undergraduate adviser for department approval. Studies to involve laboratory research, not primarily literature surveys or library research. Proposal to be developed in consultation with instructor. Limited to juniors/seniors. Department majors may enroll with sponsorship from department faculty members or preapproved outside faculty members. Other juniors/seniors may enroll only with department faculty sponsors. Supervised individual research under guidance of faculty mentor. At end of term culminating paper describing progress of project and signed by student and instructor must be presented to department. May be repeated for credit. Individual contract required. Letter grading.

## Graduate Course

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

## SOCIOLOGY

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Abigail C. Saguy, PhD, *Chair*

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Rogers Brubaker, PhD (*UCLA Foundation Professor*)  
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Roger Waldinger, PhD  
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Phillip Bonacich, PhD  
Duane W. Champagne, PhD  
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## Overview

Sociology is the study of the organization, dynamics, and consequences of social life. The scope of the discipline is as broad and diverse as social life itself. Sociologists study social interaction and relationships, organizations and institutions, communities and whole societies. The methods of sociological investigation are also varied: sociologists immerse themselves in the daily life of groups, interview group participants, examine recorded interaction, interpret historical documents, engage in quantitative analysis of data, and conduct large surveys. The methods and concepts of sociology yield powerful insights into the social processes shaping lives, problems, and possibilities in contemporary society. The ability to identify and understand these processes—a capacity that C.W. Mills called the “sociological imagination”—is valuable preparation for personal and professional participation in a changing and complex world.

The Department of Sociology faculty includes internationally renowned scholars who address topics ranging in scope from the organization of face-to-face interaction to the consequences of globalization. The department boasts outstanding teachers—six of whom have won Distinguished Teaching Awards—and excellently trained teaching assistants, many of whom have also won awards. The select honors program has a record for training students in the fundamentals of research and generating honors theses of substantial accomplishment.

## Career Prospects

In addition to contributing to a liberal arts education, the Sociology major prepares individuals for a broad range of career options and graduate and professional studies. The analytic perspectives and skills gained in the major are a foundation for careers in business, data science, education, law, public health, and social welfare. The major also supplies a foundation for students intending to pursue graduate work in sociology and related fields. Employment opportunities available to the graduate with a Bachelor of Arts (BA) degree in Sociology also include work in community service organizations and health agencies, government service, and human resources.

The Doctor of Philosophy (PhD) in Sociology usually leads to a career in research and/or teaching. Although most sociologists are employed by universities, there are increasing ca-

reer opportunities in government, technology, and nonuniversity research centers.

## Undergraduate Major

### Sociology BA

#### Learning Outcomes

The Sociology major has the following learning outcomes:

- Critical evaluation of social and political arguments using empirical data
- Effective and convincing formulation of written and oral arguments that integrate sociological evidence
- Demonstrated understanding of the difference between an individual-level and collective-level explanation of behavior
- Demonstrated understanding of the major sociological methods, including interviewing, ethnography, conversation analysis, content analysis, survey design, and statistical analysis, the types of questions they can be used to answer, and their limitations
- Demonstrated familiarity with several major classical contemporary sociological theoretical perspectives and how they can be used to analyze contemporary or historical events or phenomena
- Understanding of some ways in which biographies are shaped by institutions, patterns of social inequality, or cultural practice

#### Entry to the Major

##### Pre-major

Only students with fewer than 90 units completed (excluding Advanced Placement units/credit) may declare the Sociology pre-major once they complete either Sociology 1 or 20 with a grade of C or better.

##### First-Year Students

Students must petition to declare the Sociology major. If Sociology 101 or 102 has already been completed, a grade of C or better is required. Grades in any other completed sociology courses for the major must be C– or better.

##### Transfer Students

Transfer applicants to the Sociology pre-major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one introduction to sociology course and one statistics course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

#### Requirements

##### Preparation for the Major

*Required:* Sociology 1, 20, and one course from Political Science 6, Statistics 10, or 13.

##### The Major

*Required:* Eleven upper-division courses, including (1) two theory courses—Sociology 101, 102; (2) one methods course from Sociology 106A, 106B, 110, 111, 112, 113, CM124A,

191H, or Statistics 112; (3) one course from each of the following core areas: (a) *interactions*—Sociology 111, CM124A, CM125, 126, 130, 132, 133, 134, 140, or 152, (b) *institutions and social processes*—Sociology 116, 121, M139, 140, 143, 151, 158, 172, 173, M174, M175, M176, or 181B, (c) *power and inequality*—Sociology M115, 122, 123, M139, 147A, M155, 156, 157, M161, M162, M164, M165, 181A, 182, 183, 185, or 186; and (4) any five upper-division sociology elective courses.

##### Honors Program

The honors program in sociology provides opportunity for outstanding students to undertake an independent year-long research project under the guidance of a faculty member. Students who successfully complete the honors program graduate with departmental honors.

After acceptance into the honors program, students are required to take courses 191H, 198A, 198B, and 198C (honors thesis seminars) which may be applied as electives toward the major requirements.

##### Computing Specialization

Majors in Sociology may select a specialization in Computing by (1) satisfying all the requirements for a bachelor's degree in the major, (2) completing Program in Computing 10A, 10B, 10C, and (3) completing Sociology 111, 113. Each course must be taken for a letter grade. Students graduate with a bachelor's degree in sociology and a specialization in Computing.

#### Policies

##### Preparation for the Major

A minimum grade of C is required in each preparation for the major course. Students with a grade-point average less than 2.0 in the preparation coursework are not eligible for admission to the major. Students who repeat any preparation course more than once are automatically denied admission to the major.

##### The Major

Students should complete course 101 and the core courses before taking other upper-division courses.

Each course for the major must be taken for a letter grade. To graduate, students must have at least a 2.0 grade-point average in their upper-division major courses, with grades of C or better in Sociology 101 and 102.

Only 8 units of Sociology 199 are allowed. The two theory courses, three core area courses, one methods course, and one sociology elective (seven courses total) must be taken while in residence in the College of Letters and Science at UCLA.

##### Honors Program

As preparation for the honors program, students must complete all preparation for the major courses.

Students must have a 3.5 overall grade-point average, have completed the sociology preparation requirements and, in most cases, have completed the required theory course. Applica-

tions are available from the undergraduate adviser's office, 254E Haines Hall.

## Graduate Major

### Sociology MA, CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Sociology

### Lower-Division Courses

**1. Introductory Sociology. (5)** Lecture, four hours; discussion, one hour. Survey of characteristics of social life, processes of social interaction, and tools of sociological investigation. P/NP or letter grading.

**M5. Social Organization of Black Communities. (5)** (Same as African American Studies M5.) Lecture, four hours; discussion, one hour; field trips. Analysis and interpretation of social organization of black communities, with focus on origins and development of black communities, competing theories and research findings, defining characteristics and contemporary issues. Letter grading.

**10. Social Thought and Origins of Sociology. (5)** Lecture, three hours; discussion, two hours. Introduction to history of social thought, with special emphasis on theoretical precursors to development of discipline of sociology. Exposition and analysis of selected social theorists and concepts, especially from the 17th to 19th centuries. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to Sociological Research Methods. (5)** Lecture, three hours; discussion, one hour. Introduction to methods used in contemporary sociological research, with focus on issues of research design, data collection, and analysis of data. Fieldwork may be required. Letter grading.

**40. American Racism: Psychosocial Analysis. (5)** Lecture, four hours; discussion, one hour. Examination of long-standing history of American racism, beginning with institution of slavery, Jim Crow legislation, separate but equal doctrine, Brown versus Board of Education, Civil Rights legislation of 1960s, and Obama presidency. Focus on persistence over time of racist beliefs and mechanisms through which racism becomes passed on from one generation to next. Racism toward African Americans and harms it has inflicted on African American community, as well as on nation as whole. Examination of psychology and sociology of racism through video clips, social scientific texts, essays by prominent American humanists, and American literature that deals centrally with racism. P/NP or letter grading.

**51. Sociology of Migration. (5)** Lecture, three hours; discussion, one hour. Introduction to fundamental theories, themes, and research methods used in sociological research through comparative study of international migration. Examination of theoretical debates and empirical analysis of causes and consequences of transnational migration in countries of origin and destination, with focus on issues of race, ethnicity, social networks, development, citizenship, and state in comparative context. Letter grading.

**M72A-M72B-M72CW. Sex from Biology to Gendered Society. (6-6-6)** (Same as Communication M72A-M72B-M72CW, Clusters M72A-M72B-M72CW, and Society and Genetics M72A-M72B-M72CW.) Course M72A is enforced requisite to M72B, which is enforced requisite to M72CW. Limited to first-year freshmen. Letter grading. **M72A-M72B.** Lecture, three hours; discussion, two hours. Examination of many ways in which sex and sexual identity shape and are shaped by biological and social forces, approached from complementary perspectives of anthropology, biology, medicine, and sociology. Specific topics include biological origins of sex differences, intersex, gender identity, gender inequality, homosexuality, sex differences, sex/gender and law, and politics of sex research. **M72CW.** Special Topics. Seminar, three hours. Enforced requisite: course M72B. Topics may include politics of reproduction, sexuality, sexual identity, social construction of gender, and reproductive technologies. Satisfies Writing II requirement.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics Research Seminars: Sociology. (4)** Seminar, three hours. Requisite: course 1. Designed for freshman/sophomores. Study of selected topics in sociology at introductory level. May be repeated for credit. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Development of Sociological Theory. (5)** Lecture, three hours; discussion, one hour. Comparative survey of basic concepts and theories in sociology from 1850 to 1920. P/NP or letter grading.

**102. Contemporary Sociological Theory. (5)** Lecture, three hours; discussion, one hour. Requisite: course 101. Critical examination of significant theoretical formulations from 1920 to present. P/NP or letter grading.

**106A. Field Research Methods I. (6)** Lecture, two hours; discussion, two hours; fieldwork, eight to 10 hours. Research practicum in which students write field notes on their experiences in and observations of intensive internship field placement. Readings focus on fieldwork roles and relations, observing and describing, writing field notes, field interviewing, ethical issues, and preliminary data analysis. Fieldwork and extensive field notes required. Letter grading.

**106B. Field Research Methods II. (6)** Lecture, two hours; discussion, two hours; fieldwork, 10 hours. Requisite: course 106A. Collection and analysis of both field notes and unstructured interview data from student field placement. Use of techniques of qualitative data analysis, including qualitative coding, analytic memoing, and grounded theory methods, to analyze these materials and to write ethnographic paper. Letter grading.

**110. Comparative and Historical Methods. (4)** Lecture, three hours; discussion, one hour. Recommended requisite: course 101. Introduction to range of comparative and historical methods alongside broader questions and issues in this area of sociology.

Students learn about using theories to analyze real-world cases; making comparisons between societies and other social units; developing sociological explanations for historical events; and generalizing about social patterns and changes over time. P/NP or letter grading.

**111. Social Networks. (4)** Lecture, three hours; laboratory, one hour. Analysis of how social networks create social structure, how social actors utilize them, and their unexpected effects. Topics include job search, firm efficiency, and social movements. Visualization programs, computer simulations, and research project. P/NP or letter grading.

**112. Introduction to Mathematical Sociology. (4)** Lecture, three hours; laboratory, one hour. Requisites: Mathematics 2, 3A (course whose content includes introductions to probability theory, matrix algebra, and differential and integral calculus), Statistics 10. Mathematical treatment of several sociological phenomena, such as occupational mobility, population growth, organizational structure, and friendship patterns, each covered in some detail, including initial development and subsequent evaluation and modification (emphasizing both deductive and computational aspects of mathematics). Letter grading.

**113. Statistical and Computer Methods for Social Research. (4)** Lecture, three hours; laboratory, one hour. Requisite: Statistics 10. Continuation of Statistics 10, covering more advanced statistical techniques such as multiple regression, analysis of variance, or factor analysis. Content varies. Students learn how to use computer and write papers analyzing prepared data sets. P/NP or letter grading.

**114. Social Data Science. (4)** Lecture, three hours; discussion, one hour. Data analysis, and way social theory and data are linked. Covers data and computing environment, regression analysis, causal analysis, and machine learning. Offers tools for conducting quantitative analyses of social phenomenon, including emerging computational methods. Integrates substance and method. Draws on literature in social inequality to demonstrate applications of studied methods. P/NP or letter grading.

**M115. Environmental Sociology. (4)** (Same as Environment M133 and Society and Genetics M133.) Lecture, three hours; discussion, one hour. Relationship between society and environment. Analysis in detail of interrelations between social factors (such as class, race, gender, and religion) and environmental factors (such as pollution, waste disposal, sustainability, and global warming). P/NP or letter grading.

**116. Social Demography. (4)** Lecture, three hours; discussion, one hour. Studies of past, present, and future trends in population growth. Sociological theories of causes and consequences of population growth and redistribution. Emphasis on correlates of fertility, mortality, and migration. P/NP or letter grading.

**117. Family Demography. (4)** Lecture, three hours; discussion, one hour. Examination of demographic behaviors, such as marriage, divorce, and child-bearing, associated with family and household organization. Sociological approach to understanding causes and consequences of trends and differentials in family formation and dissolution. P/NP or letter grading.

**M118. Simulating Society: Exploring Artificial Communities. (5)** (Same as Honors Collegium M148.) Seminar, three hours; computer laboratory, one hour. Examination of social behavior through computer simulations of behavior in artificial communities. P/NP or letter grading.

**119. Primate Societies. (4)** Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Selected topics on diverse behaviors and cultural forms of primate cousins, with special focus on baboons, chimpanzees, and gorillas. Examination of primate sociology, sexual competition, demography and kinship, politics, communication, and interactions within and between groups. Implications for our lives as human primates. P/NP or letter grading.

**M120. Disability Rights Law. (4)** (Same as Disability Studies M149.) Lecture, four hours. Examination of disability-related issues impacting people of all ages across wide spectrum of settings in both public and

private sectors—from preschool to higher education, from military to workplace, and from intensely urban environments to online and virtual worlds. Topics range from persistent and recurring disputes to novel controversies fueled by new technologies and changing times. P/NP or letter grading.

**121. Sociology of Religion. (4)** Lecture, three hours; discussion, one hour. Examination of classic and contemporary work in social scientific study of religion. Analysis of definition of religion, role of religion in modern life, and role of categories like Islam in contemporary U.S. politics. Focus on complicated question of what it means to say someone or something is religious: does that mean they are moral, believe in God, or are part of community of believers? Students gain better sense of how to think and talk about religion. P/NP or letter grading.

**122. Sociology of Violence. (4)** Lecture, three hours; discussion, one hour. Exploration of macro-, meso-, and micro-level theories of violence, why states organize violence, why civilizations participate in violence, and physical, structural, and symbolic violence. Discussion of how various social categories such as race, ethnicity, religion, class, gender, and sex are implicated in violence and examination of cases of interstate war, genocide, civil war, terrorism, and pogroms from around world.

**123. Social Change. (4)** Lecture, three hours; discussion, one hour. How does social change occur? This question is linked to fundamental debates in sociology about structure (degree to which individual's actions are constrained by social forces) and agency (degree to which individuals can choose their own courses of action). Major theories (Marxist, Weberian, demographic, and strategic action) of social change take different views of structure and agency. Consideration of these theoretical issues in context of social change by considering empirical examples. P/NP or letter grading.

**CM124A-M124B. Conversational Structures I, II. (4-4)** (Same as Communication M144A-M144B.) Lecture, three hours; discussion, one hour. P/NP or letter grading. **M124A.** (Formerly numbered M124A.) Introduction to various structures employed in organization of conversational interaction, such as turn-taking, action sequencing, and repair. Concurrently scheduled with course C244A. **M124B.** Requisite: course M124A. Consideration of some more expanded sequence structures, story structures, topical sequences, and overall structural organization of single conversations.

**CM125. Talk and Social Institutions. (4)** (Same as Communication M125.) Lecture, four hours; discussion, one hour. Designed for juniors/seniors. Practices of communication and social interaction in number of major institutional sites in contemporary society. Setting varies but may include emergency services, police and courts, medicine, news interviews, and political oratory. Concurrently scheduled with course C258. P/NP or letter grading.

**126. Study of Norms. (4)** Lecture, three hours; discussion, one hour. Properties of norms, of normatively governed conduct, of lay and professional methods for describing, producing, using, and validating norms in contrasting settings of socially organized activities; relevance of these properties for programmatic problems of analytic sociology. Fieldwork required. P/NP or letter grading.

**127. Mind and Society. (4)** Lecture, two and one half hours; discussion, one hour. Requisite: course 1. Study of social production of modes of thought and forms of knowledge. Study of ways in which bodies of knowledge and cognitive styles are produced, used, and transformed in everyday, organizational, and extraordinary contexts. P/NP or letter grading.

**128. Sociology of Emotions. (4)** Lecture, three hours; discussion, one hour. Requisite: course 1. Designed for juniors/seniors. Sociological theories and explanations of social conditions shaping and producing emotional experiences; effects of individual expression of emotions on social conditions; relations between thought, sensations, and emotions; self and emotions; social construction of emotions. P/NP or letter grading.

**129. Sociology of Time. (4)** Lecture, three hours; discussion, one hour. Conceptualizations of time seen from scientific, philosophical, historical, and sociological perspectives; cyclical and linear time in primitive, ancient, and medieval societies; ritual, the sacred, and experience of the eternal; structuring of urban, modern, and postmodern societies by clock, calendar, and schedule; future value orientation and notion of progress; time, labor, and social domination. P/NP or letter grading.

**130. Self and Society. (4)** Lecture, three hours; discussion, one hour. Examination of social processes shaping experience, definition, and enactment of self and personal identity. P/NP or letter grading.

**131. Careers in Sociology. (4)** Lecture, three hours. Limited to juniors/seniors. Examination of possible career paths for Sociology majors, including such fields as business, nonprofit sector, government, healthcare, entertainment, and other areas. Development of career-relevant materials and skills. Letter grading.

**132. Social Psychology: Sociological Approaches. (4)** Lecture, three hours; discussion, one hour. Survey of contribution of sociologists to theory and research in social psychology, including theories of social control; conformity and deviation; reference groups; and interaction process. P/NP or letter grading.

**133. Collective Behavior. (4)** Lecture, three hours; discussion, one hour. Requisite: course 1. Designed for juniors/seniors. Characteristics of crowds, mobs, publics, social movements, and revolutions; their relation to social unrest and their role in developing and changing social organization. P/NP or letter grading.

**134. Culture and Personality. (4)** Lecture, three hours; discussion, one hour. Requisite: course 1. Designed for juniors/seniors. Theories of relation of variations in personality to culture and group life, in primitive and modern societies, and influence of social role on behavior. P/NP or letter grading.

**135. Sociology of Body. (4)** Lecture, three hours; discussion, one hour. Examination of body as social construction that is situated within particular social and historical context. Students gain understanding of how bodies become gendered, raced, classed, and sexualized in ways that create and reinforce social institutions and relations of power. Analysis of reciprocal processes of structuration: how body is shaped by social expectations and symbolic exchange, how meanings are attached to bodies and different body parts, and how these interpretations in turn shape social relations. Critical evaluation of embodiment experience, and contribution of sociological theories and data to understanding this process. P/NP or letter grading.

**M136. Eating Society: Science and Politics of Food from Individual to Planetary Health. (4)** (Same as Food Studies M136 and Society and Genetics M136.) Lecture, three hours; discussion, one hour. Questions of food and health are both individual and social. Students gain tools for understanding relationships between individual eaters, medicine, and social organization of food production and processing through set of research frameworks newly emergent in range of social and health sciences. Topics include individual and social ramifications of microbiome science; understanding how human gut microbes and health are shaped by pasteurization, processing, and food safety practices; One Health approaches that encompass human and animal health, discussing examples such as antibiotic resistance and emerging infectious disease as effects of large-scale agriculture; planetary health frameworks that link individual human metabolic health to issues of sustainable agriculture, for example how pesticides and fertilizers tie diets to environments; and resilience of cultural food systems in face of environmental pollution as issue of reproductive health. Letter grading.

**M137. Historical Sociology of Urban/Rural Relations and Food Production. (4)** (Same as Food Studies M167.) Lecture, three hours; discussion, one hour. Historical examination of food supply and food production in relation to urban and rural regions. Topics include food logistics such as storage, transportation, and distribution, as well as human population growth and migration, famine and hunger, and agricultural advances and environmental impacts. P/NP or letter grading.

**138. Death, Dying, and Afterlife. (4)** (Formerly numbered M138.) Lecture, three hours; discussion, one hour. Social analysis of social inequities in death, understanding of what constitutes good death, how we make sense of bad deaths, how to dispose of death, and what constitutes appropriate grieving. Death remains at foundation of discipline of sociology. Suicide does not occur randomly but is stratified according to social factors such as age, gender, race, sexual orientation, and class. Review of strength of sociological argument and evaluation of explanatory potential of different theories to make sense of death. Examination of historic and contemporary studies to examine how research and conceptualizations of death and dying have changed, and social responses to these phenomena. P/NP or letter grading.

**M139. Asian Community: Border-Crossing, Diasporic Formation, and Social Transformation. (4)** (Same as Asian American Studies M179.) Lecture, three hours; discussion, one hour. Exploration of critical issues facing broad Asian community, in context of globalization and international migration, through social science lens of migration studies and diaspora studies. Examination of how movements of people, ideas, capital, and goods create new trends and patterns of diasporic formation, integration, and social transformation at individual, group, and societal levels in non-Western contexts. Students engage in intellectually stimulating discussions and debates on immigration and immigrant integration in Asian world; and on anxieties, tensions, conflicts, and accommodation in age of globalization. Students also discuss challenges, possibilities, and opportunities of building cohesive Asian community. P/NP or letter grading.

**140. Negotiating Medical Care: Physician-Patient Conversations. (4)** Lecture, three hours; discussion, one hour. Overview of how physician-patient interaction influences kinds of treatment patients receive. Focus on routine primary care medical visits and study of how some of our most significant health-care epidemics are affected by communication that takes place in these everyday medical visits. Topics include how communication between clinicians and patients has changed over years, normative structure of medical visit, and how communication adds to series of public health problems currently faced. Students learn how to analyze actual interactions between physicians and patients with hands-on exercises to give them tools to examine these conversations. P/NP or letter grading.

**141A. Migration and Labor in Mexico-U.S. Context. (5)** Seminar, 20 hours. Mexico-U.S. migration is largest and oldest continuous international population flow of contemporary world. In recent decades, prompted by swift economic transformations, rural and urban Mexicans from every corner of Mexico have joined this migratory flow, settling well beyond southwestern region and into far-reaching areas of U.S. interior. Migration is binding U.S. and Mexico stronger than ever, putting this complex and multilayered phenomena at top of bilateral agenda. Examination of sociological dynamics of international migration and labor as they apply to Mexico-U.S. context, including demographic, political, and economic dynamics of migration, economic and social infrastructures that support cross-border mobility, and connections of migration with binational, national, regional, and local labor markets. Comparative insights to contrast this flow with other contemporary population streams. Offered in summer only. Letter grading.

**141B. Migration and Labor in Mexico-U.S. Context: Research Seminar. (5)** Seminar, 10 hours; fieldwork, 10 hours. Development of qualitative micro-study and research paper on migration and labor in Mexico-U.S. context. Research topic of interest to be selected so students become familiar with commonly employed qualitative methods of research. Designed to help students understand basics of methodological reasoning, how to formulate research questions, and how to frame and investigate one particular issue related to migration and labor. How to make ethical decisions about conducting research. Development of student abilities as researchers by conducting secondary and primary research culminating in final research paper to be presented to faculty members and peers. Offered in summer only. Letter grading.

**143. Human Health and Society. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 1, 20, 101. Exploration of long-run historical trends in relationship between human health and social organization, drawing on historical, anthropological, demographic, and sociological concepts, theories, and data. P/NP or letter grading.

**M144. Stress and Society: Biology and Inequality. (4)** (Same as Society and Genetics M144.) Lecture, three hours; discussion, one hour. Integrative view of health disparities, one of most pressing problems of society, through investigation of effects of socioeconomic status (SES) on health and disease, using specific lens of stress biology. Topics include introduction to fundamentals of physiology of stress, integration of literature on poverty and SES with studies on physiological consequences of poverty, and introduction of concepts of life course by following stress biology through childhood development and into adulthood. Letter grading.

**145. Sociology of Deviant Behavior. (4)** Lecture, three hours; discussion, one hour. Examination of leading sociological approaches to study of deviation and general survey of major types of deviation in American society. P/NP or letter grading.

**147A. Sociology of Crime. (4)** Lecture, three hours; discussion, one hour. Sociological theories of social origins, organization, and meanings of crime and criminal behaviors. P/NP or letter grading.

**147B. Sociology of Criminal Justice. (4)** Lecture, three hours; discussion, one hour. Examination of structures and routine decision-making processes of key criminal justice institutions, including police, courts, probation and parole, jails and prisons. P/NP or letter grading.

**M148. Sociology of Mental Illness. (4)** (Same as Disability Studies M148.) Lecture, three hours; discussion, one hour. Analysis of major sociological and social psychological models of madness. Study of social processes involved in production, recognition, labeling, and treatment of mental illness. P/NP or letter grading.

**149. Youth, Trouble, and Juvenile Justice. (4)** Lecture, three hours; discussion, one hour. Examination of processes through which youth become involved in juvenile justice system. Analysis of this system as people-processing and people-changing institution as context for considering critical issues in juvenile justice. P/NP or letter grading.

**M150. Sociology of Aging. (4)** (Same as Gerontology M150.) Lecture, three hours; discussion, one hour. Study of sociological processes shaping definition, experience, and response to aging in contemporary society. Topics include race, class, and gender in aging over life course; interpersonal relations and social worlds of aged; caregiving relations and institutions; professions concerned with aged and aging. Letter grading.

**151. Comparative Immigration. (4)** Lecture, three hours; discussion, one hour. Survey of immigration of Europeans, Asians, and Hispanics to the U.S. since the mid-19th century. Overview of immigration experience on ethno-racial groups that migrated voluntarily to this country, with emphasis on immediate postimmigration settlement. P/NP or letter grading.

**152. Comparative Acculturation and Assimilation. (4)** Lecture, three hours; discussion, one hour. Requisite: course 151. Comparison of acculturation and assimilation of Europeans, Africans, Mexicans, and Asians in the U.S., with emphasis on long-term cultural consequences of immigration. P/NP or letter grading.

**M153. Chinese Immigration. (4)** (Same as Asian American Studies M130C.) Lecture, three hours; discussion, one hour. Survey of sociological studies of Chinese immigration, with focus on international context, organization, and institutions of Chinese America and its interactions with social environment. P/NP or letter grading.

**154. Race and Ethnicity in Latin America. (4)** Lecture, three hours; discussion, one hour. Role of race and ethnicity in political, economic, and social lives of Latin American nations. P/NP or letter grading.



**M155. Latinos in U.S. (4)** (Same as Chicana/o and Central American Studies M155A.) Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Exploration of history and social conditions of Latinos in Los Angeles as well as nationally, with particular emphasis on their location in larger social structure and on comparisons with other minority groups. Topics include migration, family, education, and work issues. P/NP or letter grading.

**156. Race and Ethnicity in American Life. (4)** Lecture, three hours; discussion, one hour. Role of race and ethnicity in the U.S., including interplay between racial and ethnic structures and meanings. Special attention to comparison of African American and European American experiences and to transformation of Asian American and Latino communities and the nation generally, wrought by renewal of mass migration in second half of the 20th century. P/NP or letter grading.

**157. Social Stratification. (4)** Lecture, three hours; discussion, one hour. Analysis of American social structure in terms of evaluational differentiation. Topics include criteria for differentiation, bases for evaluation, types of stratification, composition of strata and status systems, mobility, consequences of stratification, and problems of methodology. P/NP or letter grading.

**158. Urban Sociology. (4)** Lecture, three hours; discussion, one hour. Description and analysis of urbanization and urbanism in the U.S. and world. P/NP or letter grading.

**M161. Comparative American Indian Societies. (4)** (Same as American Indian Studies M161.) Lecture, three hours. Requisite: course 1 or American Indian Studies M10. Comparative and historical study of political, economic, and cultural change in indigenous North American societies. Several theories of social change, applied to selected case studies. Letter grading.

**M162. Sociology of Gender. (5)** (Same as Gender Studies M162.) Lecture, three hours; discussion, one hour. Enforced requisite: course 1 or Gender Studies 10. Examination of processes by which gender is socially constructed. Topics include distinction between biological sex and sociological gender, causes and consequences of gender inequality, and recent changes in gender relations in modern industrial societies. P/NP or letter grading.

**M163. Gender and Work. (4)** (Same as Gender Studies M163.) Lecture, three hours. Requisite: course 1 or Gender Studies 10. Exploration of relationship of gender to work, concentrating on the U.S. experience but also including some comparative material. Particular emphasis on analysis of causes and consequences of job segregation by gender and of wage inequality. P/NP or letter grading.

**M164. Politics of Reproduction and Everyday Life. (4)** (Same as Gender Studies M164.) Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Social and human reproduction is global policy issue. Government efforts to influence reproduction are important feature of modern state: political intervention into private life, intimacy, and sexuality. Exploration of politics of reproduction—intersection between politics and life cycle or between public sphere and private lives—and coverage of broad range of issues addressing prevention and promotion of reproduction from historical-comparative approach. Reading, discussion, and development of culminating project. P/NP or letter grading.

**M165. Sociology of Race and Labor. (4)** (Same as African American Studies M165 and Labor Studies M165.) Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Exploration of relationship between race/ethnicity, employment, and U.S. labor movement. Analysis of underlying racial divisions in workforce and how they evolved historically. Consideration of circumstances under which workers and unions have excluded people of color from jobs and unions, as well as circumstances under which workers and unions have organized people of color into unions in efforts to improve their wages and working conditions. Impact of globalization on these dynamics. P/NP or letter grading.

**168. Organizations and Society. (4)** Lecture, three hours; discussion, one hour. Sociological analysis of organizations and their social environment. Introduction to basic theories, concepts, methods, and research on behavior of organizations in society. P/NP or letter grading.

**169. Law and Society. (4)** Lecture, three hours; discussion, one hour. Specific topics may include law in preindustrial and industrialized societies, legalization of contemporary social relations, participants' experiences of legal processes, lay perceptions of justice, social movements toward equal justice, roles of lawyers and judges, social impact of court decisions. P/NP or letter grading.

**170. Medical Sociology. (4)** Lecture, three hours; discussion, one hour. Requisite: course 1. Provides majors in Sociology and other social sciences, as well as students preparing for health sciences careers, with understanding of health-seeking behavior and interpersonal and organizational relations that are involved in receipt and delivery of health services. P/NP or letter grading.

**171. Occupations and Professions. (4)** Lecture, three hours; discussion, one hour. Description and analysis of representative occupations and professions, with emphasis on contemporary U.S. P/NP or letter grading.

**172. Entrepreneurship. (4)** Lecture, three hours; discussion, one hour. Description and analysis of entrepreneurship, with special reference to historical origins, ideology, international comparisons, women and ethnic minority participation, legal and illegal forms, public and private auspices. P/NP or letter grading.

**173. Economy and Society. (4)** Lecture, three hours; discussion, one hour. Sociology of economic life, with emphasis on principal economic institutions of the U.S. P/NP or letter grading.

**M174. Sociology of Family. (4)** (Same as Gender Studies M174.) Lecture, three hours; discussion, one hour. Theory and research dealing with modern family, its structure, and functions, including historical changes, variant family patterns, family as institution, and influence of contemporary society on family. P/NP or letter grading.

**M175. Sociology of Education. (5)** (Same as Education M108.) Lecture, four hours; discussion, one hour. Study of how U.S. educational system both promotes socioeconomic opportunities and maintains socioeconomic inequalities: historical and theoretical perspectives on role of education in U.S. society; trends in educational attainment; ways in which family background, class, race, and gender affect educational achievement and attainment; stratification between and within schools; effects of education on socioeconomic attainment, family, health, attitudes, and social participation; educational policies to improve school quality and address socioeconomic inequalities. Letter grading.

**M176. Sociology of Mass Communication. (4)** (Same as Communication M147.) Lecture, four hours; discussion, one hour (when scheduled). Studies in relationship between mass communication and social organization. Topics include history and organization of major media institutions, social forces that shape production of mass media news and entertainment, selected studies in media content, and effects of media on society. P/NP or letter grading.

**M178. Sociology of Caribbean. (4)** (Same as African American Studies M178.) Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Historical sociology of Caribbean, with emphasis on colonialism and decolonization, development and underdevelopment, race-making institutions and evolution of race relations, nationalism and migration. P/NP or letter grading.

**180A-180Z. Special Topics in Sociology. (4 each)** Lecture, three hours; discussion, one hour. Limited to juniors/seniors. Study of selected topics of sociological interest. Consult Schedule of Classes for topics and instructors. May be repeated for credit and may be applied as elective units toward Sociology major. P/NP or letter grading.

**181A. Sociology of Global China. (4)** Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Analyses of how domestic developments create impetus for China's global expansion, and assessment of global China's variegated and uneven consequences. Concrete case studies include Belt and Road Initiative, soft power and cultural diplomacy, internal colonization of Hong Kong and Xinjiang, China in Africa, U.S.-China trade war, and New Cold War. P/NP or letter grading.

**181B. Sociology of Contemporary China. (4)** Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Survey of changes in Chinese society from beginning of 20th century to present. Topics include social mobility and inequality, family and household, and population. Emphasis on changes post-Reform Era and in present. Focus on interaction of economic and political change plus family organization. Contrasts and similarities between China and West, China's place in social sciences, and challenges due to social organization that originated from studying Western societies. May be taken independently for credit. P/NP or letter grading.

**182. Political Sociology. (4)** Lecture, three hours; discussion, one hour. Contributions of sociology to study of politics, including analysis of political aspects of social systems, social context of action, and social bases of power. P/NP or letter grading.

**183. Comparative and Historical Sociology. (4)** Lecture, three hours; discussion, one hour. Requisite: course 1. Survey of central themes of comparative and historical studies in sociology. Various aspects of development of modern society, including development of nation-state, emergence of capitalism, industrialization, and population growth. Variation in contemporary society, viewed from variety of theoretical perspectives. P/NP or letter grading.

**185. American Society. (4)** Lecture, three hours; discussion, one hour. Analysis of major institutions in the U.S. in historical and international perspective, with emphasis on topics such as industrialization, work, state, politics, community, family, religion, and American culture. Theories of social change, conflict, and order applied to case of the U.S. P/NP or letter grading.

**186. Latin American Societies. (4)** Lecture, three hours; discussion, one hour. Social structure and social conflict in Latin America, with special attention to racial and class structures and dilemmas of economic and political development. Country and specific focus varies each term. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Undergraduate Seminar: Self and Identity. (5)** Seminar, three hours. Limited to junior/senior Sociology majors. Examination of cultural, historical, and interactional contexts shaping definition, enactment, and experience of self. Reading, discussion, and development of culminating project. Letter grading.

**191B. Undergraduate Seminar: Sociology of Humor and Laughter. (5)** Seminar, three hours. Limited to junior/senior Sociology majors. Selected topics. Reading, discussion, and development of culminating project. Letter grading.

**191C. Undergraduate Seminar: Money and Emotions. (5)** Seminar, three hours. Limited to junior/senior Sociology majors. Selected topics. Reading, discussion, and development of culminating project. Letter grading.

**191D. Undergraduate Seminar: Sociology of Development. (5)** Seminar, three hours. Limited to juniors/seniors. Taught in Spanish. Selected topics on development in Third World from global perspective. Reading, discussion, and development of culminating project. Letter grading.

**M191DC. CAPP Washington, DC, Research Seminars. (8)** (Same as Communication M191DC, History M191DC, Political Science M191DC, and Public Affairs M191DC.) Seminar, three hours. Limited to CAPP Program students. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**191E. Undergraduate Seminar: Population Growth Models. (5)** Seminar, three hours. Limited to juniors/seniors. Selected topics. Reading, discussion, and development of culminating project. Letter grading.

**191F. Undergraduate Seminar: Sociology of Globalization. (5)** Seminar, three hours. Limited to juniors/seniors. Great extension of social relations across globe has occurred over last 50 years. What are causes and mechanisms of this process, how far has it transformed human societies, and how far will it go in future? Economic, cultural, political, and military aspects of globalization, with focus on extent to which global expansion of capitalism, nation-state system, and American imperialism reinforce or undercut each other, producing new lines of division and conflict across world. Reading, discussion, and development of culminating project. Letter grading.

**191H. Honors Seminars: Sociology. (4)** Seminar, three hours. In-depth introduction to process of producing scholarly sociological research for students who intend to write undergraduate thesis for departmental honors. Letter grading.

**191I. Undergraduate Seminar: Health and Inequality. (5)** Seminar, three hours. Limited to juniors/seniors. During past century, social inequalities in health and survival were widening in the U.S. as in other developed societies. Broad overview of these trends and their causes. Reading, discussion, and development of culminating project. Letter grading.

**191J. Undergraduate Seminar: Mexican Society. (5)** Seminar, three hours. Selected topics on contemporary Mexican society and vital transformations it has undergone in recent years. Reading, discussion, and development of culminating project. Letter grading.

**191K. Undergraduate Seminar: Cigarettes and Western Civilization—Sociological History of Smoking. (5)** Seminar, three hours. Limited to juniors/seniors. Use of history of tobacco and cigarette smoking to explore important themes in sociology, history, and

culture. History of tobacco from its roots in Native American culture, its contribution to foundation of European colonies in New World, its cultural incorporation in western Europe, its role in rise of industrial way of life and health consequences, and its demise as legitimate soft drug for modern urban people. Letter grading.

**191L. Undergraduate Seminar: Environmental Justice and Sustainability. (5)** Seminar, three hours. Limited to juniors/seniors. Sociological approach to study of environmental issues and problems. Topics include ecopolitics and ecofeminism, environmental racism, global environmental change, sustainable development, and society-environment interface. Reading, discussion, and development of culminating project. Letter grading.

**191M. Undergraduate Seminar: Social Ecology. (5)** Seminar, three hours. Limited to juniors/seniors. Fundamentals of sociological approach to social ecology, also known as human ecology. Study of adaptation of population to its environment. Topics include density, maintaining personal space, space and territoriality, and effects of environment on humans. Reading, discussion, and development of culminating project. Letter grading.

**C191N. Undergraduate Seminar: Urban and Suburban Sociology. (5)** Seminar, three hours. Limited to juniors/seniors. History and present condition of cities and suburbs in America, with stress on global cities such as New York and Los Angeles, and comparisons to London and Shanghai. Process of suburbanization as it began in early 19th century and still continues. Analysis of city politics, house and architectural styles, crime, urban terror, public housing and ghettos, segregation and integration of neighborhoods, question of gentrification, immigration, urban culture (especially art, museums, and movie and music industries), and environmentalism. Concurrently scheduled with course C297. Letter grading.

**191NY. Undergraduate Seminar: Urban and Suburban Sociology in New York City. (5)** Seminar, eight hours. Limited to students in summer UCLA Travel Study Program. Cutting-edge urban issues in country's largest city, including New York's attempt to plan for city of 9.2 million, rebuilding of World Trade Center, Robert Moses (New York's master builder), urban economic development, green New York, transportation systems, urban politics, house and architectural styles, including New York's famous skyscrapers, historic preservation, crime and police departments, ghetto, education, urban poor, public housing, and search for affordable housing. Offered in summer only. Letter grading.

**191O. Undergraduate Seminar: Ideals of Love in Historical Perspective. (5)** Seminar, three hours. Limited to juniors/seniors. Exploration of historically specific understandings of love. Reading, discussion, and development of culminating project. Letter grading.

**191P. Undergraduate Seminar: Politics of Reproduction. (5)** Seminar, three hours. Limited to juniors/seniors. Social and human reproduction is global policy issue. Government efforts to influence reproduction are important feature of modern state: political intervention into private life, intimacy, and sexuality. Exploration of politics of reproduction—intersection between politics and life cycle or between public sphere and private lives—and coverage of broad range of issues addressing prevention and promotion of reproduction from historical-comparative approach. Reading, discussion, and development of culminating project. Letter grading.

**191Q. Undergraduate Seminar: Communication in Medical Care. (5)** Seminar, three hours. Limited to juniors/seniors. Sociology dimensions of patient care in primary care context. Use of microsociological methods to examine main facets of American primary care medical visits, including detailed analysis of interactional conduct of those visits and development of microanalytical constructs into quantitative measures. Emphasis on direct contact with empirical materials and development of observational and analytic skills. Reading, discussion, and development of culminating project. Letter grading.

**191R. Undergraduate Seminar: Cultural Sociology. (5)** Seminar, three hours. Limited to juniors/seniors. Introduction to classic theoretical approaches and contemporary developments in study of social worlds dedicated to creating and handling cultural institutions such as literature, journalism, film/television, art, architecture, music, dance, and museums. Discussion of such issues as contemporary validity of distinction between high and popular/low culture, relationship of mainstream and marginal culture, how culture expresses and reinforces social inequality, organizational context of culture, and how people express and decipher meaning in cultural objects. Reading, discussion, and development of culminating project. Letter grading.

**191S. Undergraduate Seminar: Sociology of Gender and Sexuality. (5)** Seminar, three hours. Limited to juniors/seniors. Sexuality is important site for enactment of gender and gender identity. Sexual preference and sexual behavior can also form basis for social identity, repression, discrimination, and privilege, independent of gender. Social factors such as social class, ethnicity, generation, and networks shape our sexual practices and choice of partners. Reading and writing about variety of original sociological, historical, and anthropological texts and development of culminating project. Letter grading.

**191T. Undergraduate Seminar: War and Society. (5)** Seminar, three hours. Limited to juniors/seniors. Study of relationship between society's military and its social organization in general, with particular attention to shock-based civic militarism characteristic of the West. Topics include honor, discipline, bureaucracy, conscription, logistics, total war, guerilla war, terrorism, and counterinsurgency. Reading, discussion, and development of culminating project. Letter grading.

**191V. Variable Topics Research Seminars: Sociology. (5)** Seminar, three hours. Limited to juniors/seniors. Study of selected topics of sociological interest. Reading, discussion, and development of culminating project. Consult Schedule of Classes for topics and instructors. May be repeated for credit and may be applied as elective units toward Sociology major. Letter grading.

**194. Research Group Seminars: Sociology. (2)** Seminar, two hours. Designed for undergraduate students who are part of research group. Discussion of research methods and current literature in field. May be repeated for credit. P/NP grading.

**M194DC. Quarter in Washington, DC, Research Seminar. (4)** (Same as History M194DC and Political Science M194DC.) Seminar, three hours. Limited to Quarter in Washington students and other students enrolled in UC Washington Center programs. Seminars for undergraduate students in Center for American Politics and Public Policy's program in Washington, DC. Focus on development and execution of original empirical research based on experiences from Washington, DC-based field placements. Study of variety of qualitative methods (observation, interviewing, etc.), with comparison to quantitative analysis. Examination of features of solid and significant research; intensive writing. Letter grading.

**195. Community or Corporate Internships in Sociology. (4)** Tutorial, three hours. Limited to juniors/seniors. Internship in community agency or business to be supervised jointly by Center for Community Learning and faculty adviser. Students meet on regular basis with instructor and provide weekly reports of their experience. Normally only 4 units of internship are allowed. Individual contract with supervising faculty member required. P/NP or letter grading.

**195CE. Community and Corporate Internships in Sociology. (4)** Tutorial, to be arranged; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in corporate, governmental, or nonprofit setting coordinated through Center for Community Learning. Students complete weekly written assignments, attend biweekly meetings with graduate student coordinator, and write final research paper. Faculty sponsor and graduate student coordinator construct series of reading assignments that examine issues related to internship site. May be repeated for credit with consent of Center for Community Learning. No more than 4

units may be applied toward major; units applied must be taken for letter grade. Individual contract with supervising faculty member required. P/NP or letter grading.

**M195DC. Quarter in Washington, DC, Internships. (4)** (Same as Community Engagement and Social Change M195DC, History M195DC, Political Science M195DC, and Public Affairs M195DC.) Tutorial, four hours. Limited to junior/senior Quarter in Washington program students. Internships in Washington, DC, through Center for American Politics and Public Policy. Students meet on regular basis with instructor and provide periodic reports of their experience. Individual contract with supervising faculty member required. P/NP grading.

**198A-198B-198C. Honors Research in Sociology. (4-4-4)** Tutorial, one hour. Requisite: course 191H. Limited to sociology honors program students. May be repeated for credit. Individual contract required. Letter grading. **198A.** Design of research project to serve as student's honors thesis. Research proposal, detailed bibliography, and regular meetings with sponsoring faculty member required. **198B.** Requisite: course 198A. Continuation of work initiated in course 198A. Development of honors thesis in consultation with instructor. **198C.** Requisite: course 198B. Completion of honors thesis under direct supervision of honors faculty director.

**199. Directed Research in Sociology. (2 to 4)** Tutorial, one hour. Preparation: 3.0 grade-point average in major. Requisites: course 1, and Political Science 6 or Statistics 10 or 13. Limited to junior/senior Sociology majors. Independent intensive study designed for students who want to do research under guidance of faculty mentor. Scheduled meetings to be arranged between faculty member and student. Culminating paper or project required. May be repeated for maximum of 16 units, but only 8 units may be applied toward major. Individual contract required; see undergraduate counselor. P/NP or letter grading.

**199A-199B. Directed Research in Language and Social Behavior. (4-4)** Tutorial, one hour. Limited to junior/senior Language and Social Behavior minors. Independent intensive study designed for students who want to do research under guidance of member of Language and Social Behavior minor faculty advisory committee. Scheduled meetings to be arranged between faculty member and student. Culminating paper or project required. Individual contract required; see undergraduate counselor. Letter grading.

## Graduate Courses

**201A-201B-201C. Proseminars: Sociology. (2-2-2)** Seminar, two hours every other week. Required of first-year graduate sociology students. Introduction to range of theoretical and research interests represented by department faculty members. S/U grading.

**202A-202B. Theory and Research in Sociology. (4-4)** Lecture, two hours; discussion, two hours. Required of first-year graduate sociology students. Examination of interrelations of theory, method, and substance in exemplary sociological works, with analytical and skills-centered orientation. In Progress (202A) and S/U or letter (202B) grading.

**203. How to Write a Lot. (4)** Seminar, three hours. Designed to help graduate students develop regular and productive writing practices. Appropriate for students in their second year or beyond who have one full draft of their MA paper written and want to revise and publish it in timely manner. Development of regular writing schedules and protecting them from competing demands. Learning of specific genres of writing for academic journals, books, and op-eds. Editing of students' own work and that of classmates. S/U or letter grading.

**204. Topics in Sociological Theorizing. (4)** Seminar, four hours. Examination of selected issues and problems in classical or contemporary sociological theory. S/U or letter grading.

**205. Family and Social Change. (4)** Lecture, three hours. Examination of sources of change in family and household organization, with major focus on relation-

ships among economic institutions, family structure, and content of family life. Consideration of concepts, theories, and data about kinship. S/U or letter grading.

**M206. Understanding Fertility: Theories and Methods. (4)** (Same as Community Health Sciences M222.) Lecture, three hours. Preparation: one formal or social demography course. Requisite: Biostatistics 100A. Application of demographic theories and methods to describe fertility trends and differentials and social and proximate determinants of fertility, with emphasis on understanding key proximate determinants. For advanced students interested in population, demography of health, and social demography. Letter grading.

**208A-208B. Social Network Methods. (4-4)** Lecture, three hours; laboratory, one hour. Requisites: courses 210A, 210B. Techniques for measuring characteristics of networks and positions in networks. Centrality of positions, centralization and density of networks, structural equivalence, cliques. Readings of exemplars of network research. Computer programs. S/U or letter grading.

**208C. Machine Learning for Social Scientists. (4)** Lecture, three hours. Requisites: courses 210A, 210B, or consent of instructor. Conceptual, mathematical, and computational foundations of machine learning, with special focus on social science applications. Survey of supervised and unsupervised methods, including Naïve Bayes, k-means, logistic regression, decision trees (classification and regression), topic models, and neural networks. Practicalities of implementation on range of data types. S/U or letter grading.

**210A-210B. Intermediate Statistical Methods I, II. (4-4)** Lecture, three hours; discussion, two hours. Intermediate statistical methods using computers: probability theory, sampling distributions, hypothesis testing, interval estimation, multiple regression and correlation, experimental design, analysis of variance and covariance, contingency tables, sampling theory. S/U or letter grading.

**210C. Intermediate Statistical Methods III. (4)** Lecture, three hours; discussion, one hour. Requisite: course 210B. Survey of advanced statistical methods used in social research, with focus on problems for which classical linear regression model is inappropriate, including categorical data, structural equations, longitudinal data, incomplete and erroneous data, and complex samples. S/U or letter grading.

**211A-211B. Comparative and Historical Methods. (4-4)** Lecture, three hours. In Progress (211A) and S/U or letter (211B) grading. **211A.** Strategies of Research and Conceptualization. Topics include relationship of theory and fact to social sciences, logic of comparative and historical analysis, and substantive paradigms of comparative and historical analysis. Reading involves methodological examination of basic works in representative problem areas. **211B.** Research Techniques. Requisite: course 211A. Topics include problem of evidence, quantitative and qualitative data. Techniques of data analysis, including use of manuscript census, content analysis, collective biography, and secondary analysis.

**212A. Quantitative Data Analysis. (4)** Lecture, three hours; discussion, one hour. Enforced requisites: courses 210A, 210B. Course 212A is enforced requisite to 212B. Analysis and interpretation of primarily nonexperimental quantitative data, with focus on sample survey and census data. Extensive practice at utilizing statistical methods encountered in previous courses, culminating in term paper proposal in style of *American Sociological Review* or similar journal article. Topics include simple tabular analysis, correlation, log-linear analysis, ordinary least squares regression, regression with interactions, robust regression, diagnostic procedures, and methods for handling complex sample survey designs. In Progress grading (credit to be given only on completion of course 212B).

**212B. Quantitative Data Analysis. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 212A. Analysis and interpretation of primarily nonexperimental quantitative data, with focus on sample survey and census data. Extensive practice at utilizing statistical methods encountered in previous courses, culminating in term paper in style of *Amer-*

*ican Sociological Review* or similar journal article. Topics include missing data; binomial, multinomial, and ordinal logistic regression; factor analysis and scale construction; methods for causal inference, including fixed effects and propensity score matching; and primer on advanced topics, including structural equations and multilevel models. S/U or letter grading.

**212C. Study Design and Other Issues in Quantitative Data Analysis. (4)** Lecture, three hours. Designed for graduate and undergraduate students who have had some exposure to statistics and quantitative methods. Introduction to study design, including experimental, longitudinal, cohort, time-series designs, contextual, and other designs. Discussion of suitability of various design classes for specific analytic goals, as well as their comparative strengths and weaknesses. S/U or letter grading.

**M213A. Introduction to Demographic Methods. (4)** (Same as Biostatistics M208, Community Health Sciences M208, and Economics M208.) Lecture, four hours. Preparation: one introductory statistics course. Introduction to methods of demographic analysis. Topics include demographic rates, standardization, decomposition of differences, life tables, survival analysis, cohort analysis, birth interval analysis, models of population growth, stable populations, population projection, and demographic data sources. Letter grading.

**213B. Applied Event History Analysis. (4)** Lecture, three hours. Preparation: exposure to binary response models. Requisites: courses 210A, 210B. Introduction to regression-like analyses in which outcome is time to event. Topics include logit models for discrete-time event history models; piecewise exponential hazards models; proportional hazards; nonproportional hazards; parametric survival models; heterogeneity; multi-level survival models. S/U or letter grading.

**M213C. Population Models and Dynamics. (4)** (Same as Community Health Sciences M209.) Lecture, three hours. Requisite: course M213A. Population models and their dynamics in population processes. How demographic models are used in estimation of population size, age structure, and associated dynamics. Computer simulations of demographic processes to gauge conclusions from demographic models. Estimation of demographic models in human population and broader relevance of demographic analysis to study of any population or system, including health and social systems. S/U or letter grading.

**216A. Survey Research Design. (4)** Lecture, three hours. Recommended requisite: course 210A. Past, present, and future of survey research; survey modes; survey errors; survey sampling; response rates; questionnaire design; reliability and validity of survey items; survey administration and management; ethics and costs. Letter grading.

**216B. Survey Research Design. (4)** Lecture, three hours. Enforced requisite: course 216A. Practical application of survey design skills. Students design and implement individual survey data collection projects and collectively review and evaluate their projects' results and challenges. Letter grading.

**217A. Analyzing Ethnographies. (4)** Seminar, three hours. Analysis of ethnographic monographs. S/U or letter grading.

**217B-217C. Ethnographic Fieldwork. (4-4)** Seminar, three hours. Recommended requisite: course 217A. Theories and techniques of ethnographic fieldwork. Kinds of problems amenable to ethnographic approaches, methods, and techniques for doing fieldwork, and ethnical problems involved in such research. In Progress (217B) and letter (217C) grading.

**220. Self and Society. (4)** Lecture, three hours. Examination of social and cultural processes shaping definition and experience of the self, embodied interactional practices through which the self is constructed in everyday and institutional contexts, formation and transformation of self during life course, and construction of collective identity. Letter grading.

**222. Foundations of Ethnomethodological, Phenomenological, and Analytic Sociologies. (4)** Lecture, three hours. Designed for graduate students. Basic issues, methods, and topics of ethnomethod-

ological, phenomenological, conversation-analytic, and related varieties of inquiry. Central themes such as world of everyday life, problem of rationality, rules/norms and tacit knowledge, problem of social order, speaking and discourse, constitutive practices, and production of ordinary interaction in first part; guest presentations by affiliated faculty in second part. S/U or letter grading.

**223. Phenomenological and Interactionist Perspectives on Selected Topics.** (4) Lecture, three hours. Comparison of phenomenological and symbolic and perspectives by examining particular body of live or currently unresolved substantive issues. Topics vary; attention on development of phenomenological and interactionist thought on topic of concern, with special concern for ambiguities and divergences both within and between two approaches. When relevant, attention to logical and historical relations of phenomenology and interactionism of pragmatist, existentialist, and ordinary language philosophies. S/U or letter grading.

**M225A. Applications of Economic Theory: California Population Research Topical Seminar Series.** (4) (Same as Economics M204A.) Seminar, three hours. Limited to California Center for Population Research (CCPR) affiliates. Examination of issues such as demography, health, aging, labor, and broad array of topics concerned with effects of economic, social, and political transformations on human behavior both in U.S. and abroad. S/U grading.

**226A-226B. Introduction to Theory and Major Empirical Research in Social Demography.** (4-4) Lecture, two hours; discussion, one hour. Prerequisite: course 210A. Survey and critical examination of population theories and related major empirical research. Emphasis on interrelation of cultural, socioeconomic, and demographic factors. Introduction to elementary demographic methods utilizing microcomputers. S/U or letter grading.

**227. Sociology of Knowledge.** (4) Lecture, three hours. Designed for graduate students. Survey of theories and research concerning social determinants of systems of knowledge and role of intellectual and artistic elites in Western societies. S/U or letter grading.

**228. Critical Issues in Macrosociology.** (4) Lecture, three hours. Conceptual introduction to area of macrosociology in which exemplary works are read, studied for substance and methods, and critiqued in seminar and in written papers. S/U or letter grading.

**230A-230B. Comparative Ethnicity, Race, and Nationalism.** (4-4) Seminar, three hours. Preparation for independent research in area of comparative ethnicity, race, and nationalism through close reading of key theoretical and empirical works. S/U or letter grading.

**230C. Comparative Ethnicity, Race, and Nationalism.** (4) Seminar, three hours. Introduction to comparative and historical sociology of race and ethnicity to demonstrate merits of double comparative approach to race, one that strives to be as comparative at level of theory (attending to relationship between race and other forms of social classification, including ethnicity and nationality) as it does at level of research. Exploration of cases from wide variety of countries, including Australia, Brazil, Colombia, Dominican Republic, Haiti, Mexico, modern China, modern Japan, Nazi Germany, Nicaragua, Rwanda, South Africa, Sudan, and U.S. S/U or letter grading.

**M231. Race, Class, and Gender: Constructing Black Womanhood and Black Manhood in America.** (4) (Same as African American Studies M200G.) Seminar, four hours. Race, class, gender, and sexual identity are axes of stratification, identity, and experience. They are not merely identities but structural locations that are often taken for granted and rarely confronted, challenged, or contested. Many times one or more of these go unrecognized. Exploration of multiple and intersecting ways these concepts shape society, individual life chances, and daily social interactions for African Americans. Examination of race, class, and gender inequalities as individual aspects of social life. How race, class, gender, and sexual identity shape societies and individual experiences in interaction with each other. How these inequalities shape and are shaped by social institutions, including cultural institu-

tions, economy, and family, within context of experiences of black women and black men in contemporary U.S. Letter grading.

**232. Class, Politics, and Society.** (4) Lecture, four hours. Nature of class structure and how it affects relation of class structure to politics and political power. Issue of salience of class versus other identities such as gender, age, race, and nationalism. Examination of contemporary globalization tendencies of capitalism. Letter grading.

**233. Foundations of Political Sociology.** (4) Lecture, three hours. Designed for graduate students. Survey of field of political sociology, oriented around critical themes in major theoretical traditions and contemporary exemplars. Special attention to competing perspectives on power, theory of state, and relationship of class structure to politics. S/U or letter grading.

**234. Sociology of Development.** (4) Seminar, three hours; discussion, one hour. Readings and discussion of theoretical, historical, and specific issues in sociology of development (e.g., world system theory, developmental state, import substitution industrialization, export promotion industrialization, neoliberalism in Latin America, new approaches). S/U or letter grading.

**235A-235B. Race/Ethnicity in U.S.** (4-4) Lecture, three hours. Survey of theoretical and empirical literature on race, ethnicity, and immigrant groups in U.S. to provide comparative analysis of racial/ethnic groups as well as provide detailed knowledge of particular racial/ethnic groups, to situate contemporary experiences within historical contexts, to understand structural integration into U.S. society (i.e., structural assimilation or socioeconomic mobility), and to examine theoretical approaches to understanding race and ethnicity in contemporary society. Preparation for field examination in race and ethnicity. S/U or letter grading.

**236A. International Migration.** (4) Lecture, three hours. Comprehensive overview of key current theoretical debates in study of international migration, with focus on exploration of possibilities of comparative (historical and cross-national) research program in field, linking North American, European, and other global experiences of immigration. S/U or letter grading.

**M236B. International Migration.** (4) (Same as Geography M224.) Lecture, three hours. Further exploration of key current theoretical debates in study of international migration, with emphasis on exploring both theoretical debates of field and empirical data and case studies on which those debates hinge, to encourage students to undertake research in field. S/U or letter grading.

**236C. International Migration.** (4) Lecture, three hours. Designed for students beginning or undertaking original research in field of international migration. Outside lectures, oral presentations of student projects, circulation of completed or draft student papers. S/U or letter grading.

**237. Seminar: Theory and Research in Comparative Social Analysis.** (2) Seminar, two hours. Designed for graduate students. Emphasis on one issue of particular importance for comparative analysis of capitalism and socialism, North America and Western Europe, developed capitalist and socialist countries and Third World, and implications for theory construction and social research. S/U grading.

**M238. Sociology of Gender and Sexuality.** (4) (Same as Gender Studies M238.) Seminar, three hours. Designed for graduate students. Analysis of current American feminist theory relevant to sociologists. Exploration of critiques of second wave feminism by working class feminists and/or feminists of color, feminist scholars from other countries, and recent so-called antifeminist feminists. Discussion of directions for future feminist sociology. Letter grading.

**239A-239B. Social Stratification, Mobility, and Inequality.** (4-4) Lecture, three hours. Enforced prerequisites: courses 210A, 210B. Course 239A is enforced prerequisite to 239B. Introduction to literature on social stratification, mobility, and inequality in U.S. and abroad, with focus on concepts, data, methods, and facts about occupational and class structure; intergenerational transmission of socioeconomic status;

effects of family, school, and labor market on socioeconomic achievement, careers, and inequality; earnings, income, and wealth distribution; poverty; social mobility; socioeconomic factors and marriage; gender and ethnic stratification; and health disparities. S/U or letter grading.

**240. Sociology of Education.** (4) Lecture, three hours. Overview of social scientific study of education, with special focus on sociology (along with history and philosophy). Examination of contemporary sociology of education's focus on stratification at two levels. Examination of how scholars have studied schools' role in maintaining or altering stratification and inequality by looking at quantitative and qualitative approaches to race, class, gender, and sexuality in education. Examination of how focus on stratification can exist alongside, provide foundation for, or obfuscate other longstanding commitments in study of schooling including moral character, citizenship, ethnic nationalism, and maintenance of particular economic, racial, and sexual order. Examination of classic philosophical texts and recent sociological and historical work on how broader structures of government, culture, and social institutions affect what schools do and what actors believe they are supposed to do. S/U or letter grading.

**241. Theories of Gender in Society.** (4) Lecture, one hour; discussion, two hours. Gender stratification in society and sociology; extent of gender diversity in human societies past and present; why gender is absent in classical macrosociology; can masculinist paradigms make space for gender or does feminist-informed sociology necessitate fresh approach? S/U or letter grading.

**C244A. Conversational Structures I.** (4) (Formerly numbered 244A.) Lecture, three hours; discussion, one hour. Introduction to various structures employed in organization of conversational interaction, such as turn-taking, action sequencing, and repair. Concurrently scheduled with course CM124A. S/U or letter grading.

**244B-244C. Conversation Analysis II, III.** (4-6) Lecture, three hours; discussion, two hours. S/U or letter grading. **244B.** Prerequisite: course C244A. Continuation of introduction to some structures basic to organization of conversational interaction: organization of repair, and practices of word selection and reference to persons, places, time, and action. **244C.** Prerequisites: courses 244A, 244B. Continuation of introduction to some structures basic to organization of conversational interaction: practices of action formation, storytelling organization, and overall structural organization of single conversations.

**245. Cultural Sociology: Classical and Contemporary Approaches.** (4) Lecture, one hour; discussion, two hours. Exploration of classical approaches to cultural dimension of social life—Weberian, Durkheimian, Parsonian, and critical—and living traditions they have spawned. Examination of contemporary efforts at constructing new cultural sociology. Theoretical focus, with consideration of case studies. S/U or letter grading.

**246. Sociology of Culture.** (4) Seminar, three hours. Theoretical and methodological issues in structural approaches to culture. Perspectives include cultural economics, political economy, and production of culture. S/U or letter grading.

**247. Sociology of Emotions.** (4) Lecture, two hours; discussion, one hour. Designed for graduate students. Sociological theories of emotional expression; experiential approaches to emotions: motivational, cognitive, psychophysiological, and behavioral; repression, social oppression, and emotions; creativity and expressed affect; thought, sensations, and emotions; specific emotions; cultural differences in emotional expression; measurement of emotions. Letter grading.

**248. Selected Topics in Culture and Society.** (4) Seminar, three hours. Designed for graduate students. Seminar on selected topics on culture and society. Consult Schedule of Classes for topics and instructors. May be repeated for credit. S/U or letter grading.

**M249. Culture, Brain, and Development.** (4) (Same as Psychology M247.) Seminar, three hours. General introduction to interrelations of culture, brain, and development, including both social and cognitive devel-



opment. Special attention to effects of social change on culture and human development. S/U or letter grading.

**250. Sociology of Health. (4)** Seminar, three hours. Exploration of literature of human health as product of society. Macro focus and micro focus used to examine relevance of macro organizational features of national society (culture, economy, politics) while maintaining awareness of micro pathways that link these wider influences to personal experience (mind, body, emotion). Main focus on modern industrial societies and organized around many leading issues in sociology of health. S/U or letter grading.

**251. Social Movements. (4)** Seminar, three hours. In-depth exploration of current theoretical debates and empirical research on social movements, collective action, and contentious politics, examining case studies, comparative analyses, and large-N investigations, with focus on developing student expertise in understanding social movement research and conceptualizing research projects. S/U or letter grading.

**M252. Selected Topics in Sociology of Gender. (4)** (Same as Gender Studies M252.) Lecture, two hours; discussion, two hours. Designed for graduate students. Seminar on selected topics in sociology of gender. May be repeated for credit. Letter grading.

**253. Politics of Reproduction, Gender, and Family. (4)** Seminar, three hours. Human reproduction and its regulation have long been focus of contentious politics around world and remain topical today. Reproduction refers both to biological and social reproduction; their interdependence shapes policies and practices pertaining to them. Government efforts to influence fertility behavior call attention to one important feature of modern states: political intervention into private life, intimacy, and sexuality. Politics of reproduction refers to intersection between politics and life cycle, or between public sphere and private lives. Expansion of state into bodies and lives of citizens has blurred lines between public and private interests. Exploration of diverse aspects of politics of reproduction, their gendering, and their impact on changing family forms to encourage students to think comparatively and historically about these issues in different contexts and cultures. Letter grading.

**254. Human Capital, Social Capital, and Cultural Capital. (4)** Lecture, three hours. Designed for graduate students. Intellectual history of these concepts, points of difference and similarity among these concepts, current exemplars of research that utilize these concepts, and critical reflection on research traditions. Letter grading.

**M255. Cross-Cultural Perspectives on Gender. (4)** (Same as Gender Studies M255.) Seminar, three hours. How does gender manifest itself in lives of different groups of women in U.S. and abroad? Are universal analytical categories or united feminist movements possible or is gender too different cross-culturally? S/U or letter grading.

**256. Demography. (4)** Lecture, four hours. S/U or letter grading.

**257. Demography of Marriage Formation and Dissolution. (4)** Discussion, three hours. Requisite: course 210A. Extensive and intensive critical examination of major approaches to analysis of marriage formation and dissolution, with focus primarily on demographic literature. S/U or letter grading.

**C258. Talk and Social Institutions. (4)** Lecture, four hours; discussion, one hour. Practices of communication and social interaction in number of major institutional sites in contemporary society. Setting varies but may include emergency services, police and courts, medicine, news interviews, and political oratory. Concurrently scheduled with course CM125. S/U or letter grading.

**260. Economy and Society. Discussion, two hours. (4)** Discussion, two hours. Designed for graduate students. Review and critique of major analytical traditions in economy and society. S/U or letter grading.

**M262. Black Families and Relationships. (4)** (Same as African American Studies M200C.) Seminar, three hours. Evaluation of social, cultural, and historical forces that affect socialization, stability, and interaction in black intimate relationships, beginning with the-

oretical framework from black feminism to analysis of economic and other expectations for partners in cohabiting and other types of unions. Examination of family life for both middle-class and low-income populations. Exploration of notions of black sexuality, including images of hyper-masculinity and femininity within black body and critical interrogation of notions of blackness and authenticity in racial identification. Contribution to greater understanding of black intimate relationships in different contexts, including lesbian and gay identities, Caribbean and other ethnic identities, and interracial intimacies. S/U or letter grading.

**M263. Social Demography of Los Angeles. (4)** (Same as Community Health Sciences M263.) Lecture, three hours. Designed for graduate students. Use of city of Los Angeles to examine major social and demographic factors that characterize cities in the U.S. Examination of role of these factors in affecting health outcomes. Letter grading.

**265. Problems in Organization Theory. (4)** Lecture, four hours. S/U or letter grading.

**266. Selected Problems in Analysis of Conversation. (4)** Lecture, three hours. Requisites: courses 244A, 244B. Variable topics/formats course. Consult instructor for topics and formats to be offered in specific term. May be repeated for credit with topic change. S/U or letter grading.

**268. Selected Problems in Psychoanalytic Sociology. (4)** Discussion, three hours. Recommended preparation: at least one year of methods courses. Selected problems in interpretation of sociology and psychoanalysis, which may be substantive (group development, socialization, culture, deviance, collective behavior) or methodological; latter focuses on clinical fieldwork and experimental use of psychoanalytic and sociological techniques. S/U or letter grading.

**272. Topics in Political Sociology. (4)** Lecture, four hours. S/U or letter grading.

**M275. Contemporary Issues of American Indians. (4)** (Same as American Indian Studies M200C and Anthropology M244P.) Seminar, three hours. Introduction to most important issues facing American Indians as individuals, communities, tribes, and organizations in contemporary world, building on historical background presented in American Indian Studies M200A and cultural and expressive experience of American Indians presented in American Indian Studies M200B. Letter grading.

**278. Sociology of Latin America. (4)** Lecture, one hour; discussion, two hours. Designed for graduate students. Selected topics in sociological study of Latin America. Possible topics include social movements, race and ethnicity, stratification, and social development. Letter grading.

**M280. Trafficking, Gender, Health, and Human Rights. (4)** (Same as Law M577.) Seminar, four hours. Review and critical assessment of diverse literature on international traffic of persons, with emphasis on significance of sociological, legal, and gender aspects of trafficking. Primary focus on trafficking for sex work and blurred lines between discourse on commercial sex trade and trafficking. Additional issues include role of political and economic transition, militarization, health implications of trafficking, trafficking for non-sexual labor, and role of advocacy. S/U or letter grading.

**281. Selected Problems in Mathematical Sociology. (4)** Lecture, three hours. Exploration of some mathematical models of sociological processes. Possible topics include models of small groups, social mobility, kinship relations, organizations, social interaction. S/U or letter grading.

**282. Sociology of Medicine. (4)** Seminar, three hours. Review of major concepts and issues in sociology of medicine. Topics include medicine, culture, and capitalism, professions and power, challenge of managed care, sick role and social control, interactionism and negotiation of sickness, sickness and self, debates over medicalization and demedicalization. Designed as preparation for field examination in sociology of health and medicine and specifically for themes traditionally included under medical sociology/sociology of medicine. S/U or letter grading.

**283. Communication in Medical Care. (4)** Seminar, three hours. Review and development of empirical knowledge about doctor-patient relationship. Analysis of nature and dynamics of routine office visits, with focus on nature and role of norms in regulating doctor-patient conduct, role of expertise and power in doctor-patient relationship, and methodological questions concerning how doctor-patient relationship can be analyzed. S/U or letter grading.

**284. Topics in Mental Health and Illness. (4)** Lecture, two to three hours. Requisite: course M148. Designed for graduate students. S/U or letter grading.

**285A-285Z. Special Topics in Sociology. (4 each)** Seminar, three hours. Designed for graduate students. Seminars on selected current topics of sociological interest. Consult Schedule of Classes for topics and instructors. May be repeated for credit. S/U or letter grading.

**287. Topics in Chinese Society. (4)** Seminar, three hours. Preparation: at least two upper-division courses on China in any social sciences discipline. Introduction to current research questions in Chinese sociology, as well as major themes in study of Chinese society, both historical and contemporary, including demographic, economic, political, and social change before and after 1949. S/U or letter grading.

**289A-289B. Practicum in Conversation Analysis. (2-4)** Requisites: courses 244A, 244B. S/U grading. **289A.** Data Analysis. Laboratory, two hours. Practice in analysis of conversational data. May be repeated for credit. **289B.** Developing Work in Progress. Seminar, three hours. Opportunity to advance research projects in progress and to develop skills of constructive criticism in discussing work of others.

**295. Working Group in Sociology. (1 to 4)** Discussion, two hours. Variable topics, including sociology of gender; ethnography; social networks; race, ethnicity, immigration; and social demography and stratification. Advanced study and analysis of current topics in specialized areas of sociology. Discussion of current research and literature in research specialty of faculty member teaching course. May be repeated for credit. S/U grading.

**C297. Urban and Suburban Sociology. (5)** Seminar, three hours. History and present condition of cities and suburbs in America, with stress on global cities such as New York and Los Angeles, and comparisons to London and Shanghai. Process of suburbanization as it began in early 19th century and still continues. Analysis of city politics, house and architectural styles, crime, urban terror, public housing and ghettos, segregation and integration of neighborhoods, question of gentrification, immigration, urban culture (especially art, museums, and movie and music industries), and environmentalism. Concurrently scheduled with course C191N. Letter grading.

**298. Workshop in Culture and Society. (4)** Seminar, two hours every other week. Interdisciplinary workshop for graduate students and faculty pursuing theory and research in topics related to interplay of culture and society, whether social, literary, or philosophical in nature. S/U grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**M402. Practices of Evaluation in Health Services: Theory and Methodology. (4)** (Same as Health Policy M422.) Lecture, four hours. Requisites: Health Policy 200A, 200B. Introduction to evaluation of health services programs and policies. Exposure to basic theoretical concepts and specific evaluation methodologies and designs. Letter grading.

**495. Supervised Teaching of Sociology. (2)** Seminar, two hours. Preparation: appointment as teaching assistant in Sociology Department. Special course for teaching assistants designed to deal with problems and techniques of teaching introductory sociology. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**595. Directed Research for Master's Paper. (4 to 12)** Tutorial, to be arranged. Directed research for and writing of MA degree paper under guidance of student's MA committee chair. S/U grading.

**596. Directed Individual Study and Research in Sociology. (2 to 12)** Tutorial, to be arranged. S/U grading.

**597. Individual Study for Examinations. (4 to 12)** Tutorial, to be arranged. Preparation for PhD qualifying examinations. S/U grading.

**599. Research in Sociology for PhD Candidates. (4 to 12)** Tutorial, to be arranged. S/U grading.

## SPANISH AND PORTUGUESE

*College of Letters and Science*

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**Spanish and Portuguese**

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Maarten H. van Delden, PhD, *Chair*

## Faculty Roster

### Professors

Adriana J. Bergero, PhD  
Verónica Cortínez, PhD  
John C. Dagenais, PhD  
María (Maite) T. de Zubiaurre, PhD  
Barbara Fuchs, PhD  
Efraín Kristal, PhD  
José Luiz Passos, PhD  
A. Carlos Quicoli, PhD  
Maarten H. van Delden, PhD

### Professors Emeriti

Rubén A. Benítez, PhD  
E. Mayone Dias, PhD  
J. Randal Johnson, PhD  
Gerardo A. Luzuriaga, PhD  
C. Brian Morris, LittD  
C.P. Otero, PhD  
José Pascual Buxó, PhD  
Enrique Rodríguez-Cepeda, PhD  
Paul C. Smith, PhD  
Jesús Torrecilla, PhD

### Associate Professors

Patricia Arroyo Calderón, PhD  
Ji Young Kim, PhD  
Jorge Marturano, PhD

### Assistant Professors

Nohora A. Arrieta Fernández, PhD  
Patrícia S. Lino, PhD  
Victoria E. Mateu, PhD  
Javier Patiño Loira, PhD

### Lecturer SOE

José M. Cruz-Salvadores, PhD, *Emeritus*

### Lecturers

Greg D. Cohen, PhD  
Luz María de la Torre, MA  
Carlota Suhr, PhD

### Adjunct Associate Professor

Jimena N. Rodríguez, PhD

### Adjunct Assistant Professor

Stephen C. Tobin, PhD

## Overview

The Department of Spanish and Portuguese is dedicated to the study and teaching of the languages, literatures, and cultures of the Hispanic heritage in all areas of the world, particularly on the continents of Europe and America. It maintains a strong commitment to the value of original research and professional instruction at all levels of its activities.

Whether studying for the Bachelor of Arts (BA), Master of Arts (MA), or Doctor of Philosophy (PhD) degree, students are given careful guidance in the choice of courses and in the preparation of a study program. The richness of Hispanic culture is amply represented in the extensive range of courses in language, linguistics, and literature. Although the literatures of Spain, Portugal, Brazil, and Spanish America predominate, courses are also offered in Chicano literature. The breadth of courses offered by the department allows undergraduate students to pursue many possible interests and enables graduate students to concentrate in depth in several areas of specialization.

Department courses are primarily designed to serve the five BA programs: BA in Spanish, BA in Spanish and Community and Culture, BA in Spanish and Linguistics, BA in Spanish and Portuguese, and BA in Portuguese and Brazilian Studies; as well as to prepare students for its three graduate programs: MA in Spanish, MA in Portuguese, and PhD in Hispanic Languages and Literatures. The courses are also functionally supportive of such interdepartmental programs as the BA, MA, and PhD programs in Chicana and Chicano Studies, BA and MA programs in Latin American Studies, and MA and PhD programs in Comparative Literature.

## Undergraduate Policies

### Language Acquisition Courses

Beginning- and intermediate-level Spanish language courses are offered for Spanish second language learners and Spanish heritage learners. Beginning- and intermediate-level Portuguese language courses are offered for second language learners and learners proficient in another Romance language.

The approach is proficiency-oriented, communicative, and task-based. Students develop communicative competence in all four skill areas (listening, speaking, reading, and writing). Classes are conducted completely in Spanish or Portuguese.

Language courses are delivered in a blended form; students are required to attend face-to-face class meetings and also complete two

hours per week of work assigned, online. The two hours of online work are included in the required contact hours for the course.

Students with one or more years of high school Spanish or Portuguese who plan to enroll in Spanish 1 through 27 should take the departmental placement examination. Consult the [Schedule of Classes](#) or the department office for more information.

No credit is allowed for completing a less advanced course after successful completion of a more advanced course in Spanish and Portuguese grammar and/or composition.

## Undergraduate Majors

### Spanish BA

#### Capstone Major

The Spanish major is a designated capstone major. Seniors complete a capstone seminar that provides unique opportunity to work closely with a faculty member on a focused topic of research. Through their capstone work students are expected to demonstrate mastery of the Spanish language, along with specific skills and expertise acquired in earlier coursework. Additionally, students acquire a working knowledge of scholarly discourse relative to a specialized topic, conceive and execute an associated project, and engage with a community of scholars, presenting their work to peers and helping to further peers' work through discussion and critique.

### Learning Outcomes

The Spanish major has the following learning outcomes:

- Demonstrated written and oral mastery of the Spanish language
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Identification and analysis of appropriate primary sources
- Conception and execution of a project that identifies and engages with a specialized topic
- Working knowledge of scholarly discourse relative to a specialized topic
- Engagement with peers through presentation, discussion, and critique of student work

### Entry to the Major

#### Transfer Students

Transfer applicants to the Spanish major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of Spanish, one Spanish civilization course, and one Spanish American civilization course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Spanish 25 or 27, 42, 44.

### The Major

*Required:* (1) Two core courses (Spanish 119 and 120), (2) eight upper-division Spanish elective courses in literature, culture, linguistics, media, service learning, or interdisciplinary studies, up to three of which may be from an outside department that deals with Spain or Spanish America and have been approved by the undergraduate adviser, and (3) one senior capstone seminar (Spanish 191C).

### Honors Program

Portuguese 198A and Spanish 198A are 4-unit courses in which students research and prepare a draft of a thesis on a selected topic; Portuguese 198B and Spanish 198B are 2-unit courses in which students complete the final thesis draft of approximately 25 to 30 pages. Approval of the honors thesis by the faculty mentor is the final requirement for departmental honors. Portuguese 198A-198B and Spanish 198A-198B may not be applied toward the majors.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade and passed with a grade of C or better prior to beginning upper-division work in the major.

### The Major

Each course must be taken for a letter grade and passed with a grade of C or better.

By petition, and after consultation with the undergraduate adviser, up to three 4-unit Spanish 197 or 199 courses may be applied toward the major.

### Honors Program

The departmental honors program is open to majors who have completed a minimum of six upper-division major courses with a 3.7 grade-point average or better in those six courses. Eligibility is verified by the departmental counselor. On the basis of their coursework and special interests, students then consult with a faculty member in that field and formulate a research project that they pursue under the faculty member's guidance through Portuguese 198A-198B or Spanish 198A-198B.

## Spanish and Community and Culture BA

### Capstone Major

The Spanish and Community and Culture major is a designated capstone major. Students participate in community-based experiential learning courses coupled with elective and adjunct courses. Reflective journals, final projects, and in-class presentations are required. Through their capstone work, students should have mastery of the Spanish language, ability to conduct and interpret research to determine

the needs of specific communities, critical understanding and ability to apply theories within a service context, sensitivity to diversity and cultural differences, and ability to perform scholarly presentations that tie current issues to research and theory.

## Learning Outcomes

The Spanish and Community and Culture major has the following learning outcomes:

- Demonstrated written and conversational mastery of the Spanish language
- Conduct and interpret research to determine the needs of specific communities
- Demonstrated critical understanding of, and ability to apply, theories within a service context
- Demonstrated sensitivity to diversity and cultural differences
- Performance of scholarly presentations that tie current issues to research and theory
- Articulation of the value of civic engagement

## Entry to the Major

### Transfer Students

Transfer applicants to the Spanish and Community and Culture major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of Spanish, one Spanish civilization course, and one Spanish American civilization course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Spanish 25 (or 27), M35 (or Portuguese M35), 42, 44.

### The Major

*Required:* (1) Spanish 100A or 100B, 119; (2) three elective Spanish literature, culture, linguistics, or media studies courses selected from 130, 135, 140, 150, 155, 160, 170, 175, 180, 195; (3) two interdisciplinary studies courses selected from Chicana/o and Central American Studies 100XP, CM106, M119, 120, M121, M122, 131, M144, 149, 181, Sociology M155; (4) three capstone community-based and experiential learning courses (15 units) selected from Spanish M165XP (required course) and two Spanish M172XP (may be repeated with topic change).

### Honors Program

Portuguese 198A and Spanish 198A are 4-unit courses in which students research and prepare a draft of a thesis on a selected topic; Portuguese 198B and Spanish 198B are 2-unit courses in which students complete the final thesis draft of approximately 25 to 30 pages. Approval of the honors thesis by the faculty mentor is the final requirement for departmental honors. Portuguese 198A-198B and Spanish 198A-198B may not be applied toward the majors.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade and passed with a grade of C or better prior to beginning upper-division work in the major.

### The Major

Each course must be taken for a letter grade and passed with a grade of C or better.

A minimum of 46 units applied toward the major requirements must be in addition to units applied toward major or minor requirements in another department or program.

By petition, and after consultation with the undergraduate adviser, up to three 4-unit Spanish 197 or 199 courses may be applied toward the major.

### Honors Program

The departmental honors program is open to majors who have completed a minimum of six upper-division major courses with a 3.7 grade-point average or better in those six courses. Eligibility is verified by the departmental counselor. On the basis of their coursework and special interests, students then consult with a faculty member in that field and formulate a research project that they pursue under the faculty member's guidance through Portuguese 198A-198B or Spanish 198A-198B.

## Spanish and Linguistics BA

### Learning Outcomes

The Spanish and Linguistics major has the following learning outcomes:

- Demonstrated technical mastery of the Spanish language, including pronunciation (phonetics and phonology), history (historical linguistics), and structure (syntax)
- Demonstration of how to do basic spoken language research in Spanish linguistics, emphasizing Latin American Spanish and Chicano Spanish or Los Angeles vernacular
- Identification and analysis of appropriate primary linguistic sources within the generative framework
- Working knowledge of scholarly discourse in a specialized Spanish linguistics topic (phonology, syntax, and historical linguistics)
- Conception and execution of a project that identifies and engages with a specialized Spanish linguistics topic as a result of the practical part of the courses on phonetics and phonology and on syntax

## Entry to the Major

### Transfer Students

Transfer applicants to the Spanish and Linguistics major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of Spanish, one introduction to linguistics course, and one Spanish or Spanish American civilization course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.



## Requirements

### Preparation for the Major

*Required:* Linguistics 20 (with grade of B– or better), Spanish 25 or 27, M35 (or Portuguese M35), 42 or 44.

### The Major

*Required:* (1) Spanish 100A, 100B, 119, Linguistics 103, 120A, 120B, (2) one course from Linguistics 160 or 165A or 165B, and (3) four upper-division Spanish electives, two of which must be from Spanish 160.

### Honors Program

Portuguese 198A and Spanish 198A are 4-unit courses in which students research and prepare a draft of a thesis on a selected topic; Portuguese 198B and Spanish 198B are 2-unit courses in which students complete the final thesis draft of approximately 25 to 30 pages. Approval of the honors thesis by the faculty mentor is the final requirement for departmental honors. Portuguese 198A-198B and Spanish 198A-198B may not be applied toward the majors.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade and passed with a grade of C or better prior to beginning upper-division work in the major, except Linguistics 20, which must be passed with a grade of B– or better.

### The Major

Each course must be taken for a letter grade and passed with a grade of C or better.

### Honors Program

The departmental honors program is open to majors who have completed a minimum of six upper-division major courses with a 3.7 grade-point average or better in those six courses. Eligibility is verified by the departmental counselor. On the basis of their coursework and special interests, students then consult with a faculty member in that field and formulate a research project that they pursue under the faculty member's guidance through Portuguese 198A-198B or Spanish 198A-198B.

## Spanish and Portuguese BA

### Learning Outcomes

The Spanish and Portuguese major has the following learning outcomes:

- Demonstrated oral, aural, and written mastery of the Spanish and Portuguese languages
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Conception and execution of research projects that identify and engage with a specialized topic
- Identification and analysis of appropriate primary sources
- Working knowledge of scholarly discourse on a specialized topic
- Engagement with peers through presentation, discussion, and critique of student work

## Entry to the Major

### Transfer Students

Transfer applicants to the Spanish and Portuguese major with 90 or more units must complete the following introductory courses prior to admission to UCLA: two years of Spanish, one year of Portuguese, one Spanish civilization course or one Spanish American civilization course, and one Brazilian culture course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Portuguese 25 or 26 or 27 (27 recommended), M35 (or Spanish M35), 46, Spanish 25 or 27, 42 or 44.

### The Major

*Required:* (1) One course from Spanish 100A or 100B and one course from Portuguese 100A or 100B, (2) Spanish 119, 120, Portuguese 130A or 130B, (3) six 4- or 5-unit upper-division elective courses, two of which must be in Spanish and three of which must be from the Portuguese offerings, including those taught in English. Only upper-division courses taught in the target language may be applied toward the major, except the Portuguese courses taught in English.

### Honors Program

Portuguese 198A and Spanish 198A are 4-unit courses in which students research and prepare a draft of a thesis on a selected topic; Portuguese 198B and Spanish 198B are 2-unit courses in which students complete the final thesis draft of approximately 25 to 30 pages. Approval of the honors thesis by the faculty mentor is the final requirement for departmental honors. Portuguese 198A-198B and Spanish 198A-198B may not be applied toward the majors.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade and passed with a grade of C or better.

### The Major

Each course must be taken for a letter grade and passed with a grade of C or better prior to beginning upper-division work in the major.

By petition, and after consultation with the undergraduate adviser, up to three 4-unit Portuguese 197, 199, Spanish 197, or 199 courses may be applied toward the major.

### Honors Program

The departmental honors program is open to majors who have completed a minimum of six upper-division major courses with a 3.7 grade-point average or better in those six courses. Eligibility is verified by the departmental counselor. On the basis of their coursework and special interests, students then consult with a faculty member in that field and formulate a re-

search project that they pursue under the faculty member's guidance through Portuguese 198A-198B or Spanish 198A-198B.

## Portuguese and Brazilian Studies BA

### Study Abroad

Students are encouraged to spend up to one year in a Portuguese-speaking country to study in a university or conduct research. Appropriate credit may be granted in accordance with the individual program, arranged in consultation with the undergraduate faculty adviser in Portuguese. Proposals must be submitted in advance in writing and must be approved by the department.

### Learning Outcomes

The Portuguese and Brazilian Studies major has the following learning outcomes:

- Demonstrated oral, aural, and written mastery of the Portuguese language
- Demonstrated specific skills and expertise, including research, analysis, and writing
- Conception and execution of research projects that identify and engage with a specialized topic
- Identification and analysis of appropriate primary sources
- Working knowledge of scholarly discourse relative to a specialized topic
- Engagement with peers through presentation, discussion, and critique of student work

## Entry to the Major

### Transfer Students

Transfer applicants to the Portuguese and Brazilian Studies major with 90 or more units must complete the following introductory courses prior to admission to UCLA: one year of Portuguese, one nature of language course, one Portuguese civilization course or one Brazilian civilization course, and one Brazilian culture course.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

## Requirements

### Preparation for the Major

*Required:* Portuguese 25 or 26 or 27 (27 recommended), 46.

### The Major

*Required:* Ten upper-division courses (45 units minimum), including Portuguese 100A or 100B, 130A or 130B, and seven elective courses selected from 100A through 199.

### Honors Program

Portuguese 198A and Spanish 198A are 4-unit courses in which students research and prepare a draft of a thesis on a selected topic; Portuguese 198B and Spanish 198B are 2-unit courses in which students complete the final thesis draft of approximately 25 to 30 pages.



Approval of the honors thesis by the faculty mentor is the final requirement for departmental honors. Portuguese 198A-198B and Spanish 198A-198B may not be applied toward the majors.

## Policies

### Preparation for the Major

Each course must be taken for a letter grade and passed with a grade of C or better prior to beginning upper-division work in the major.

### The Major

Out of the seven elective courses, three courses from outside the department that focus on Brazil, Portugal, or Lusophone Africa may be applied toward the major with approval of the undergraduate adviser. A minimum of five out of the seven elective courses must be taken in Portuguese.

Each course must be taken for a letter grade and passed with a grade of C or better.

By petition, and after consultation with the undergraduate adviser, up to three 4-unit Portuguese 197 or 199 courses may be applied toward the major.

### Honors Program

The departmental honors program is open to majors who have completed a minimum of six upper-division major courses with a 3.7 grade-point average or better in those six courses. Eligibility is verified by the departmental counselor. On the basis of their coursework and special interests, students then consult with a faculty member in that field and formulate a research project that they pursue under the faculty member's guidance through Portuguese 198A-198B or Spanish 198A-198B.

### Double Majors

Through judicious use of electives, students may find it possible to secure the BA degree with two complete majors (e.g., Portuguese/Spanish, Portuguese/History, Portuguese/Sociology, etc.). Interested students should consult with the undergraduate adviser in Portuguese as early as possible in their BA program.

## Undergraduate Minors

### Mexican Studies Minor

The Mexican Studies minor allows students with an interest in Mexico to augment their major programs with courses that expose them to the history, literature, and culture of Mexico. Given Southern California's proximity to Mexico, the demographics of Los Angeles, and the shared history of Mexico and the Southwest, the minor is a natural complement to many majors.

### Admission

To enter the minor, students must have an overall grade-point average of 2.0 or better and must complete or show proficiency equivalent to two years of college-level Spanish. A petition

to declare the minor should be filed with the undergraduate counselor in 5314 Rolfe Hall.

### The Minor

*Required Lower-Division Courses (8 to 9 units):* Spanish 25 or 27, and one course from History 8A, 8B, 8C, or Spanish 44.

*Required Upper-Division Courses (20 to 22 units):* Three Mexican culture and literature courses selected from Spanish 135 through 180 in consultation with the undergraduate adviser and two courses from Anthropology 114P, Chicana/o and Central American Studies M102, M108A, 120, M125, M132, 142, 172, 184, Ethnomusicology M108A, History 157B, 160B.

### Policies

By petition and after consultation with the undergraduate adviser, one 4-unit 197 or 199 course may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade and passed with a grade of C or better. Students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Portuguese and Brazilian Studies Minor

### Admission

To enter the Portuguese and Brazilian Studies minor, students must have an overall grade-point average of 2.0 or better and must complete Portuguese 27 or equivalent. A petition to declare the minor should be filed with the undergraduate counselor in 5314 Rolfe Hall.

### The Minor

*Required Lower-Division Courses (9 units):* Portuguese 25 or 26 or 27 (27 recommended), and 46.

*Required Upper-Division Courses (20 units):* Three courses selected from Portuguese 100A through 199, and two upper-division courses on a Brazilian topic.

### Policies

Courses may be taken in Portuguese or English but must be clearly related to an aspect of Brazilian studies.

Only one 4-unit Portuguese 197 or 199 course may be applied toward the minor.

By petition, up to two upper-division courses on Portugal or Brazil may be taken in other departments and applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade and passed with a grade of C or better.

Students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Spanish Minor

### Admission

To enter the Spanish minor, students must have an overall grade-point average of 2.0 or better and must complete or show proficiency equivalent to two years of college-level Spanish. A petition to declare the minor should be filed with the undergraduate counselor in 5314 Rolfe Hall.

### The Minor

*Required Lower-Division Courses (9 units):* Spanish 25 or 27, and 42 or 44.

*Required Upper-Division Courses (20 to 22 units):* Spanish 119 and four Spanish literature, culture, linguistics, service learning, or media studies courses.

### Policies

By petition and after consultation with the undergraduate adviser, three 4-unit 197 or 199 courses may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade and passed with a grade of C or better. Students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Spanish Linguistics Minor

### Admission

To enter the Spanish Linguistics minor, students must have an overall grade-point average of 2.0 or better and must complete or show proficiency equivalent to two years of college-level Spanish. A petition to declare the minor should be filed with the undergraduate counselor in 5314 Rolfe Hall.

### The Minor

*Required Lower-Division Courses (9 units):* Spanish 25 or 27, M35 (or Portuguese M35).

*Required Upper-Division Courses (20 to 21 units):* Spanish 100A, 100B, and three upper-division Spanish electives, two of which must be from Spanish 160.

### Policies

By petition and after consultation with the undergraduate adviser, one 4-unit 197 or 199 course may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade and passed with a grade of C or better. Students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Hispanic Languages and Literatures CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Portuguese MA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Spanish MA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Indigenous Languages of the Americas

### Lower-Division Courses

**1. Elementary Zapotec. (4)** Lecture, five hours. Introduction to Zapotec language of Tlacolula Valley of Oaxaca. P/NP or letter grading.

**2. Elementary Zapotec. (4)** Lecture, five hours. Enforced requisite: course 1. Introduction to Zapotec language of Tlacolula Valley of Oaxaca. P/NP or letter grading.

**3. Elementary Zapotec. (4)** Lecture, five hours. Enforced requisite: course 2. Introduction to Zapotec language of Tlacolula Valley of Oaxaca. P/NP or letter grading.

**5A-5B-5C. Elementary Nahuatl. (4-4-4)** (Formerly numbered M5A-M5B-M5C.) Lecture, five hours. Course 5A is enforced requisite to 5B, which is enforced requisite to 5C. Introduction to Aztec language of central Mexico. Coverage of basic Nahuatl grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**15A-15B-15C. Intermediate Nahuatl. (4-4-4)** (Formerly numbered M15A-M15B-M15C.) Lecture, four hours. Enforced requisites: courses 5A, 5B, 5C. Course 15A is enforced requisite to 15B, which is enforced requisite to 15C. Taught primarily in Nahuatl. Examination of Nahuatl (Aztec) language of central Mexico at intermediate level. Coverage of Nahuatl grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**17. Intensive Elementary Quechua. (12)** Lecture, 15 hours; laboratory, five hours. Intensive course equivalent to courses 18A, 18B, 18C. Language of Incas and its present-day dialects, as spoken in Andean South America. Offered in summer only. Letter grading.

**18A-18B-18C. Elementary Quechua. (4-4-4)** Lecture, five hours. Course 18A is enforced requisite to 18B, which is enforced requisite to 18C. Language of Incas and present-day Quechua language, as spoken in Andean South America. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**115A-115B-115C. Advanced Nahuatl. (4-4-4)** (Formerly numbered M115A-M115B-M115C.) Lecture, four hours. Requisites: courses 15A, 15B, 15C. Course 115A is requisite to 115B, which is requisite to 115C. Taught primarily in Nahuatl. Examination of Nahuatl (Aztec) language of central Mexico at intermediate level. Coverage of Nahuatl grammar, with equal emphasis on reading, writing, conversation, and comprehension. P/NP or letter grading.

**119A-119B-119C. Advanced Quechua. (4-4-4)** Lecture, five hours. Requisite: course 18C. Course 119A is requisite to 119B, which is requisite to 119C. Readings in Quechua. Dialectal and stylistic variation. Discussions mainly in Quechua. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Variable Topics Research Seminars: Indigenous Languages. (2 or 4)** Seminar, three hours. Research seminars on selected topics on various indigenous languages. Reading, discussion, and development of culminating project. May be repeated for credit with topic change. P/NP or letter grading.

## Graduate Course

**596. Directed Studies in Quechua. (1 to 8)** Tutorial, to be arranged. Requisites: courses 119A, 119B, 119C. Directed individual study or research in Quechua. Four units may be applied toward MA course requirements. May be repeated for credit. S/U grading.

## Portuguese

### Lower-Division Courses

**1. Elementary Portuguese. (4)** Lecture, three hours; laboratory, two hours. Taught in Portuguese. Laboratory is online. Introductory Portuguese language and culture course that is proficiency-oriented, communicative, and task-based to help develop communicative competence in four skill areas (listening, speaking, reading, and writing), as well as cultural competence. P/NP or letter grading.

**2. Elementary Portuguese. (4)** Lecture, three hours; laboratory, two hours. Taught in Portuguese. Laboratory is online. Introductory Portuguese language and culture course that is proficiency-oriented, communicative, and task-based to help develop communicative competence in four skill areas (listening, speaking, reading, and writing), as well as cultural competence. P/NP or letter grading.

**3. Intermediate Portuguese. (4)** Lecture, three hours; laboratory, two hours. Taught in Portuguese. Laboratory is online. Intermediate Portuguese language and culture course that is proficiency-oriented, communicative, and task-based to help develop communicative competence in four skill areas (listening, speaking, reading, and writing), as well as cultural competence. P/NP or letter grading.

**8A. Portuguese Conversation. (2)** Lecture, three hours. Requisite: course 1, 11A, Portuguese Language Assessment Interview, or enrollment in any Portuguese course. Designed to help beginner and intermediate students of Portuguese language improve their conversation skills through discussions, presentations, participation in events, and other communicative situations. Among other elements of speech, use of formal and informal speaking styles. Use of appropriate vocabulary to discuss issues relevant to students' lives and to Afro-Luso-Brazilian culture. P/NP or letter grading.

**8B. Portuguese Conversation. (2)** Discussion, three hours. Enforced requisite: course 3 with grade of B or better. P/NP or letter grading.

**11A-11B. Intensive Portuguese. (5-5)** Lecture, four hours; laboratory, two hours. Taught in Portuguese. Laboratory is online. Accelerated course designed only for students with proficiency in another Romance language. P/NP or letter grading.

**13. Intensive Introductory Portuguese Language and Culture. (12)** Lecture, 20 hours; laboratory, three hours. Intensive introduction to Portuguese language and culture equivalent to courses 1, 2, and 3, and 11A and 11B. Proficiency-oriented, communicative and task-based approach intended to facilitate communicative competence in four language skills areas: listening, speaking, reading, and writing. Development of cultural awareness of heterogeneous Portuguese-speaking community in America, Europe, and Africa. Intensive accelerated course designed to help students increase their ability to communicate in Portuguese. Offered in summer only. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**25. Advanced Portuguese. (4)** Lecture, three hours. Enforced requisite: course 3 or 11B. P/NP or letter grading.

**25A. Advanced Portuguese: Summer Course. (4)** Lecture, 20 hours. Enforced requisite: course 3 or 11B. Advanced Portuguese course with cultural activities, field trips, and luncheons. Offered in summer only. P/NP or letter grading.

**26. Language and Popular Culture. (4)** Lecture, three hours. Requisite: course 3 or 11B. Development of speaking, reading, and writing skills. Structured in thematic units, with songs, videos, and specific vocabulary emphasizing questions of Brazilian cultural identity. Letter grading.

**26A. Language and Popular Culture: Summer Course. (4)** Lecture, 20 hours. Enforced requisite: course 3 or 11B. Development of speaking, reading, and writing skills. Structured in thematic units, with songs, videos, and specific vocabulary emphasizing questions of Brazilian cultural identity. Includes cultural activities, field trips, and luncheons. Offered in summer only. P/NP or letter grading.

**27. Writing Studies: Afro-Luso-Brazilian World. (4)** Lecture, three hours. Requisite: course 3 or 11B. Further development of communicative skills, especially writing. Discussions and activities increase knowledge and ability to comprehend variety of forms of cultural production in Portuguese language. Students continue to acquire cultural competence. Introduction to study of literature, with specific focus on themes and topics pertinent to Lusophone world. P/NP or letter grading.

**27A. Advanced Composition and Style: Summer Course. (4)** Lecture, 20 hours. Enforced requisite: course 3 or 11B. Practice in writing Portuguese with appropriate vocabulary, syntactical structures, and stylistic patterns. Includes cultural activities, field trips, and luncheons. Offered in summer only. P/NP or letter grading.

**M35. Spanish, Portuguese, and Nature of Language. (5)** (Same as Spanish M35.) Lecture, three hours; discussion, one hour. Introduction to language study within context of Romance languages, focusing on Spanish and Portuguese. Nature of language: structure, diversity, evolution, social and cultural settings, literary uses. Study of language and its relation to other areas of human knowledge. P/NP or letter grading.

**40A-40B. Portuguese, Brazilian, and African Literature in Translation. (4-5)** Lecture. Reading and discussion of selected works in translation. Papers and examinations in English. P/NP or letter grading. **40A.** Portuguese and Portuguese-African Literature. Lecture, three hours; **40B.** Brazilian Literature. Lecture, four hours.

**46. Brazil and Portuguese-Speaking World. (5)** Lecture, four hours; discussion, one hour (when scheduled). Taught in English. Topical analysis of cultural history of Brazil in context of Portuguese-speaking world, with emphasis on comparative, trans-Atlantic relations, social development, and artistic manifestations. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and en-

rolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100A. Phonology and Morphology. (4)** Lecture, four hours. Enforced requisite: course 27. Analysis of phonetic, phonemic, and morphological systems of Portuguese. P/NP or letter grading.

**100B. Syntax. (4)** Lecture, four hours. Enforced requisite: course 27. Review of patterns of Portuguese language. P/NP or letter grading.

**M122. Foundations in Visual Culture in Iberian, Latin American, and Luso-Brazilian Worlds. (4)** (Same as Spanish M122.) Lecture, four hours. Requisite: course 25 or 26 or 27 or Spanish 25 or 27. Taught in English. Addresses specificities of visual culture in Spanish- and Portuguese-speaking worlds. Through critical engagement with wide range of visual materials—from 16th-century maps of Americas to YouTube videos of street protests in Chile; from Modernist architectural designs for new national capitals to telenovelas and colonial photographs; and everything in between—introduction to practices, processes, objects of study, and interdisciplinary critical frameworks of field of visual culture studies. By examining manifestations of visual culture from Iberian, Latin American, and Luso-Brazilian contexts, students gain culturally specific foundations of visual knowledge and skills of visual literacy. P/NP or letter grading.

**130A-130B. Introduction to Literature in Portuguese. (4-4)** Lecture, four hours. Requisite: course 25 or 26 or 27. Introduction to principal themes, currents, and authors from Brazil in context of Portuguese-speaking world. P/NP or letter grading.

**141A. Literature and Film in Portuguese. (4)** Lecture, four hours. Taught in English. Study of intertextuality and dialogism, interactions between literary and cinematic fields, question of fidelity, and equivalents between literary and cinematic expression in Portuguese-speaking world. May be repeated for credit with topic change. P/NP or letter grading.

**141B. Film, Television, and Society in Brazil. (4)** Lecture, four hours. Taught in English. Study of development, evolution, and impact of film and television in Brazil against backdrop of broader social, historical, and cultural contexts. May be repeated for credit. P/NP or letter grading.

**141C. Documentary Film. (4)** Lecture, four hours. Taught in English. Overview of documentary film production in Portuguese-speaking world, with special focus on period since 1985. May be repeated for credit with topic change. P/NP or letter grading.

**142A. Brazil and Its Culture. (4)** Lecture, four hours. Taught in English. Exploration of roots of contemporary Brazil through study of broad chronological periods from Portuguese colonization to present and how they shaped idea of Brazilian exceptionalism, racial mixture as source of national identity, and lusotropicalism and its influence on Brazilian historiography. May be repeated for credit with topic change. P/NP or letter grading.

**142B. Brazil and Portugal in Comparative Perspective. (4)** Lecture, four hours. Taught in English. Study of social and cultural links between Portugal and Brazil, with emphasis on issues of migration, dialogue, and contention in historical context. May be repeated for credit with topic change. P/NP or letter grading.

**M142C. Travel Narratives, Testimony, Autobiography. (4)** (Formerly numbered 142C.) (Same as Comparative Literature M142.) Lecture, four hours. Taught in English. Exploration of travel, memory, and narrative in Portuguese-speaking world. Primary and secondary texts depict issues of displacement, cultural contact, and assimilation. Overview of connections among Portuguese-speaking cultures. May be repeated for credit with topic change. P/NP or letter grading.

**143A. Colony, Intellectuals, and History. (4)** Lecture, four hours. Enforced requisite: course 27. Investigation of way that Brazilian maritime expansion from 15th to early 19th century was represented and inter-

preted in writings from across empire. May be repeated for credit with topic change. P/NP or letter grading.

**143B. Transatlantic Literature in Portuguese. (4)** Lecture, four hours. Enforced requisite: course 27. Study of modern relations between Portugal and Portuguese-speaking world in literature and arts. May be repeated for credit with topic change. P/NP or letter grading.

**143C. Modernism, Modernity, and Identity. (4)** Lecture, four hours. Requisite: course 25 or 26 or 27. Examination of concepts and practice of modernism in Portuguese-speaking world, with primary focus on 1920s. Reading and discussion, with emphasis on sociohistorical context, relations with European avant-garde, modernist poetics and polemics, and search for national identity as expressed in period's poetry and prose. May be repeated for credit with topic change. P/NP or letter grading.

**143D. Contemporary Literature in Portuguese. (4)** Lecture, four hours. Requisite: course 25 or 26 or 27. Exploration of connections between literatures of Angola, Brazil, and Portugal against background of globalization and Internet. May be repeated for credit with topic change. P/NP or letter grading.

**175. Topics in Creative Writing and Literary Translation. (4)** Seminar, three hours. Requisite: course 25 or 26 or 27. Exploration of art of translation or creative writing. Guest speakers or instructors include professional literary translators, poets, novelists, playwrights, and filmmakers who discuss theory, methodology, and practice of their art. May be repeated for credit with topic change. P/NP or letter grading.

**180. Topics in Visual Culture. (4)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: Portuguese 25 or 26 or 27. Study of visual knowledge production in Latin America and Iberia as complex relation between visual subjects, practices, and representation in Latin American, Afro-Luso-Brazilian, and Iberian contexts. Objects of analysis may include architecture and urban design, digital media and other technologies, documentaries, fashion, fictional and experimental films, graphic novels and other media, maps and cartography, photography, plastic arts, and art history, theater and performance, video, among others. May be repeated four times for credit with topic change. P/NP or letter grading.

**187FL. Special Studies: Readings in Portuguese. (2)** Seminar, two hours. Requisite: course 27. Students must be concurrently enrolled in affiliated main course. Additional work in Portuguese to augment work assigned in main course, including reading and writing assignments. May be repeated for credit. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191. Undergraduate Variable Topics Seminars: Portuguese. (4)** Seminar, three hours. Requisite: course 25 or 26 or 27. Research seminar on selected topics in Portuguese. Reading, discussion, and development of culminating project. Consult Schedule of Classes or department counselor for topic to be offered in specific term. May be repeated for credit. P/NP or letter grading.

**195. Community Internships in Portuguese. (4)** Tutorial, two hours; fieldwork, eight hours. Requisite: course 25 or 26 or 27. Limited to juniors/seniors. Community-engaged learning is teaching and learning strategy that integrates meaningful community service

with instruction and critical reflection to enrich the learning experience, teach civic responsibility, and strengthen communities. Students use cultural and linguistic knowledge acquired in classes and research in real-world setting through 8-10 hours per week of volunteer work in on- or off-campus organization or unit serving Brazilian and Portuguese-speaking community. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Portuguese. (2 to 4)** Tutorial, to be arranged. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. Eight units of courses 197 and/or 199 may be applied toward major requirements. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**198A-198B. Senior Honors Research in Portuguese I, II. (4-2)** Tutorial, to be arranged. Preparation: completion of minimum of six upper-division major core courses with 3.7 grade-point average. Course 198A is enforced requisite to 198B. Limited to juniors/seniors. Development and completion of honors thesis under direct supervision of faculty member. May not be applied toward major requirements. Individual contract required. Letter grading.

**199. Directed Research in Portuguese. (2 to 4)** Tutorial, to be arranged. Requisite: course 27. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper required. Eight units of courses 197 and/or 199 may be applied toward major requirements. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M200. Research Resources. (4)** (Same as Spanish M200.) Lecture, three hours. Identification and use of research resources for graduate students.

**M201A-M201B. Literary Theory and Criticism. (4-4)** (Same as Spanish M201A-M201B.) Lecture, three hours. Definition, discussion, and application of main currents of contemporary literary theory and criticism. Letter grading.

**202. Synchronic Morphology and Phonology. (4)** Lecture, three hours. Study of theoretical synchronic linguistics as applied to Portuguese.

**204A-204B. Generative Grammar. (4-4)** Lecture, three hours. Course 204A is requisite to 204B. Generative approach to the Portuguese language, with some consideration of bearing of syntax, semiology, and phonology on style, metaphor, and meter.

**M205A-M205B. Development of Portuguese and Spanish Languages. (4-4)** (Same as Spanish M205A-M205B.) Lecture, three hours. Intensive study of historical development of Portuguese and Spanish languages from their origin in spoken Latin.

**224. Early Portuguese Literature. (4)** Lecture, three hours. Enforced requisite: course 27. Study of main genres of medieval Portuguese and Galician literature through representative works. S/U or letter grading.

**225. Camões and Portuguese Renaissance. (4)** Lecture, three hours. Enforced requisite: course 27. Study of main genres of Renaissance Portuguese literature, with particular emphasis on works of Luis de Camões. S/U or letter grading.

**226. Baroque and Neoclassical Portuguese Literature. (4)** Lecture, three hours. Enforced requisite: course 27. Study of main genres of baroque and neoclassical Portuguese literature through representative works. S/U or letter grading.

**227. 19th-Century Portuguese Literature. (4)** Lecture, three hours. Enforced requisite: course 27. Study of principal features through representative works. May be repeated for credit with topic change. S/U or letter grading.

**228. Post-Romanticism and Naturalism in Portuguese Literature. (4)** Lecture, three hours. Enforced requisite: course 27. Study of principal features through representative works. S/U or letter grading.

**229. 20th-Century Portuguese Literature. (4)** Lecture, three hours. Enforced requisite: course 27. Study of representative trends and authors. May be repeated for credit with topic change. S/U or letter grading.

**231. Colonial Brazilian Literature and Culture. (4)** Lecture, three hours. Enforced requisite: course 27. Study of most important authors to 1830. May be repeated for credit with topic change. S/U or letter grading.

**232. 19th-Century Brazilian Literature and Culture. (4)** Lecture, three hours. Study of representative trends and authors. May be repeated for credit with topic change. S/U or letter grading.

**233. Machado de Assis. (4)** Lecture, three hours. Study of selected works by Joaquim Maria Machado de Assis. S/U or letter grading.

**234. Brazilian Modernism. (4)** Lecture, three hours. Enforced requisite: course 27. Study of principal characteristics of Brazilian modernism through representative works. S/U or letter grading.

**235. 20th-Century Brazilian Literature. (4)** Lecture, three hours. Enforced requisite: course 27. Study of representative trends and authors. May be repeated for credit with topic change. S/U or letter grading.

**M251A-M251B. Studies in Galegan-Portuguese and Old Spanish. (4-4)** (Same as Spanish M251A-M251B.) Lecture, two hours. Study of problems related to historical development of Galegan-Portuguese and Old Spanish. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**252. Studies in Early Portuguese Literature. (4)** Discussion, two hours. S/U or letter grading.

**253. Studies in Modern Portuguese Literature. (4)** Discussion, two hours. S/U or letter grading.

**254. Studies in Early Brazilian Literature. (4)** Discussion, two hours. S/U or letter grading.

**255. Studies in Modern Brazilian Literature. (4)** Discussion, two hours. S/U or letter grading.

**256A-256B. Studies in Portuguese Linguistics. (4-4)** Lecture, two hours. Study of problems in analysis and description of contemporary Portuguese language. S/U or letter grading.

**290. Special Topics. (4)** Discussion, two hours. Designed for graduate students. Consult Schedule of Classes or department counselor for topics to be offered in a specific term. S/U or letter grading.

**296. Graduate Research Group. (2)** Research group meeting, two hours. Limited to graduate students. Designed to bring together graduate students in seminar setting with one or more faculty members to discuss and critique individual research projects, especially dissertation research. S/U grading.

**370. Teaching Portuguese in Secondary School. (4)** Discussion, three hours. Designed for future teachers in this field. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**596. Directed Individual Study or Research. (4 or 8)** Tutorial, to be arranged. Study or research in areas or subjects not offered as regular courses. No more than 8 units may be applied toward MA course requirements. S/U or letter grading.

**597. Preparation for Graduate Examinations. (4 to 12)** Tutorial, to be arranged. Preparation: official acceptance of candidacy by department. Individual preparation for MA comprehensive examination or PhD qualifying examinations. May be taken only once for each degree examination and only in term that comprehensive or qualifying examinations are to be taken. S/U grading.

**598. Research for MA Thesis. (4 to 12)** Tutorial, to be arranged. Research in preparation of MA thesis. S/U grading.

**599. Research for PhD Dissertation. (4 to 12)** Tutorial, to be arranged. Limited to students who have passed PhD qualifying examinations. Research for and preparation of PhD dissertation. S/U grading.

## Spanish

### Lower-Division Courses

**1. Elementary Spanish. (4)** Lecture, three hours; laboratory, two hours. Taught in Spanish. Laboratory is online. Introductory Spanish language and culture course that is proficiency-oriented, communicative, and task-based to help develop communicative competence in four skill areas (listening, speaking, reading, and writing), as well as cultural competence. P/NP or letter grading.

**1G. Reading Course for Graduate Students. (4)** Lecture, three hours. Knowledge of Spanish not required. May not be applied toward degree requirements. S/U grading.

**2. Elementary Spanish. (4)** Lecture, three hours; laboratory, two hours. Taught in Spanish. Laboratory is online. Introductory Spanish language and culture course that is proficiency-oriented, communicative, and task-based to help develop communicative competence in four skill areas (listening, speaking, reading, and writing), as well as cultural competence. P/NP or letter grading.

**2A. Intensive Spanish. (4)** Lecture, 20 hours; laboratory, five hours. Enforced requisite: course 1 or one year of high school Spanish. Intensive basic course in Spanish, with cultural activities, field trips, luncheons. Offered in summer only. P/NP or letter grading.

**2G. Reading Course for Graduate Students. (4)** Lecture, three hours. Enforced requisite: course 1G. May not be applied toward degree requirements. S/U grading.

**3. Elementary Spanish. (4)** Lecture, three hours; laboratory, two hours. Taught in Spanish. Laboratory is online. Introductory Spanish language and culture course that is proficiency-oriented, communicative, and task-based to help develop communicative competence in four skill areas (listening, speaking, reading, and writing), as well as cultural competence. P/NP or letter grading.

**3A. Intensive Spanish. (4)** Lecture, 20 hours; laboratory, five hours. Enforced requisite: course 1 or one year of high school Spanish. Intensive basic course in Spanish, with cultural activities, field trips, luncheons. Offered in summer only. P/NP or letter grading.

**4. Intermediate Spanish. (4)** Lecture, three hours; laboratory, two hours. Taught in Spanish. Laboratory is online. Intermediate Spanish language and culture course designed to increase communicative ability. Acquisition of cultural competence and introduction to study of literature. Comprehension of conversations and stretches of connected discourse, reading of texts with minimum use of dictionary, writing with increased grammatical accuracy and control of sentence structure, coherence, and text organization, talking about past, present, and future events, and expression of preferences, feelings, beliefs, and opinions. P/NP or letter grading.

**5. Intermediate Spanish. (4)** Lecture, three hours; laboratory, two hours. Taught in Spanish. Laboratory is online. Intermediate Spanish language and culture course designed to increase communicative ability. Acquisition of cultural competence and introduction to study of literature. Comprehension of conversations and stretches of connected discourse, reading of texts with minimum use of dictionary, writing with increased grammatical accuracy and control of sentence structure, coherence, and text organization, talking about past, present, and future events, and expression of preferences, feelings, beliefs, and opinions. P/NP or letter grading.

**7A. Introductory Spanish for Heritage Speakers. (4)** Lecture, three hours; laboratory, two hours. Laboratory is online. Designed for students who are from Spanish-speaking family background and have some knowledge of Spanish. Introductory course to further develop communicative abilities, both verbal and



written, and to increase knowledge of grammatical structures and achieve communicative competence. P/NP or letter grading.

**7B. Intermediate Spanish for Heritage Speakers. (4)** Lecture, three hours; laboratory, two hours. Enforced requisite: course 3 or 7A or Spanish placement test. Laboratory is online. Designed for students who are from Spanish-speaking family background and have some knowledge of Spanish. Intermediate course to further develop communicative abilities, both verbal and written, and to increase knowledge of grammatical structures and achieve communicative competence. P/NP or letter grading.

**8A-8B. Spanish Conversation. (2-2)** Discussion, three hours. Course 8A is open to students with credit for course 4. Students who have completed course 3 with grade of B or better may be admitted. P/NP or letter grading.

**9A-9B. Advanced Conversation. (2-2)** Discussion, three hours. Enforced requisite: course 8B. P/NP or letter grading.

**10. Intensive Elementary Spanish. (12)** Lecture, 20 hours. Intensive elementary instruction in speaking, listening, reading, and writing equivalent to courses 1, 2, and 3, with emphasis on Spanish grammar and Hispanic culture. Offered in summer only. P/NP or letter grading.

**11A. Catalan Language and Culture I. (4)** Lecture, six hours. Part one of two-term accelerated language sequence equivalent to three terms of traditional instruction. Introduction to Catalan language and culture from wide range of activities focused on task-based and communicative approaches. Study involves variety of activities, which are designed to develop learners' listening, reading, speaking, and writing skills. P/NP or letter grading.

**11B. Catalan Language and Culture II. (4)** Lecture, six hours. Requisite: course 11A or equivalent. Part two of two-term accelerated language sequence equivalent to three terms of traditional instruction. Study offers more advanced knowledge of Catalan language and culture from wide range of activities focused on task-based and communicative approaches. Study involves variety of activities, which are designed to develop learners' listening, reading, speaking, and writing skills. P/NP or letter grading.

**12A-12B-12C. Basque Language and Culture I, II, III. (4-4-4)** Lecture, five hours. Introduction to Basque language and culture. Three-term language sequence with emphasis on listening, speaking, reading, writing, and cultural competence. P/NP or letter grading. **12B.** Requisite: course 12A. **12C.** Requisite: course 12B.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**25. Advanced Spanish Composition. (4)** Lecture, three hours. Requisite: course 5. Emphasis on development of communicative abilities, both verbal and written, as well as on increasing comprehension of variety of forms of cultural production in Spanish language and on preparation for more advanced Spanish courses. P/NP or letter grading.

**27. Advanced Spanish Composition for Heritage Speakers. (4)** Lecture, three hours. Requisite: course 5. Practice in reading and writing of Spanish for students with oral proficiency in Spanish (in lieu of course 25). P/NP or letter grading.

**28A. Spanish for Special Purposes: Medical. (4)** Lecture, three hours. Requisite: course 3. Practice in speaking, reading, and writing Spanish using appropriate vocabulary and cultural situations for students with special interest in fields such as medicine, business, law, etc. P/NP or letter grading.

**28B. Spanish for Special Purposes: Business. (4)** Lecture, three hours. Recommended requisite: course 3. Introduction to Spanish language and its diverse cultures in variety of business settings. Offers opportunities to practice simple language that may be useful in airports, hotels, restaurants, and informal and professional settings where Spanish is target language. P/NP or letter grading.

**M35. Spanish, Portuguese, and Nature of Language. (5)** (Same as Portuguese M35.) Lecture, three hours; discussion, one hour. Introduction to language study within context of Romance languages, focusing on Spanish and Portuguese. Nature of language: structure, diversity, evolution, social and cultural settings, literary uses. Study of language and its relation to other areas of human knowledge. P/NP or letter grading.

**42. Iberian Cultures. (5)** Lecture, four hours; discussion, one hour. Required of majors. Lectures taught in English; discussion sections taught in either Spanish or English. Highlights of civilization of Spain, with emphasis on artistic, economic, social, and historical development as background for upper-division courses. P/NP or letter grading.

**44. Latin American Cultures. (5)** Lecture, four hours; discussion, one hour. Required of majors. Lectures taught in English; discussion sections taught in either Spanish or English. Highlights of civilization of Spanish America, with emphasis on artistic, economic, social, and historical development as background for upper-division courses. P/NP or letter grading.

**60A-60B-60C. Hispanic Literatures in Translation. (4-4-4)** Lecture, three hours. Class readings and analysis of selected works in translation. Classroom discussion, papers, and examinations in English. **60A.** Spanish Literature; **60B.** Spanish-American Literature; **60C.** *Don Quijote*.

**88A-88Z. Lower-Division Seminars. (4 each)** Seminar, three hours. Knowledge of Spanish not essential. Variable topics courses designed to explore various themes and issues pertinent to Hispanic literature and culture.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97. Variable Topics in Spanish. (2)** Lecture, two hours. Variable topics course with lectures, discussions, and papers; consult Schedule of Classes or department counselor for topic to be offered in specific term. May be repeated for credit. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100A-100B. Introduction to Study of Spanish Grammar. (4-4)** Lecture, four hours. Requisite: course M35. P/NP or letter grading. **100A.** Phonology and Morphology. Analysis of phonemic and morphological systems of Spanish. **100B.** Syntax. Study of syntactical systems of Spanish.

**105. Advanced Spanish Grammar(4)** Lecture, four hours. Requisite: course 25. Comprehensive review of Spanish grammar with attention given to advanced concepts and structures that are not covered in lower-level courses. Development of writing skills through application of grammar concepts. P/NP or letter grading.

**107. Advanced Spanish Grammar for Heritage Speakers(4)** Lecture, four hours. Requisite: course 27. Stresses acquisition of standard and formal registers and advanced grammatical structures, accentuation, orthography, and avoidance of vocabulary and sentence structure. Draws from existing linguistic background to perfect grammar and writing in Spanish. Comprehensive review of Spanish grammar with attention given to advanced concepts and structures that are not covered in lower-level courses. Development of writing skills through application of grammar concepts. P/NP or letter grading.

**119. Introduction to Literary Analysis. (4)** Lecture, four hours. Requisite: course 25 or 27. Introduction to methods of analyzing literary work in Spanish, Spanish-American, and Chicana/Chicano literature. Special attention to four major genres: poetry, narrative, drama, and essay. P/NP or letter grading.

**120. Literature in Historical Context. (4)** Lecture, four hours; discussion, one hour. Requisite: course 25 or 27. Introduction to different ways of looking at literary works as historical phenomena. Presentation of major models for writing history—great narratives, cyclic, teleological, sacred, and profane conceptions. Traditional concepts of literary history and problems of mixed categories (historical epochs versus epochs of style, national history, and world literature). P/NP or letter grading.

**M122. Foundations in Visual Culture in Iberian, Latin American, and Luso-Brazilian Worlds. (4)** (Same as Portuguese M122.) Lecture, four hours. Requisite: course 25 or 27 or Portuguese 25 or 26 or 27. Taught in English. Addresses specificities of visual culture in Spanish- and Portuguese-speaking worlds. Through critical engagement with wide range of visual materials—from 16th-century maps of Americas to YouTube videos of street protests in Chile; from Modernist architectural designs for new national capitals to tele-novelas and colonial photographs; and everything in between—introduction to practices, processes, objects of study, and interdisciplinary critical frameworks of field of visual culture studies. By examining manifestations of visual culture from Iberian, Latin American, and Luso-Brazilian contexts, students gain culturally specific foundations of visual knowledge and skills of visual literacy. P/NP or letter grading.

**130. Topics in Medieval Studies. (4)** Lecture, four hours. Requisites: courses 25 or 27, and 119. Exploration of medieval Iberian literatures: lyric poetry, prose, and history of peninsula, with emphasis on its literary and linguistic diversity. Possible topics include *Convivencia* (peaceful coexistence), Europe and Orient, beginnings of Inquisition, oral versus written traditions, origins of Hispano-Christian expansion beyond peninsula, and flowering of Al-Andalus. May be repeated for credit with topic change. P/NP or letter grading.

**135. Topics in Early Modern Studies. (4)** Lecture, four hours; discussion, one hour (when scheduled). Enforced requisites: courses 25 or 27, and 119. Exploration of 16th and 17th centuries, with focus on early modern period of Spain and Spanish America. Possible topics include Spanish colonization and indigenous responses, transatlantic literary and visual baroque, race and religion in construction of early modern nation, transatlantic fictions, early modern identities and theatrical representations, literature and historiography, transatlantic poetics and poetry. May be repeated for credit with topic change. P/NP or letter grading.

**140. Topics in Modern Studies. (4)** Lecture, four hours. Requisites: courses 25 or 27, and 119. Exploration of major literary movements and writers of 18th and 19th centuries in Spain and Spanish America. Possible topics include Enlightenment, Romanticism, nation-building literature, realism and naturalism, and works by Cadalso, Concolorcorvo, Lizardi, Larra, Sarmiento, Bécquer, Isaacs, Mera, Villaverde, and Galdós. May be repeated for credit with topic change. P/NP or letter grading.

**150. Topics in Contemporary Studies. (4)** Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 25 or 27, and 119. Exploration of main trends that characterize contemporary Latin American and Spanish literatures and cultures and main concepts used to address them. Possible topics

include transculturation and heterogeneity, race and ethnicity, vanguard movements, lettered and popular cultures, literary modernization in Latin American boom, literature and revolution, autobiography, women's writing, border literature, and postmodernist fiction. May be repeated for credit with topic change. P/NP or letter grading.

**155. Topics in U.S. Latina/o Studies. (4)** (Formerly numbered 155C.) Lecture, four hours. Enforced requisite: course 25 or 27. Exploration of spread of Spanish-American literature and culture throughout North America, including literatures that are outgrowth of civil rights movements of 1960s, recent demographic changes, new transnational identities, and mixed citizenships of U.S. Latinas and Latinos. Chicano, Puerto Rican, Cuban American, Central American-American, South American-American, and Jewish Latino literatures may be included. May be repeated for credit with topic change. P/NP or letter grading.

**160. Topics in Spanish Linguistics. (4)** Lecture, four hours. Requisite: course 25 or 27. Exploration of origin of language, how Spanish is acquired, evolution of Spanish from Latin to early modern period, how Spanish varies in world, how to teach Spanish, Spanish in contact with other languages. Possible topics include Spanish in Los Angeles, history of Spanish language, first- and second-language acquisition, language and cognition. May be repeated for credit with topic change. P/NP or letter grading.

**M165XP. Taking It to Street: Spanish in Community. (5)** (Formerly numbered M165SL.) (Same as Chicana/o and Central American Studies M167XP.) Seminar, three hours; fieldwork, 10 hours. Enforced requisite: course 25 or 27. Service learning course to give students opportunity to use cultural and linguistic knowledge acquired in Spanish classes in real-world settings. Students required to spend minimum of eight to 10 hours per week at agreed on site in Latino community. P/NP or letter grading.

**170. Topics in Interdisciplinary and Transhistorical Studies. (4)** Lecture, four hours; discussion, one hour (when scheduled). Requisite: course 25 or 27, 119. Comparative study of cultural production in Latin American, Afro-Luso-Brazilian, and Iberian contexts across diverse historical periods, regional, and ethnic traditions, and aesthetic modes. Possible topics include Afrolatinidad; diaspora; feminism; folklore; gender; globalization; indigeneity and indigenous studies (Andean, Mesoamerican, Amazonian, Tupi, and Tapuia); migration and immigration; music (1960s Latin American protest songs, *nueva canción*, *música regional*, punk, rap, folk); popular culture; regionalisms. May be repeated for credit with topic change. P/NP or letter grading.

**M172XP. Topics in Community Engagement. (5)** (Formerly numbered M172SL.) (Same as Chicana/o and Central American Studies M170XP.) Seminar, four hours; field project, four to six hours. Requisite: course 25. Introduction to community engagement in various forms. Exploration of methods of community involvement and change making processes within variety of professional contexts in community. Students engage in experiential research, service, and/or learning to broaden their understanding of Spanish-speaking and Latinx communities. Students have opportunity to use cultural and linguistic knowledge acquired in Spanish classes in real-world settings. Topics may include oral tradition, immigrant narratives, visual culture and community, language and identity in community, urban spaces, etc. May be repeated for credit with topic change. P/NP or letter grading.

**175. Topics in Creative Writing and Translation. (4)** Seminar, three hours. Requisites: courses 25 or 27, and 119. Exploration of art of translation or creative writing. Guest speakers or instructors include professional literary translators, poets, novelists, playwrights, and filmmakers who discuss theory, methodology, and practice of their art. May be repeated for credit with topic change. P/NP or letter grading.

**180. Variable Topics in Visual Cultures. (4)** (Formerly numbered M180.) Lecture, four hours; discussion, one hour (when scheduled). Requisites: courses 25 or 27, 119. Study of visual knowledge production in Latin America and Iberia as complex relation between visual

subjects, practices, and representation. Objects of analysis may include architecture and urban design, digital media and other technologies, documentaries, fashion, fictional and experimental films, graphic novels and other media, maps and cartography, photography, plastic arts and art history, theater and performance, video, among others. May be repeated four times for credit with topic change. P/NP or letter grading.

**187A-187B. Advanced Tutorial in Community and Culture I, II. (1-2)** Tutorial, one hour. Requisite: course 25 or 27. Designed as adjunct to upper-division course in Hispanic literature, language, and culture. Exploration of topics in greater depth through supplemental readings, papers, community service, or other activities. Course 187A may be repeated once for credit. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**191A. Variable Topics in Spanish: Studies in Hispanic Literature and Linguistics. (4)** Seminar, three hours. Limited to 15 junior/senior Spanish majors. Variable topics course with readings, discussions, and development of culminating paper. Consult Schedule of Classes or department counselor for topic to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**191B. Variable Topics in Spanish: Studies in Hispanic Culture and Civilization. (4)** Seminar, three hours. Advanced variable topics course that studies diverse aspects of Hispanic culture, civilization, and history. Classroom discussions, development of culminating paper, and examinations in Spanish. May be repeated for credit with topic change. P/NP or letter grading.

**191C. Senior Capstone Seminar. (4)** Seminar, three hours. Enforced requisites: courses 119, 120, and at least three upper-division elective courses required for majors. Limited to senior Spanish majors. Knowledge from previous coursework used to address current trends in discipline; students work with one faculty member on one focused research topic. Culminating paper required. Letter grading.

**195. Community Internships in Spanish. (4)** Tutorial, one hour; fieldwork, 10 hours. Requisite: course 25 or 27. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide journal of their experience. Final research paper required. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Spanish. (2 to 4)** Tutorial, to be arranged. Limited to juniors/seniors. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. Eight units of courses 197 and/or 199 may be applied toward major requirements. May be repeated for maximum of 8 units. Individual contract required. P/NP or letter grading.

**198A-198B. Senior Honors Research in Spanish I, II. (4-2)** Tutorial, to be arranged. Preparation: completion of minimum of six upper-division major core courses with 3.7 grade-point average. Course 198A is enforced requisite to 198B. Limited to juniors/seniors. Development and completion of honors thesis under direct supervision of faculty member. May not be applied toward major requirements. Individual contract required. Letter grading.

**199. Directed Research in Spanish. (2 to 4)** Tutorial, to be arranged. Requisite: course 25. Limited to juniors/seniors. Supervised individual research under guidance of faculty mentor. Culminating paper required. Eight units of courses 197 and/or 199 may be applied toward major requirements. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M200. Research Resources. (4)** (Same as Portuguese M200.) Lecture, three hours. Identification and use of research resources for graduate students.

**M201A-M201B. Literary Theory and Criticism. (4-4)** (Same as Portuguese M201A-M201B.) Lecture, three hours. Definition, discussion, and application of main currents of contemporary literary theory and criticism. Letter grading.

**202A. Phonology. (4)** Lecture, three hours. Study of the sound structure of Spanish and main phonological processes that map underlying representations into surface representations. Bearing of phonological theory on study of meter.

**202B. Morphology. (4)** Lecture, three hours. Study of derivational and inflectional word formation processes and their interaction with syntactic structure.

**204A-204B. Generative Syntax and Semantics. (4-4)** Lecture, three hours. Study of syntactic structure of Spanish and relation between underlying representations and logical form within a principles-and-parameters framework. Bearing of syntactic and semantic structure on study of literature.

**M205A-M205B. Development of Portuguese and Spanish Languages. (4-4)** (Same as Portuguese M205A-M205B.) Lecture, three hours. Intensive study of historical development of Portuguese and Spanish languages from their origin in spoken Latin.

**209. Dialectology. (4)** Lecture, three hours. Major dialect areas of peninsular and American Spanish, with distinguishing features of each. Influence and contribution of cultural and historical features, including indigenous languages, to their formation.

**221. Medieval Lyric Poetry. (4)** Lecture, three hours. Readings of and lectures on Spanish lyric poetry from the beginning to 1500.

**222. Medieval Epic and Narrative Poetry. (4)** Lecture, three hours. Readings of and lectures on Spanish epic and narrative poetry from the beginning to 1500.

**223. Medieval Prose. (4)** Lecture, three hours. Readings of and lectures on Spanish prose from the beginning to 1500.

**224. Poetry of the Golden Age. (4)** Lecture, three hours. Readings of and lectures on Spanish poetry from 1500 to 1700.

**225. Drama of the Golden Age. (4)** Lecture, three hours. Readings of and lectures on the *comedia*.

**226. Prose of the Golden Age. (4)** Lecture, three hours. Readings of and lectures on fictional, didactic, religious, and historical writings.

**227. Cervantes. (4)** Lecture, three hours. Readings of and lectures on works of Cervantes.

**228. The Enlightenment. (4)** Lecture, three hours. Readings of and lectures on representative works of the period.

**229. Romanticism. (4)** Lecture, three hours. Readings of and lectures on representative works of the period.

**230. Realism and Naturalism. (4)** Lecture, three hours. Readings of and lectures on literary works, principally novels, from 1850 to 1898.

**231. Major Currents in Modern Spanish Literature. (4)** Lecture, three hours. Introduction to major literary currents, including symbolism, Parnassianism, and the Generation of 1898.

**232. Spanish Prose Literature from 1898 to the Civil War. (4)** Lecture, three hours. Readings of and lectures on representative essays, novels, and short stories of the period.

**233. Spanish Prose Literature after the Civil War. (4)** Lecture, three hours. Readings of and lectures on representative essays, novels, and short stories of the period.

**234. Spanish Drama and Poetry from 1898 to the Civil War. (4)** Lecture, three hours. Readings of and lectures on representative plays and poems.

**235. Spanish Drama and Poetry after the Civil War. (4)** Lecture, three hours. Readings of and lectures on representative plays and poems of the period.

**237. Literature of the Spanish Conquest. (4)** Lecture, three hours. Readings of and lectures on chronicles, poems, and indigenous accounts of the Spanish Conquest.

**238. Baroque, Enlightenment, and Neoclassicism in Colonial Literature. (4)** Lecture, three hours. Readings of and lectures on representative texts.

**239. Romanticism and Realism in Spanish-American Literature. (4)** Lecture, three hours. Intensive study of Romanticism and realism in Spanish-American literature.

**240. Major Currents in Modern Spanish-American Literature. (4)** Lecture, three hours. Study of principal trends in modern Spanish-American literature, particularly *naturalismo* and *modernismo*.

**241A-241B. Contemporary Spanish-American Short Story. (4-4)** Lecture, three hours. Study of important short story writers from modernism to the present.

**243A-243B. Contemporary Spanish-American Poetry. (4-4)** Lecture, three hours. Intensive study of important poets of Spanish America from modernism to the present.

**244A-244B. Contemporary Spanish-American Novel. (4-4)** Lecture, three hours. Study of important novelists from modernism to the present.

**245. Contemporary Spanish-American Essay. (4)** Lecture, three hours. Study of important Spanish-American essayists of the 20th century.

**246. Contemporary Spanish-American Drama. (4)** Lecture, three hours. Study of principal Spanish-American dramatists and theater movements in the 20th century.

**M247. Chicano Literature. (4)** (Same as Chicana/o and Central American Studies M247.) Lecture, three hours. Study of major movements and authors of Mexican American literature. S/U or letter grading.

**M251A-M251B. Studies in Galegan-Portuguese and Old Spanish. (4-4)** (Same as Portuguese M251A-M251B.) Lecture, two hours. Study of problems related to historical development of Galegan-Portuguese and Old Spanish. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**256A-256B. Studies in Spanish Linguistics. (4-4)** Lecture, two hours. Study of problems in analysis and description of the contemporary Spanish language. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**257. Studies in Dialectology. (4)** Discussion, two hours. May be repeated once with topic change and consent of appropriate guidance committee.

**262A-262B. Studies in Medieval Spanish Literature. (4-4)** Discussion, two hours. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**264A-264B. Studies in Golden Age Spanish Literature. (4-4)** Discussion, two hours. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**265. Cervantes. (4)** Discussion, two hours. May be repeated once with topic change and consent of appropriate guidance committee.

**270A-270B. Studies in 18th-Century Spanish Literature. (4-4)** Discussion, two hours. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**271A-271B. Studies in 19th-Century Spanish Literature. (4-4)** Discussion, two hours. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**272A-272B. Studies in 20th-Century Spanish Literature. (4-4)** Discussion, two hours. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**277A-277B. Studies in Colonial Spanish-American Literature. (4-4)** Discussion, two hours. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**278A-278B. Studies in 19th-Century Spanish-American Literature. (4-4)** Discussion, two hours. Each course may be repeated once with topic change and consent of appropriate guidance committee.

**280A. Studies in Contemporary Spanish-American Literature. (4)** Discussion, two hours.

**M280B. Studies in Contemporary Spanish-American Literature. (4)** (Formerly numbered 280B.) (Same as Comparative Literature M281.) Seminar, three hours. Preparation: reading knowledge of one foreign language. In-depth study of topic of Latin American literature in comparative context. May be repeated for credit. S/U or letter grading.

**281. Studies in Chicano Literature. (4)** Discussion, two hours. May be repeated once with topic change and consent of appropriate guidance committee.

**290. Special Topics. (4)** Lecture, two hours. Variable topics; consult Schedule of Classes or department counselor for topics to be offered in a specific term. May be repeated once with topic change and consent of appropriate guidance committee.

**291A-291B. Colonial Studies Research Group. (2-2)** Research group meeting, two hours. Limited to graduate students. Discussion and analysis of colonial manuscripts. Specific topics vary from year to year. Production of student papers for publication and/or presentation at conferences or symposia. **291A.** S/U grading; **291B.** Requisite: course 291A. May be repeated for credit. S/U or letter grading.

**296. Graduate Research Group. (2)** Research group meeting, two hours. Limited to graduate students. Designed to bring together graduate students in seminar setting with one or more faculty members to discuss and critique individual research projects, especially dissertation research. S/U grading.

**M297A. Proseminar I. (2)** (Same as Portuguese M297A.) Proseminar, two hours. Limited to graduate students. Introduction to doctoral study and to professions. Designed to bring together first-year graduate students in seminar setting to discuss how to define their own work in relation to literary, linguistic, and/or cultural studies, broader humanities field, and our various communities. S/U grading.

**310. Teaching Spanish in Elementary School. (4)** Lecture, three hours.

**370. Teaching Spanish in Secondary School. (4)** Lecture, three hours. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**490. Using Technology in Foreign Language Classroom. (4)** Discussion, two hours. Designed for graduate students. Theory and practice of using technology in foreign language classroom. Computer applications that facilitate instruction of grammar, discourse, culture, and composition, as well as evaluation and communication between students and instructor. S/U grading.

**495. Teaching Spanish at College Level. (4)** Seminar, to be arranged. Designed for graduate Spanish and Portuguese students. Basic concepts of modern theories of language and language acquisition which underlie modern methods of second language teaching. S/U grading.

**596. Directed Individual Study or Research. (4 or 8)** Tutorial, to be arranged. Study or research in areas or subjects not offered as regular courses. No more than 4 units may be applied toward MA course requirements. S/U or letter grading.

**597. Preparation for Graduate Examinations. (4 to 12)** Tutorial, to be arranged. Preparation: official acceptance of candidacy by department. Individual preparation for MA comprehensive examination or PhD qualifying examinations. May be taken only once for each degree examination and only in term that comprehensive or qualifying examinations are to be taken. S/U grading.

**598. Research for MA Thesis. (4 to 12)** Tutorial, to be arranged. Research in preparation of MA thesis. S/U grading.

**599. Research for PhD Dissertation. (4 to 12)** Tutorial, to be arranged. Limited to students who have passed PhD qualifying examinations. Research for and preparation of PhD dissertation. S/U grading.

## STATISTICS AND DATA SCIENCE

*College of Letters and Science*

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**Statistics and Data Science**

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Hongquan Xu, PhD, *Chair*

## Faculty Roster

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Rebecca J. Emigh, PhD  
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Jingyi Jessica Li, PhD  
Ker-Chau Li, PhD  
Hongjing Lu, PhD  
George Michailidis, PhD  
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Theodore M. Porter, PhD  
David L. Rigby, PhD  
Damla Senturk, PhD  
Catherine A. Sugar, PhD, *in Residence*  
Yingnian Wu, PhD  
Hongquan Xu, PhD  
Qing Zhou, PhD

### Professors Emeriti

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Richard A. Berk, PhD  
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Jan de Leeuw, PhD  
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### Associate Professors

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### Assistant Professors

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Oscar H. Madrid Padilla, PhD  
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**Senior Lecturer SOE**

Robert L. Gould, PhD

**Senior Lecturers**

Nicolas Christou, PhD

M. Mahtash Esfandiari, PhD

Vivian Lew, PhD

Juana Sanchez, PhD

**Lecturers**

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Michael Tsiang, PhD

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Guani Wu, PhD

Linda A. Zantonian, PhD

David A. Zes, PhD

**Adjunct Associate Professor**

Ivaylo D. Dinov, PhD

**Adjunct Assistant Professors**

Dale S. Kim, PhD

Katherine M. Mullen, PhD

Collins O. Odhiambo, PhD

Shirong Xu, PhD

## Overview

The purpose of statistics and data science is to design, construct, and evaluate techniques for analyzing data. The data can be of any type—qualitative, quantitative, visual—and be collected through a variety of means through sensors, machines, self-reports, or random samples. The motivation can be scientific, commercial, legal, or policy.

The Department of Statistics and Data Science is devoted to furthering the science of data, and faculty research focuses on statistical and machine learning, computational statistics, computational biology, social statistics, and environmetrics. Both the undergraduate and graduate programs immerse students in theory, application, and computation—the foundations of data science.

## Centers

Reflecting diverse research interests, the department is organized around several centers that collectively offer undergraduate and graduate students rich opportunities for specialized study. These include the [Center for Environmental Statistics](#); [Center for Social Statistics](#); [Center for Statistical Research in Computational Biology](#); and Data Science Education Center.

## Undergraduate Majors

### Statistics and Data Science BS

The Statistics and Data Science major is designed to provide a general introduction to the practice of statistics for students who intend to pursue study at the graduate level or seek employment in industry or government. Courses are selected to provide sufficient theoretical

background for future graduate-level research work, exposure to modern techniques and practices, and experience in fields of application.

It is strongly recommended that students, in conjunction with the BS degree, pursue a minor in a substantive discipline that applies statistics. Students must consult with the undergraduate faculty adviser to ensure that the minor selected is one in which statistics is applied.

Students interested in the major in Statistics and Data Science should meet with the student affairs officer early in their careers. Students who have completed Mathematics 33A, Statistics 20, and at least one course from Statistics 10 through 13 may declare a pre-major.

### Capstone Major

The Statistics and Data Science major is a designated capstone major. Students are prepared for future academic studies, as well as for careers in which understanding, analyzing, communication, and organizing data are of central importance. The capstone gives students an opportunity to put into practice concepts and ideas that otherwise might remain theoretical and/or abstract, and to synthesize the many topics they have studied. Students should demonstrate ability to restate investigative questions in terms of statistical models or algorithms, find appropriate research literature to support their work, relate theoretical concepts to real-world problems, and clearly communicate their results to nontechnical audiences.

### Learning Outcomes

The Statistics and Data Science major has the following learning outcomes:

- Ability to restate an investigative question in terms of a statistical model or algorithm
- Verbally communicate statistical results clearly to a non-technical audience
- Successfully relate theoretical concepts to a real-world problem in a written report
- Demonstrated ability to find research literature appropriate to the investigative task
- Deliver reproducible statistical analyses using accepted practices of the research community
- Demonstrated ability to verbally and orally communicate statistical results to both technical and nontechnical audiences

### Entry to the Major

#### Pre-major

Incoming first-year and transfer students may be admitted as Statistics and Data Science pre-majors on acceptance to UCLA. Pre-major students must apply for the major after completing Statistics 20, and one course from Statistics 10 through 15, with grades of C or better, and an overall grade-point average of 2.5. Any student who meets the pre-major requirements may declare the major with the undergraduate student services adviser through [Message Center](#).

#### First-Year Students

Students who entered as first years must declare the major with the undergraduate adviser

no later than the end of the fall quarter of their junior year.

### Transfer Students

Transfer applicants to the Statistics and Data Science major with 90 or more units must complete as many of the following introductory courses as possible prior to admission: two years of calculus, one linear algebra course, and one statistics course. These courses must be completed with a minimum grade-point average of 2.5. Students must declare the major with the department undergraduate adviser no later than the end of the fall quarter of their junior year.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

### Requirements

#### Preparation for the Major

*Required:* Mathematics 31A, 31B, 32A, 32B, 33A, Statistics 20, and one course from Statistics 10 through 15.

#### The Major

*Required:* Statistics 100A, 100B, 100C, 101A, 101B, 101C, 102A, 102B, 102C; two capstone statistical consulting courses (140XP, 141XP); and two upper-division elective courses selected from Mathematics 131A, 131B, 151A, 151B, 170B, 171, or Statistics 112 through 199 (except courses 147, M148, 184, 186).

### Policies

#### Preparation for the Major

Each course must be completed with a grade of C or better, and a grade-point average of 2.5 or higher. Students who repeat more than two of the preparation courses or who repeat any preparation course more than once are automatically denied admission to the major.

#### The Major

Students are strongly encouraged to take electives in departments other than statistics, particularly in mathematics, computer science, and substantive disciplines that apply statistical methods. Elective courses from outside the department may be selected in consultation with the department director of undergraduate education.

The capstone consists of two courses (Statistics 140XP and 141XP) that must be completed sequentially in the final year. Students must first complete courses 100B and 101B before they can begin the capstone.

Students planning to continue their study of statistics at the graduate level are strongly advised to include in their schedule as many of the following courses as possible: Mathematics 115A, 115B, 131A, 131B, 151A, 151B, 170B, 171.

Only 4 units of Statistics 195 and 199 may be applied toward the major. Courses 189 and 189HC may not be applied toward any of the major requirements.



Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

## Data Theory BS

### Capstone Major

The Data Theory major is a designated capstone major. Students work in small teams to solve a large, open-ended data science problem for community- or campus-based clients. Emphasis is placed on the development and theoretical support of a statistical model or algorithmic approach. Alternatively, students may undertake research on the foundations of data science, studying advanced topics and writing a senior thesis.

### Learning Outcomes

The Data Theory major has the following learning outcomes:

- Understanding of mathematical and statistical bases of most common methods of data science
- Ability to explain in writing, with examples, how concepts of statistics and mathematics together solve real-world problems involving data
- Skillfully manage data
- Development, comparison, and testing of data-driven models to solve problems
- Understanding and explanation of variability when fitting and interpreting models of real-world systems
- Carrying out of reproducible data analysis using accepted practices of research community
- Written and verbal communication of findings of analyses
- Identification of areas of active research in data science
- Insightfully address problems concerning ethics of data use and storage, including data privacy and security
- Demonstrated mastery of concepts and skills of machine learning, modeling and supervised learning, dimension reduction and unsupervised learning, and deep learning
- Demonstrated familiarity with numerous software tools used in statistical and data science work and research
- Demonstrated knowledge of mathematical foundations, including pure and applied linear algebra, basic analysis, probability, and optimization theory
- Study and evaluation of proofs of mathematical and statistical results employed in data theory
- Work effectively in a team on a data science problem
- Demonstrated eligibility for graduate study in applied mathematical science or statistical science

### Entry to the Major

#### Pre-major

Students entering UCLA directly from high school or first-term transfer students who want to declare the Data Theory pre-major at the

time they apply for admission are automatically admitted to the pre-major. Students must visit the student services office of either the Mathematics Department or Statistics and Data Science Department in order to petition to enter the major. All students are identified as Data Theory pre-majors until they satisfy the following minimum requirements for the major.

#### First-Year Students

To enter the major, students must petition after they have completed the preparation for the major courses. Students who have an overall grade-point average (GPA) of at least 3.3 in the preparation for the major courses, and have completed all preparation for the major courses before the fall quarter of their third year at UCLA, will be admitted to the major.

Students whose overall GPA is between 2.7 and 3.3, or who fail to complete the preparation courses before the fall quarter of their third year, are admitted only if space is available. All students must petition before they have earned 160 units, or by the winter quarter of their junior year, whichever comes first. Only grades for courses that are taken at the University of California, including UC summer schools, are counted for this GPA computation.

#### Transfer Students

Transfer applicants to the Data Theory major are admitted to the pre-major. Applicants with 90 or more units must have completed the following by the end of the spring term prior to entry to UCLA: two years of calculus for physical science and/or engineering majors, one linear algebra course, one C++ programming course, one statistics course.

Transfer students must have completed all preparation for the major coursework, and must have passed Mathematics 42, 115A, and at least 4 units of upper-division coursework required for this major with at least a 3.3 GPA, in order to be eligible to petition to enter the major. Transfer students will be admitted to the major if they satisfy these requirements. Transfer students who fail to meet these criteria for automatic admission will be admitted only if resources allow. Transfer students must petition to enter the major no later than the spring quarter of their first year at UCLA.

Refer to the [UCLA transfer admission guide](#) for up-to-date information regarding transfer selection for admission.

After satisfying the preparation for the major requirements, students must visit the student services office of either the Mathematics Department or Statistics and Data Science Department in order to petition to enter the major.

### Requirements

#### Preparation for the Major

*Required:* Mathematics 31A, 31B, 32A, 32B, 33A, 42, 115A; Program in Computing 10A; one course selected from Statistics 10, 12, 13, 15; Statistics 20, 21.

#### The Major

*Required:* Mathematics 118, 131A, 156, Statistics 101A, 101C, 102A, 102B, 147, 184; one

two-quarter sequence: Mathematics 170E and 170S, or Statistics 100A and 100B; one elective selected from Mathematics 151A, 151B, 164, 168, 171, 174E, 178A, 178B, 178C, 179 or 182; one elective selected from Statistics 100C, 101B, 102C, or C151 through 199 (except Statistics 182, 186, or 189); two additional electives from either of the above lists; a capstone course (Mathematics M148 or Statistics M148), to be taken during the final year.

### Policies

#### Preparation for the Major

Each course must be completed with a grade of C or better and an overall grade-point average of at least 2.7. All students must take Mathematics 42 at UCLA. The major is limited in size according to available resources.

Repetition of more than two mathematics or statistics sequenced courses or of any mathematics or statistics sequenced course more than once results in automatic dismissal from the major.

#### The Major

Only 4 units of course 199 may be applied toward the major. Courses 189 and 189HC may not be applied toward any of the major requirements.

Each major course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better.

## Undergraduate Minors

### Social Data Science Minor

The Social Data Science minor is designed to offer a solid background in data science for students majoring in social science disciplines. It is restricted to students who are declared majors within the Social Sciences Division.

### Admission

To enter the minor, students (1) must have completed the required lower-division courses for letter grades with a minimum C or better grade in each course, and a grade-point average of 2.5 or better in lower-division courses; and (2) file a petition with the Statistics and Data Science Department undergraduate adviser.

### The Minor

*Required Lower-Division Courses (12 or 13 units):* Mathematics 33A, Statistics 20, and one course from Economics 41, Geography 7, Political Science 6, Sociology 20, or Statistics 10 through 15.

*Required Upper-Division Courses (22 units):* Statistics 101A, 101B, 101C, 184, and two additional upper-division elective courses selected from Statistics 100A, 100B, 100C, 102A, 102B, 102C, C116, 130, 131, C151 through 186, or from Communication 155, 156, Economics 104, 143, 144, 147, Geography 181A, 181B, 181C, 182B, 182C, M186, Political Science 141C, 167D, 170A, 179, 191E, Sociology 111, 114, or 191V.

## Policies

Statistics 105, 188SA, 188SB, 188SC, 189, 189HC, 195, and 199 may not be applied toward the minor. Elective courses from outside the department are selected in consultation with the Statistics and Data Science undergraduate faculty adviser. The variable topics courses Political Science 179 and 191E and Sociology 191V may only be applied toward the minor by special petition on the basis of their statistical content.

Economics 104 may be used as a substitute for Statistics 101A as a requisite for Statistics 101B.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Statistics and Data Science Minor

The Statistics and Data Science minor is designed to provide a solid background in statistics for students majoring in other disciplines.

Students interested in the minor in Statistics and Data Science should meet with the student affairs officer early in their careers. Students who have completed Mathematics 33A, Statistics 20, and at least one course from Statistics 10 through 15 may declare the minor.

## Admission

To enter the minor, students (1) must have taken Mathematics 33A, Statistics 20, and one course from Statistics 10 through 15 for letter grades with a minimum C or better grade in each and a grade-point average of 2.5, and (2) file a petition with the department undergraduate adviser.

## The Minor

*Required Upper-Division Courses (24 units):* Six upper-division courses selected from one of the following options: (1) Statistics 100A, 100B, and 100C, and Statistics 101A, 101B, and 101C, or Statistics 102A, 102B, and 102C, or (2) Statistics 100A, 100B, 101A, 101B, 102A, and 102B or 102C.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

# Graduate Majors

## Master of Applied Statistics and Data Science

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Statistics MS, CPhil, PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

# Statistics

## Lower-Division Courses

**10. Introduction to Statistical Reasoning. (5)** Lecture, three hours; discussion, one hour; computer laboratory, two hours. Preparation: three years of high school mathematics. Not open for credit to students with credit for course 12, 13, or 15. Introduction to statistical thinking and understanding, including strengths and limitations of basic experimental designs, graphical and numerical summaries of data, inference, regression as descriptive tool. P/NP or letter grading.

**12. Introduction to Statistical Methods for Geography and Environmental Studies. (5)** Lecture, four hours; discussion, one hour; laboratory, one hour. Not open for credit to students with credit for course 10, 11, or 13. Introduction to statistical thinking and understanding, with emphasis on techniques used in geography and environmental science. Underlying logic behind statistical procedures, role of variation in statistical thinking, strengths and limitations of statistical summaries, and fundamental inferential tools. Emphasis on applications in geography and environmental science in laboratory work using professional statistical analysis package, including spatial statistics. P/NP or letter grading.

**13. Introduction to Statistical Methods for Life and Health Sciences. (5)** Lecture, three hours; discussion, one hour; laboratory, one hour. Not open for credit to students with credit for course 10, 10H, 11, 12, or 14. Presentation and interpretation of data, descriptive statistics, introduction to correlation and regression and to basic statistical inference (estimation, testing of means and proportions, ANOVA) using both bootstrap methods and parametric models. P/NP or letter grading.

**15. Introduction to Data Science. (5)** Lecture, three hours; discussion, one hour; computer laboratory, one hour. Preparation: three years of high school mathematics. Not open to students with credit for course 10, 12, 13, or former course 10H, 11, or 14. Introduction to data science, including data management, data modeling, data visualization, communication of findings, and reproducible work. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to Statistical Programming with R. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: one course from course 10, 12, 13, 15, Economics 41, or Psychology 100A, or score of 4 or higher on Advanced Placement Statistics Examination. Designed to prepare students for upper-division work in statistics. Introduction to use of R, including data management, simple programming, and statistical graphics in R. P/NP or letter grading.

**21. Python and Other Technologies for Data Science. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 20. Covers use of Python and other technologies for data analysis and data science. Focus on programming with Python and selection of its libraries: NumPy, pandas, matplotlib, and scikit-learn, for purpose of data processing, data cleaning, data analysis, and machine learning. Other technologies covered include Jupyter notebook and Git. Intended for Data Theory majors as introduction to Python language and libraries most frequently used in data science. Letter grading.

**35. Introduction to Probability with Applications to Poker. (4)** Lecture, three hours; discussion, one hour. Exploration of some main topics in introductory probability theory, especially discrete probability problems, that are useful in wide variety of scientific applications. Topics include conditional probability and conditional expectation, combinatorics, laws of large numbers, central limit theorem, Bayes theorem, univariate distributions, Markov processes, and Brownian motion. Examination of computer simulation in depth and discussion of computational approximations of solutions to complex problems using R, with examples of situations and concepts that arise naturally when playing Texas Hold'em and other games. P/NP or letter grading.

**88. Sophomore Seminars: Statistics. (2)** Seminar, two hours. Requisite: one course from 10, 11, 12, 13, or 14. Limited to 20 lower-division students. Readings and discussions designed to introduce students to current statistical consulting research and fieldwork disciplines. Culminating project may be required. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**100A. Introduction to Probability. (4)** Lecture, three hours; discussion, one hour. Requisites: Mathematics 32B, 33A. Not open to students with credit for Electrical Engineering 131A or Mathematics 170A; open to graduate students. Students may receive credit for only two of following: course 100A, former course 110A, Biostatistics 100A. Probability distributions, random variables, vectors, and expectation. P/NP or letter grading.

**100B. Introduction to Mathematical Statistics. (4)** Lecture, three hours; discussion, one hour. Requisite: course 100A or Mathematics 170A or 170E. Survey sampling, estimation, testing, data summary, one- and two-sample problems. P/NP or letter grading.

**100C. Linear Models. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 100B or Mathematics 170S. Theory of linear models, with emphasis on matrix approach to linear regression. Topics include model fitting, extra sums of squares principle, testing general linear hypothesis in regression, inference procedures, Gauss/Markov theorem, examination of residuals, principle component regression, stepwise procedures. P/NP or letter grading.

**101A. Introduction to Data Analysis and Regression. (4)** Lecture, three hours; discussion, one hour. Requisites: one course from course 10, 12, 13, 15, Economics 41, or Psychology 100A, or score of 4 or higher on Advanced Placement Statistics Examination, and course 20. Recommended: course 102A. Applied regression analysis, with emphasis on general linear model (e.g., multiple regression) and generalized linear model (e.g., logistic regression). Special attention to modern extensions of regression, including regression diagnostics, graphical procedures, and bootstrapping for statistical inference. P/NP or letter grading.

**101B. Introduction to Design and Analysis of Experiment. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 101A. Fundamentals of collecting data, including components of experiments, randomization and blocking, completely randomized design and ANOVA, multiple comparisons, power and sample size, and block designs. P/NP or letter grading.

**101C. Introduction to Statistical Models and Data Mining. (4)** Lecture, three hours; discussion, one hour. Enforced requisite: course 101A. Recommended: course 101B. Designed for juniors/seniors. Applied regression analysis, with emphasis on general linear model (e.g., multiple regression) and generalized linear model (e.g., logistic regression). Special attention to modern extensions of regression, including regression diagnostics, graphical procedures, and bootstrapping for statistical inference. P/NP or letter grading.

**102A. Introduction to Computational Statistics with R. (4)** Lecture, three hours; discussion, one hour. Requisites: course 20, Mathematics 33A, and one course from course 10, 12, 13, Economics 11, 41, or Psychology 100A, or score of 4 or higher on Advanced Placement Statistics Examination. Introduction to computational statistics through numerical methods and computationally intensive methods for statistical problems. Topics include statistical graphics, root finding, simulation, randomization testing, and bootstrapping. Covers intermediate to advanced programming with R. P/NP or letter grading.

**102B. Introduction to Computation and Optimization for Statistics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 100B (or Mathematics 170S), 102A, Mathematics 33A. Introduction to computational methods and optimization useful for statisticians. Use of computer programming to solve statistical problems. Topics include vector/matrix computation, multivariate normal distribution, principal component analysis, clustering analysis, gradient-based optimization, EM algorithm for missing data, and dynamic programming. P/NP or letter grading.

**102C. Introduction to Monte Carlo Methods. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 100B (or Mathematics 170S), 102A. Introduction to Markov chain Monte Carlo (MCMC) algorithms for scientific computing. Generation of random numbers from specific distribution. Rejection sampling and importance sampling and their roles in MCMC. Markov chain theory and convergence properties. Metropolis and Gibbs sampling algorithms. Extensions as simulated tempering. Theoretical understanding of methods and their implementation in concrete computational problems. P/NP or letter grading.

**105. Statistics for Engineers. (4)** Lecture, three hours; discussion, one hour. Requisite: course 100A or Electrical Engineering 131A or Mathematics 170A. Foundation of basic concepts and techniques of statistics.

Topics include sampling distributions, statistical estimation (including maximum likelihood estimation), statistical intervals, and hypothesis testing, with emphasis on application of these concepts. Discussion of methods for checking whether assumptions required for mathematical foundations are appropriate for given set of data. P/NP or letter grading.

**112. Statistics: Window to Understanding Diversity. (5)** Lecture, three hours; discussion, one hour; laboratory, one hour. Requisite: one course from course 10, 12, 13, Economics 11, 41, or Psychology 100A, or score of 4 or higher on Advanced Placement Statistics Examination. Limited to juniors/seniors. Statistical methods in social sciences, including regression, multivariate techniques, logistic regression, and data-handling and analysis. Applications to social sciences, using professional statistical analysis software package for data analysis. Letter grading.

**115. Probabilistic Decision Making. (4)** Lecture, three hours; discussion, one hour. Requisite: course 100A. Recommended preparation: experience with Python. Formulation of decision making problem as probabilistic inference. Derivation of algorithms for solving probabilistic decision making. Implementation of code that executes inference and decision. Covers Markov decision process, planning, search, and reinforcement learning. Letter grading.

**C116. Social Statistics. (4)** Lecture, three hours. Preparation: some knowledge of basic calculus and linear algebra. Requisites: courses 100A and 100B, or 101B and 101C, or one course from 10, 11, 12, 13 and one upper-division statistics course using regression. Designed for social sciences graduate students and advanced undergraduate students seeking training in data issues and methods employed in social sciences. Concurrently scheduled with course C216. P/NP or letter grading.

**130. Getting Up to Speed with SPSS, Stata, SAS, and R. (4)** Lecture, three hours; discussion, one hour. Preparation: basic statistics, basic computer literacy. Study of four commonly employed solutions—SPSS (Statistical Package for Social Sciences), Stata, SAS (Statistical Analysis System), and R—for data analytic and statistical issues in health sciences, engineering, economics, and government. Emphasis on applied problem solving, measurement issues in data analysis, use of computer for analysis of large-scale data. P/NP or letter grading.

**131. Python and Other Technologies for Data Analysis. (4)** Lecture, three hours; discussion, one hour. Requisite: course 102A. Limited to junior/senior statistics majors and minors. Use of Python and other technologies for data analysis and data science. Focus on programming with Python and selection of its libraries—NumPy, pandas, Matplotlib, and scikit-learn—for purpose of data processing, data cleaning, data analysis, and machine learning. Other technologies covered include Jupyter notebook, Structured Query Language (SQL), and git. P/NP or letter grading.

**140XP. Practice of Statistical Consulting. (4)** (Formerly numbered 140SL.) Lecture, one hour; discussion, two hours. Enforced requisites: courses 100B, 101B. Limited to seniors. Opportunity to solve real data analysis problems for real community-based or campus-based clients. Students work in small groups with faculty member and client to frame client's question in statistical terms, create statistical model, analyze data, and report results. Weekly meetings in classroom setting to study basic consulting skills, share experiences, exchange ideas, and make reports. On-site visits as necessary. Courses 140XP and 141XP must be taken in consecutive terms. In Progress grading (credit to be given only on completion of course 141XP).

**141XP. Practice of Statistical Consulting. (4)** (Formerly numbered 141SL.) Seminar, one hour; discussion, one hour; research group meeting, two hours. Requisite: course 140XP. Limited to seniors. Opportunity to solve real data analysis problems for real community-based or campus-based clients. Students work in small groups with faculty member and client to frame client's question in statistical terms, create statistical model, analyze data, and report results. Weekly meetings in classroom setting to study basic consulting skills, share experiences, exchange ideas, and

make reports. On-site visits as necessary. Courses 140XP and 141XP must be taken in consecutive terms. Letter grading.

**143. Introduction to Research in Statistics. (4)** Seminar, three hours. Requisites: courses 100B, 101B. Designed for Statistics majors/minors who are interested in research. Research topics in statistics that cover material not covered in regular statistics upper-division curriculum. Reading, discussion, and presenting influential papers in statistics. P/NP or letter grading.

**C145. History and Theory of Statistics. (4)** Lecture, three hours. Enforced requisite: course 100B. History of statistical methodology and its role within scientific community. Philosophical tenets of statistics; use of concept of probability as transparent and relatively objective means of evaluating empirical observations. Theory of statistical hypothesis generation and hypothesis testing. Designed to provide understanding and perspectives on role of statistics in modern science, theory of statistics, and its strengths and weaknesses. Concurrently scheduled with course C245. P/NP or letter grading.

**147. Data Technologies for Data Scientists. (2)** Lecture, two hours. Requisites: courses 100B or Mathematics 170S, 101A, 101C or Mathematics 156. Limited to seniors. Introduction to variety of tools and technologies used in data science. Prepares students for applied project work. Topics include use of collaborative repository hosting services allowing access control; secure cloud services platforms that cover computing power and database storage; open source artificial intelligence libraries. Recommended to be taken prior to or concurrently with course M148. Letter grading.

**M148. Experience of Data Science. (4)** (Same as Mathematics M148.) Lecture, four hours. Requisites: courses 100B or Mathematics 170S, 101A, 101C or Mathematics 156, Mathematics 118, 131A. Students solve real data science problems for community- or campus-based clients. Students work in small groups with faculty member and client to frame client's question in data science terms, create mathematical models, analyze data, and report results. Students may elect to undertake research on foundations of data science, studying advanced topics and writing senior thesis with discussion of findings or survey of literature on chosen foundational topic. Development of collaborative skills, communication principles, and discussion of ethical issues. Letter grading.

**C151. Experimental Design. (4)** Lecture, three hours. Requisites: courses 100C, 101A. Basic principles, analysis of variance, randomized block designs, Latin squares, balanced incomplete block designs, factorial designs, fractional factorial designs, minimum aberration designs, robust parameter designs. Concurrently scheduled with course C225. P/NP or letter grading.

**M154. Measurement and Its Applications. (4)** (Same as Psychology M144.) Lecture, three hours. Requisite: one course from 10, 12, 13, or Psychology 100A. Selected theories for quantification of psychological, educational, social, and behavioral science data. Classical test, factor analysis, generalizability, item response, optimal scaling, ordinal measurement, computer-adaptive, and related theories. Construction of tests and measures and their reliability, validity, and bias. P/NP or letter grading.

**C155. Applied Sampling. (4)** Lecture, three hours; discussion, one hour. Designed for upper-division and graduate students in social or life sciences and those who plan to major in Statistics. Topics include methods of sampling from finite populations, sources of sampling and estimation bias, and methods of generating efficient and precise estimates of population characteristics. Practical applications of sampling methods via lectures and hands-on laboratory exercises. Concurrently scheduled with course CM248. P/NP or letter grading.

**157. Probability and Statistics Data Modeling and Analysis using Statistics Online Computational Resource. (4)** Lecture, three hours; discussion, one hour. Preparation: one engineering, mathematics, physics, or statistics course. Recommended requisite: Program in Computing 20A. Probability and statistics topics in data-driven and interactive manner using open Internet resources. Varieties of data, study-

designs, and applications arising from biomedical, research, and simulated data to prepare students for innovative multidisciplinary research. Use of Statistics Online Computational Resource (SOCR). P/NP or letter grading.

**C161. Introduction to Pattern Recognition and Machine Learning.** (4) Lecture, three hours. Prerequisites: course 100B, Mathematics 33A. Introduction to pattern analysis and machine intelligence designed for advanced undergraduate and graduate students. Concurrently scheduled with course C261. P/NP or letter grading.

**170. Introduction to Time-Series Analysis.** (4) Lecture, three hours; discussion, one hour. Prerequisite: course 100C or 101A, and 100B. Exploration of standard methods in temporal and frequency analysis used in analysis of numerical time-series data. Examples provided throughout, and students implement techniques discussed. P/NP or letter grading.

**M171 Introduction to Spatial Statistics.** (4) (Same as Geography M186.) Lecture, three hours; laboratory, one hour. Prerequisite: one course from 10, 12, 13. Introduction to methods of measurement and interpretation of geographic distributions and associations. P/NP or letter grading.

**C173. Applied Geostatistics.** (4) Lecture, three hours; discussion, one hour. Prerequisite: course 100C (may be taken concurrently) or 101B. Geostatistics can be applied to many problems in other disciplines such as hydrology, traffic, air and water pollution, epidemiology, economics, geography, waste management, forestry, oceanography, meteorology, and agriculture and, in general, to every problem where data are observed at geographic locations. Acquisition of knowledge from different areas that can be used to analyze real spatial data problems and to connect geostatistics with geographic information systems (GIS). Concurrently scheduled with course C273. P/NP or letter grading.

**175. Statistics for Spatial Data.** (4) Lecture, three hours; discussion, one hour. Statistical theories used in analyzing spatial data. Study of three types of spatial data: geostatistical data, lattice data, and point patterns, with emphasis on applications and analysis of spatial data using open-source statistical software R. P/NP or letter grading.

**C180. Introduction to Bayesian Statistics.** (4) Lecture, three hours; discussion, one hour. Enforced prerequisites: course 100B, Mathematics 32B. Designed for juniors/seniors. Introduction to statistical inference based on use of Bayes theorem, covering foundational aspects, current applications, and computational issues. Topics include Stein paradox, nonparametric Bayes, and statistical learning. Examples of applications vary according to interests of students. Concurrently scheduled with course C236. P/NP or letter grading.

**182. Fundamentals of Scientific Writing.** (2) Seminar, one hour. Development and perfection of student written communication skills through variety of scientific writing and reading assignments. Objectives and techniques of scientific writing and practice with different forms of professional writing. Analysis of quality of writing, including control, clarity, grammar, and mechanics. P/NP or letter grading.

**C183. Statistical Models in Finance.** (4) Lecture, three hours. Prerequisite: course 100B. Designed for juniors/seniors and graduate students. Statistical techniques in investment theory using real market data. Portfolio management, risk diversification, efficient frontier, single index model, capital asset pricing model (CAPM), beta of a stock, European and American options (Black/Scholes model, binomial model). Concurrently scheduled with course C283. P/NP or letter grading.

**184. Societal Impacts of Data.** (2) Lecture, two hours. Prerequisites: courses 100B or Mathematics 170S, 101A, 101C or Mathematics 156. Consideration of impacts that data collected today have upon individuals and society. Rapid increase in scale and types of data collected has impacted commerce and society in new ways. Consideration of economic, social and ethical, legal and political impacts of data, especially that collected on human behavior. Topics include privacy and

data protection, intellectual property and confidentiality, sample selection and algorithms, equality and anti-discrimination. Letter grading.

**186. Careers in Statistics.** (1) Seminar, one hour. Discussion of applications of statistics by weekly guest speakers. How statistics is applied to legal questions, economic decisions, arts, environment, and other fields, with some emphasis on career paths in statistics. P/NP grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Community or Corporate Internships in Statistics.** (4) Tutorial, four hours. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**199. Directed Research in Statistics.** (1 to 4) Tutorial, one hour. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200A. Applied Probability.** (4) Lecture, three hours; discussion, one hour. Prerequisite: course 100A or Mathematics 170A. Limited to graduate statistics students. Simulation, renewal theory, martingale, and selected topics from queuing, reliability, speech recognition, computational biology, mathematical finance, epidemiology. S/U or letter grading.

**200B. Theoretical Statistics.** (4) Lecture, three hours; discussion, one hour. Sufficiency, exponential families, least squares, maximum likelihood estimation, Bayesian estimation, Fisher information, Cramér/Rao inequality, Stein's estimate, empirical Bayes, shrinkage and penalty, confidence intervals. Likelihood ratio test, p-value, false discovery, nonparametrics, semi-parametrics, model selection, dimension reduction. S/U or letter grading.

**200C. High Dimensional Statistics.** (4) Lecture, three hours; discussion, one hour. Survey of modern techniques in analyzing high-dimensional and nonparametric estimation problems. Emphasis on non-asymptotic bounds via concentration inequalities. S/U or letter grading.

**201A. Research Design, Sampling, and Analysis.** (4) Lecture, three hours; discussion, one hour. Designed for graduate students. Basic principles, ANOVA block designs, factorial designs, unequal probability sampling, regression estimation, stratified sampling, and cluster sampling. S/U or letter grading.

**201B. Statistical Modeling and Learning.** (4) Lecture, three hours; discussion, one hour. Prerequisites: courses 200A, 201A. Methods of model fitting and parameter estimation, with emphasis on regression and classification techniques, including those from machine learning. Interest in either obtaining suitable conditional expectation function or estimating meaningful parameters of underlying probabilistic model to make inferences or predictions from data. Focus on what is to be done when linear models are not appropriate and may produce misleading estimates. Coverage of classical must know model fitting and parameter estimation techniques such as maximum likelihood fitting of generalized linear models. Exploration of broader regression/classification techniques that have been ubiquitous in machine learning literature, with special attention to regularization and kernelized methods. S/U or letter grading.

**201C. Advanced Modeling and Inference.** (4) Lecture, three hours; discussion, one hour. Strongly recommended prerequisites: courses 200B, 201B. Designed for graduate students. Introduction to advanced topics in statistical modeling and inference, including Bayesian hierarchical models, missing data problems, mixture modeling, additive modeling, hidden Markov models, and Bayesian networks. Coverage of computational methods used and developed for these models and problems, such as EM algorithm, data augmentation, dynamic programming, and belief propagation. S/U or letter grading.

**202A. Statistics Programming.** (4) Lecture, three hours; discussion, one hour. Topics include programming environments/languages such as UNIX, UNIX shell, Python, R, and Processing and data technologies/formats such as relational databases/SQL and XML, with emphasis on complex data types, including large collections of textual data, GPS traces, network logs, and various online sources. S/U or letter grading.

**202B. Matrix Algebra and Optimization.** (4) Lecture, three hours; discussion, one hour. Recommended prerequisite: course 202A. Survey of computational methods that are especially useful for statistical analysis, with implementations in statistical package R. Topics include matrix analysis, multivariate regression, principal component analysis, multivariate analysis, and deterministic optimization methods. S/U or letter grading.

**202C. Monte Carlo Methods for Optimization.** (4) Lecture, three hours; discussion, one hour. Prerequisite: course 202B. Monte Carlo methods and numerical integration. Importance and rejection sampling. Sequential importance sampling. Markov chain Monte Carlo (MCMC) sampling techniques, with emphasis on Gibbs samplers and Metropolis/Hastings. Simulated annealing. Exact sampling with coupling from past. Permutation testing and bootstrap confidence intervals. S/U or letter grading.

**203. Large Sample Theory, Including Resampling.** (4) Lecture, three hours. Prerequisite: course 200B. Asymptotic properties of tests and estimates, consistency and efficiency, likelihood ratio tests, chi-squared tests. S/U or letter grading.

**205. Hierarchical Linear Models.** (4) Lecture, three hours. Designed for students in statistics and other disciplines who want to perform data analysis using linear and nonlinear regression and multilevel models. Introduction to and demonstration of wide variety of models to instruct students in how to fit these models using freely available software packages. Topics include regression, poststratification, matching, regression discontinuity, and instrumental variables, as well as multilevel logistic regression and missing-data imputation. Practical tips regarding building, fitting, and understanding models provided. S/U or letter grading.



**206. Modern Survey Methods. (4)** Lecture, three hours. Requisites: courses 201A, 201B or equivalent. Advancements in modern survey methodology. Examination of traditional approaches and consideration of cutting-edge solutions in fields of research in survey methodology. Development of students' own research. S/U or letter grading.

**207. Statistical Learning with Sparsity. (4)** Lecture, three hours. Study of methods that exploit sparsity to help recover underlying signal in data. S/U or letter grading.

**208. Statistical Learning Theory. (4)** Lecture, three hours. Introduction to theoretical analysis of machine learning methods, with emphasis on prediction problems. S/U or letter grading.

**210. Computer Intensive Methods. (4)** Lecture, three hours. Recommended requisite: course 200B. Recommended preparation: programming skills in R, C/C++, MATLAB. Overview of theory and practice of computer-based methods for statistical inference and uncertainty quantification, including bootstrap, resampling, computer simulation, and Monte Carlo sampling. Coverage of nonparametric and parametric bootstrap, bootstrap inference, permutation test, cross-validation, likelihood approximation, importance sampling, and Markov chain Monte Carlo with brief introduction to Bayesian inference and missing data problems. S/U or letter grading.

**211. Topics in Economics and Machine Learning. (4)** Lecture, three hours. Requisites: courses 200B, 201B, or equivalent. Modern developments in information technology lead to deeper engagement between technology and human that involve data, inferences, and decisions between multiple self-interested participants. Theme of blending economics, information theory, and mathematical statistics began to emerge several decades ago with its roots in work of John von Neumann, Jerzy Neyman, Alan Turing, and David Blackwell. New trend in real-world problems solving in industry and science in recent years leads to new interest and progress in this area. Covers machine-learning, game-theoretic, and economic concepts that are relevant across many application domains and on case studies that demonstrate how to apply these concepts and techniques to real-world problems. Topics include two-sided markets (college admissions, dating markets, etc.), auctions (online advertising, spectrum, etc.), social choice, crowdsourcing, reputation systems, equilibrium computation, mean-field game, and mean-field control. Letter grading.

**212. Graphical Models. (4)** Lecture, three hours. Recommended requisite: course 200A. Introduction to graphical models with applications in statistical modeling, machine learning, and causal inference. Common graphical models, such as undirected graphs, directed acyclic graphs, and ancestral graphs, for modeling conditional independence and causality. Methods and theory for structure learning of graphical models from observational and experimental data. S/U or letter grading.

**213. Synthetic Data Generation. (4)** Lecture, three hours; discussion, one hour. Requisite: one course from course 200B, 201B, 202A, M231A, 231B. Introduction of data-centric approach, i.e., synthetic data generation, to build trustworthy artificial intelligence systems. In general, well-designed generation process of synthetic data can remove individual information (e.g., preserved data privacy), inject knowledge (e.g., guaranteed robustness), or increase diversity (e.g., enhanced fairness) based on raw data sets. Study includes tutorial on modern generative modeling approaches for synthetic data: generative-adversarial-network-based methods, diffusion process-based methods, and generative-flow-network-based methods. Examination of several use cases of synthetic data in various industries including financial service, e-commerce, and health care. S/U or letter grading.

**C216. Social Statistics. (4)** Lecture, three hours. Preparation: some knowledge of basic calculus and linear algebra. Requisites: courses 100A and 100B, or 101B and 101C, or one course from 10, 11, 12, 13 and one upper-division statistics course using regression. Designed for social sciences graduate students and advanced undergraduate students seeking training in

data issues and methods employed in social sciences. Concurrently scheduled with course C116. S/U or letter grading.

**218. Statistical Analysis of Networks. (4)** Lecture, three hours. Limited to graduate students. Introduction to analysis of social structure, conceived in terms of social relationships. Major concepts of social network theory and mathematical representation of social concepts such as role and position. Use of graphical representations of network information. S/U or letter grading.

**221. Time-Series Analysis. (4)** Lecture, four hours. Recommended: some experience in statistical computing. Exploration of methods used in analysis of numerical time-series data. Topics include temporal and frequency analysis, wavelets, and chaos. Implementation of discussed techniques using real data sets. Letter grading.

**M222. Spatial Statistics. (4)** (Same as Geography M205 and Urban Planning M215.) Lecture, three hours. Designed for graduate students. Survey of modern methods used in analysis of spatial data. Implementation of various techniques using real data sets from diverse fields, including neuroimaging, geography, seismology, demography, and environmental sciences. S/U or letter grading.

**C225. Experimental Design. (4)** Lecture, three hours. Basic principles, analysis of variance, randomized block designs, Latin squares, balanced incomplete block designs, factorial designs, fractional factorial designs, minimum aberration designs, robust parameter designs. Concurrently scheduled with course C151. S/U or letter grading.

**M230. Statistical Computing. (4)** (Same as Biomathematics M280 and Biostatistics M280.) Lecture, three hours. Requisites: course 100C, Mathematics 115A. Introduction to theory and design of statistical programs: computing methods for linear and nonlinear regression, dealing with constraints, robust estimation, and general maximum likelihood methods. Letter grading.

**M231A. Pattern Recognition and Machine Learning. (4)** (Same as Computer Science M276A.) Lecture, three hours; discussion, one hour. Designed for graduate students. Fundamental concepts, theories, and algorithms for pattern recognition and machine learning that are used in computer vision, image processing, speech recognition, data mining, statistics, and computational biology. Topics include Bayesian decision theory, parametric and nonparametric learning, clustering, complexity (VC-dimension, MDL, AIC), PCA/ICA/TCA, MDS, SVM, boosting. S/U or letter grading.

**231B. Methods of Machine Learning. (4)** Lecture, three hours; discussion, one hour. Recommended requisites: courses 208, M231A. Introduction of mathematical tools for analysis of learning with neural networks and graphical models with latent variables. S/U or letter grading.

**231C. Theories of Machine Learning. (4)** Lecture, three hours. Requisites: courses 200A, 231B. Introduction to many useful nonparametric techniques such as nonparametric density estimation, nonparametric regression, and high-dimensional statistical modeling. Some semiparametric techniques and functional data analysis. Letter grading.

**M232A. Statistical Modeling and Learning in Vision and Cognition. (4)** (Same as Computer Science M266A.) Lecture, three hours. Preparation: basic statistics, linear algebra (matrix analysis), computer vision. Computer vision and pattern recognition. Study of four types of statistical models for modeling visual patterns: descriptive, causal Markov, generative (hidden Markov), and discriminative. Comparison of principles and algorithms for these models; presentation of unifying picture. Introduction of minimax entropy and EM-type and stochastic algorithms for learning. S/U or letter grading.

**M232B. Statistical Computing and Inference in Vision and Cognition. (4)** (Same as Computer Science M266B.) Lecture, three hours. Preparation: basic statistics, linear algebra (matrix analysis), computer vision. Introduction to broad range of algorithms for statistical inference and learning that could be used in vi-

sion, pattern recognition, speech, bioinformatics, data mining. Topics include Markov chain Monte Carlo computing, sequential Monte Carlo methods, belief propagation, partial differential equations. S/U or letter grading.

**M232C. Cognitive Artificial Intelligence. (4)** (Formerly numbered 232C.) (Same as Communication M232C.) Lecture, three hours. Recommended requisites: courses M232A, M232B. Demonstration of how to build artificial intelligence by following principles of human intelligence revealed by cognitive science, including learning from small data, expressing causality of physical world, and inferring mental states of others for intuitive social interactions. Draws from statistical modeling, cognitive science, artificial intelligence, computer vision, and robotics. S/U or letter grading.

**M235. Modern Environmental Statistics. (4)** (Same as Environment M235.) Seminar, three hours. Limited to graduate students. Recommended requisite: calculus, linear algebra. Focus on practical understanding and application of statistical tools for environmental datasets. Topics include brief overview of concepts in probability, distributions, hypothesis testing, developing and assessing regression models, multidimensional data exploration, time series analysis, and spatial modeling. Draws upon relevant examples in scientific literature. Performance of analyses of real-world datasets. Small groups complete and present project analyzing relevant dataset of choice. S/U or letter grading.

**C236. Introduction to Bayesian Statistics. (4)** Lecture, three hours; discussion, one hour. Recommended requisite: course 200A or 200B. Designed for graduate students. Introduction to statistical inference based on use of Bayes theorem, covering foundational aspects, current applications, and computational issues. Topics include Stein paradox, nonparametric Bayes, and statistical learning. Examples of applications vary according to interests of students. Concurrently scheduled with course C180. S/U or letter grading.

**238. Vision as Bayesian Inference. (4)** Lecture, three hours. Requisite: course 100A or 200A. Formulation of vision as Bayesian inference using models developed for designing artificial vision systems. Applied to statistics, they define ideal observer models that can be used to model human performance and serve a benchmark. S/U or letter grading.

**240. Multivariate Analysis. (4)** Lecture, three hours. Requisite: course 200B. Distributions in several dimensions, partial and multiple correlation. Normal distribution theory, Wishart distribution, Hotelling  $T^2$ . Principal components, canonical correlation, discriminant analysis. Introduction to linear structural relations and factor analysis. Letter grading.

**M241. Current Topics in Causal Modeling, Inference, and Reasoning. (4)** (Same as Computer Science M262C.) Lecture, four hours. Requisite: one graduate probability or statistics course such as course 200B, 202B, or Computer Science 262A. Review of Bayesian networks, causal Bayesian networks, and structural equations. Learning causal structures from data. Identifying causal effects. Covariate selection and instrumental variables in linear and nonparametric models. Simpson paradox and confounding control. Logic and algorithmization of counterfactuals. Probabilities of counterfactuals. Direct and indirect effects. Probabilities of causation. Identifying causes of events. Letter grading.

**M242. Multivariate Analysis with Latent Variables. (4)** (Same as Political Science M208D and Psychology M257.) Lecture, three hours. Introduction to models and methods for analysis of data hypothesized to be generated by unmeasured latent variables, including latent variable analogues of traditional methods in multivariate analysis. Causal modeling: theory testing via analysis of moment structures. Measurement models such as confirmatory, higher-order, and structured-means factory analytic models. Structural equation models, including path and simultaneous equation models. Parameter estimation, hypothesis testing, and other statistical issues. Computer implementation. Applications. S/U or letter grading.

**M243. Logic, Causation, and Probability. (4)** (Same as Epidemiology M204.) Lecture, four hours. Preparation: two terms of statistics or probability and statistics. Recommended prerequisite: Epidemiology 200C. Principles of deductive logic and causal logic using counterfactuals. Principles of probability logic and probabilistic induction. Causal probability logic using directed acyclic graphs. S/U or letter grading.

**M244. Statistical Analysis with Latent Variables. (4)** (Same as Education M231E.) Lecture, three hours. Requisites: Education 231A, M231B. Introduction to general latent variable modeling framework. Important special cases of this framework include confirmatory factor analysis, structural equation models, item response models, latent class models, and multilevel models, among others. Topics include discussions of general statistical and computational framework, model formulation, identification, estimation, and testing. Letter grading.

**C245. History and Theory of Statistics. (4)** Lecture, three hours. History of statistical methodology and its role within scientific community. Philosophical tenets of statistics; use of concept of probability as transparent and relatively objective means of evaluating empirical observations. Theory of statistical hypothesis generation and hypothesis testing. Designed to provide understanding and perspectives on role of statistics in modern science, theory of statistics, and its strengths and weaknesses. Concurrently scheduled with course C145. S/U or letter grading.

**246. Statistical Model Selection. (4)** Lecture, three hours. Preparation: basic knowledge of calculus, linear algebra, and computer programming. Modern methods for constructing and evaluating statistical models, including non-Bayesian and Bayesian statistical modeling approaches. Discussion of theoretical parts and data analysis. Letter grading.

**CM248. Applied Sampling. (4)** (Same as Epidemiology M216.) Lecture, three hours; discussion, one hour. Designed for upper-division and graduate students in social or life sciences and those who plan to major in Statistics. Topics include methods of sampling from finite populations, sources of sampling and estimation bias, and methods of generating efficient and precise estimates of population characteristics. Practical applications of sampling methods via lectures and hands-on laboratory exercises. Concurrently scheduled with course C155. S/U or letter grading.

**M250. Statistical Methods for Epidemiology. (4)** (Same as Epidemiology M211.) Lecture, four hours. Preparation: two terms of statistics (such as Biostatistics 100A, 100B). Enforced requisites: Epidemiology 200B, 200C. Concepts and methods tailored for analysis of epidemiologic data, with emphasis on tabular and graphical techniques. Expansion of topics introduced in Epidemiology 200B and 200C and introduction of new topics, including principles of epidemiologic analysis, trend analysis, smoothing and sensitivity analysis. S/U or letter grading.

**M254. Statistical Methods in Computational Biology. (4)** (Same as Bioinformatics M223 and Biomathematics M271.) Lecture, three hours; discussion, one hour. Preparation: elementary probability concepts. Requisite: course 100A or 200A or Bioinformatics M221. Introduction to statistical methods developed and widely applied in several branches of computational biology, such as gene expression, sequence alignment, motif discovery, comparative genomics, and biological networks, with emphasis on understanding of basic statistical concepts and use of statistical inference to solve biological problems. Letter grading.

**256. Causality. (4)** Lecture, three hours; discussion, one hour. Preparation: proficiency in basic R coding, probability theory, linear algebra, multivariate calculus, and statistics through inference and regression. Tools to pursue both theoretical and applied research in causality. S/U or letter grading.

**C261. Introduction to Pattern Recognition and Machine Learning. (4)** Lecture, three hours. Requisites: course 100B, Mathematics 33A. Introduction to pattern analysis and machine intelligence designed for advanced undergraduate and graduate students. Concurrently scheduled with course C161. S/U or letter grading.

**271. Probabilistic Models of Visual Cortex. (4)** Seminar, three hours. Requisite: course 100B or Mathematics 33A. Recommended: Computer Science 180. Introduction to state-of-art computational models of mammalian visual cortex, with topics in low-, mid-, and high-level vision. Discussion of relevant evidence from anatomy, electrophysiology, imaging (e.g., fMRI), and psychophysics. Concentration on mathematical modeling of these phenomena, taking into account recent progress in probabilistic models of computer vision and developments in machine learning. S/U or letter grading.

**C273. Applied Geostatistics. (4)** Lecture, three hours; discussion, one hour. Geostatistics can be applied to many problems in other disciplines such as hydrology, traffic, air and water pollution, epidemiology, economics, geography, waste management, forestry, oceanography, meteorology, and agriculture and, in general, to every problem where data are observed at geographic locations. Acquisition of knowledge from different areas that can be used to analyze real spatial data problems and to connect geostatistics with geographic information systems (GIS). Concurrently scheduled with course C173. S/U or letter grading.

**C283. Statistical Models in Finance. (4)** Lecture, three hours. Recommended prerequisite: course 100B. Designed for graduate students. Statistical techniques in investment theory using real market data. Portfolio management, risk diversification, efficient frontier, single index model, capital asset pricing model (CAPM), beta of a stock, European and American options (Black/Scholes model, binomial model). Concurrently scheduled with course C183. S/U or letter grading.

**285. Seminar: Research Topics in Statistics. (2 to 4)** Seminar, one to three hours. Topics in various statistical areas by means of lectures and informal conferences with staff members. May be repeated for credit. S/U grading.

**M286. Seminar: Statistical Problem Solving for Population Biology. (2)** (Same as Ecology and Evolutionary Biology M286.) Seminar, two hours. Designed for graduate students. Statistical solutions to complex data analysis and/or experimental design problems encountered by biology graduate students in their own research. S/U or letter grading.

**287. Seminar: Gene Expression and Systems Biology. (2)** Seminar, two hours. Designed for graduate students (open to undergraduate students with consent of instructor). With high-throughput technologies such as genomic sequencing, microarray gene expressions, Chromatin-ImmunoPrecipitation DNA chip (ChIP-chip), and mass spectrometry (MS/MS) proteomics, scientists are collecting genetic, genomic, and pathway data at rates far beyond imagination one decade ago. Such gigantic volumes of data produced cannot be analyzed and understood without highly sophisticated computational methods guided by mathematical and statistical principles. Cutting-edge genomics research from statistical data analytic point of view. S/U or letter grading.

**290. Current Literature in Statistics. (2)** Seminar, one hour. Topics in various statistical areas by means of lectures and informal conferences with staff members. S/U grading.

**291XP. Service Learning for Graduate Statistical Consulting. (4)** (Formerly numbered 291SL.) Research group meeting, two hours; fieldwork, two hours. Exposure to realistic statistical and scientific problems that appear in typical interactions between statisticians and researchers, with lectures centered on case studies presented by faculty members and invited speakers from business and academic fields. Applied regression analysis and design of experiments, together with basic statistical programs. Presentations and written reports required. S/U or letter grading.

**292. Graduate Student Statistical Packages Seminar. (1 to 2)** Seminar, two hours. Introduction to various statistical packages. How to handle data in different packages (input, output, data management, treatment of missing data), general syntax of different programming languages, and good practice for writing own statistical functions. S/U grading.

**294. Scientific Writing. (2)** Seminar, two hours. Development of oral and written presentations of statistical data. Objectives and techniques of scientific writing and practice with different forms of professional writing. Participation in oral presentations of student work. S/U or letter grading.

**296. Participating Seminar: Statistics. (1 to 2)** Seminar and discussion by staff and students. S/U grading.

**297SL. Service Learning and Community Learning for Statistics. (2 to 4)** Seminar, three hours; fieldwork, 10 hours. To further knowledge by applying what students have learned in class to an actual service work setting under guidance of faculty mentor. Interaction with nonprofit organizations can be either on location or over the Internet. May be used for MS thesis; research paper/project required. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Introduction to Probability Modeling. (4)** Lecture, three hours; discussion, one hour. Preparation: calculus and linear algebra. Limited to Master of Applied Statistics students. Introduction to probability theory, probability models, and stochastic processes, with emphasis on concepts, intuitions, calculations, and real applications. Letter grading.

**401. Survey of Methods in Modern Statistics. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Overview of fundamental concepts of data analysis and statistical inference and how these are applied in wide variety of settings. Arc of statistical investigation, including data collection, data exploration, formal inference, and model checking. Letter grading.

**402. Applied Regression. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Introduction to state-of-art applications of linear model for understanding systems and predicting outcomes. Topics include review of statistical inference, properties of least-squares estimates, interpreting linear model, prediction and confidence intervals, model building, diagnostics, and bootstrapping. Letter grading.

**403. Mathematical Statistics. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Basic concepts of mathematical statistics and their applications. Mathematics used to prove various statistical theories, with emphasis on real-world applications. Estimation and statistical inference. Random variables and their distributions; random vectors, their means, variances, variance covariance matrix; and important limit theorems such as central limit theorem. Letter grading.

**404. Statistical Computing and Programming. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Fundamentals of statistical programming using R, C, and C++. R is currently state-of-art for statistical computing, simulation, statistical graphics, and analysis of data. C and C++ perform computations much faster, and added speed is necessary for analysis of large datasets and for high-level computations, particularly those involving loops and object-oriented programming. Performance of simulations and analysis of real datasets using C, C++, and R. Fundamental principles and techniques for programming in these languages. How to use and interpret results of important functions in R packages. Statistical applications involve linear and nonlinear regression, shrinkage methods, density estimation, numerical optimization, maximum likelihood estimation, classification, and resampling. Graphics and real examples used to illustrate techniques. Analyses of both real and simulated data. Letter grading.

**405. Data Management. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Basic principles of data management, including reading and writing various forms of data, working with databases, data cleaning, validation, transformation, exploratory data analysis, and intro-

ductory data visualization and data mining techniques. Exploration of related issues of data security, ethics, and scalability. Introduction to and use of variety of software and languages, such as Python, SQL, Stata, SAS, R. Letter grading.

**411. Multivariate Statistical Analysis. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 20, and 101A, or equivalent level of discipline. Limited to Master of Applied Statistics students. Offers students working knowledge of basic concepts underlying most important multivariate techniques, with overview of actual applications in various fields, and with experience in using such techniques on problem of their own choosing. Addresses underlying mathematics and problems of applications. Reasonable level of competence in both statistics and mathematics is required. Letter grading.

**412. Advanced Regression and Predictive Modeling. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Often we are interested in making inferences and predictions from data, either by (1) estimating particular meaningful parameters of models or (2) finding best fitting model that we can then manipulate to produce useful outputs such as predictions or counterfactual estimates. Focus on what is done when linear models are not appropriate and may produce misleading estimates. Generalized linear model and maximum likelihood methods as essential tools all statistics students should understand. Examination of shift gears to explore regression and classification techniques that have been ubiquitous in machine learning literature in recent years, with special attention to regularization and kernelized methods. Letter grading.

**413. Machine Learning. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Recommended preparation: linear algebra, calculus, basic computer programming knowledge. Introduction to machine learning and data mining methods. To gain in-depth understanding of these methods, implementation of them in R, Python, and C++. Letter grading.

**414. Computer Intensive Methods. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Overview of theory and practice of expectation maximization (EM) optimization methods, bootstrap, Monte Carlo simulation, and Markov chain Monte Carlo. Coverage of missing data, EM algorithm and its variants, nonparametric and parametric bootstrap, bootstrap inference, permutation tests, rejection sampling, importance sampling, Metropolis/Hastings algorithm, and Gibbs sampling, with brief introduction to Bayesian computing. Letter grading.

**415. Introduction to Forecasting. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Designed for physical and social sciences students who are interested in using statistics and its applications for forecasting and data-driven decisions and for life sciences and medical school students who are interested in modeling of historical data to predict outcomes. Introduction to state-of-art statistical methods that rely on historical data collected in past to forecast future outcomes. Coverage of models used for forecasting only one measurement type and models used to forecast several types of measurements simultaneously. S/U or letter grading.

**416. Applied Geostatistics. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 401, 402, 403. Limited to Master of Applied Statistics students. Introduction to fundamentals of analysis of types of spatial and spatial-temporal datasets frequently arising in geostatistical problems. Geostatistical data arise commonly in nearly every science, wherever spatial and spatial-temporal data are obtained. Examples include geology, hydrology, traffic, air and water pollution, epidemiology, economics, geography, waste management, forestry, oceanography, meteorology, and agriculture. Theory and modern methods for analyzing both lattice and point process data using R, and student performances of their own analysis of geostatistical datasets involving variogram modeling, kriging, model fitting, and estimation using maximum likelihood and nonparametric methods. Letter grading.

**417. Models in Finance. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Exposure to several statistical techniques used in investment theory, and hands-on experience by applying various models on real stock market data using package stockPortfolio of open source statistical software R. Letter grading.

**418. Tools in Data Science. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 404, 405. Limited to Master of Applied Statistics students. Tools for data acquisition, transformation and analysis, data visualization, and machine learning and tools for reproducible data analysis, collaboration, and model deployment used by data scientists in practice. Advanced R packages, analytical databases, high-performance machine learning libraries, big data tools. Letter grading.

**419. Experimental Design. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 402, 403. Limited to Master of Applied Statistics students. Fundamentals of designing experiments to gain maximal information while minimizing costs. Topics include role of randomization and blocking, comparing two or more treatments, randomized blocks, factorial design, Latin square designs, fractional factorial designs, response surface designs. Letter grading.

**420. Causal Inference in Social Science Practice. (4)** Lecture, three hours; discussion, one hour. Requisite: course 400. Recommended requisites: courses 401, 402, 403, 404, 405. Limited to Master of Applied Statistics students. Variety of designs and methods, including experiments, matching, regression, panel methods, difference-in-differences, synthetic control methods, instrumental variable estimation, regression discontinuity designs, and sensitivity analysis. Basic skills from probability and statistics. Applications drawn from various fields including political science, public policy, economics, and sociology. Skills developed apply to any discipline in which investigators seeks to make causal statements but cannot fully randomize treatment. Letter grading.

**421. Advanced Statistical Communication. (4)** (Formerly numbered 421B.) Lecture, three hours; discussion, one hour. Designed to improve verbal and written communication skills related to various ways in which statistics is used in workplace. Directed toward students who are fluent in English and are already proficient in verbal and written communication of scientific results. Letter grading.

**422. Data Visualization. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 20, 101A, or equivalent level of discipline. Limited to Master of Applied Statistics students. Study of fundamental methods in data visualization, focusing especially on methods using Tableau, R/shiny, Python/Dash and HTML, and JavaScript for customized R and Python dashboards. Reasonable level of competence in both statistics and computing is required. Letter grading.

**423. Longitudinal Data Analysis. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 20, 101A, or equivalent level of discipline. Limited to Master of Applied Statistics students. Fundamental methods in longitudinal data analysis, with examples of actual applications in various disciplines. Students gain experience in using such techniques on problems of choice. Reasonable level of competence in both statistics and mathematics required. Letter grading.

**424. Teamwork and Leadership in Data Science. (4)** Lecture, three hours; discussion, one hour. Requisites: courses 10, 20, 101A, or equivalent level of discipline. Limited to Master of Applied Statistics students. Students learn how to lead, manage, negotiate, and participate in teams of data scientists. Students present statistical results for audiences ranging from business leaders to media outlets to academic statisticians. Letter grading.

**425. Text Mining. (4)** Lecture, three hours; discussion, one hour. Limited to Master of Applied Statistics students. Covers use of text mining tools for purpose of data analysis. Covers basic text handling, natural language engineering, and statistical modeling on top of textual data. Letter grading.

**495A. Teaching College Statistics. (2)** Seminar, two hours; intensive training at beginning of Fall Quarter. Required of all potential departmental teaching assistants and new PhD students. Practical and theoretical issues in teaching of statistics. S/U grading.

**495B. Teaching College Statistics. (2)** Seminar, two hours. Weekly discussion and intensive training for all first-year teaching assistants that addresses practical and theoretical issues in using technology to teach statistics, including use of statistical software as education tool. S/U grading.

**496. Statistics Internship. (2 to 4)** Tutorial, four hours; field work, two hours. Under faculty supervision, production of substantial paper relating to or arising from internship. S/U or letter grading.

**497. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Supervised individual reading and study on project approved by a faculty member. May be repeated for credit. Letter grading.

**498. MAS Thesis Research. (2 to 8)** Tutorial, four hours. Research on thesis project for MAS students. Project should be original analysis of data that solves pressing problem and is done typically in conjunction with an industry partner. May be repeated for credit with permission from program chair or instructor. S/U grading.

**596. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. Supervised individual reading and study on project approved by a faculty member. May be repeated for credit. Letter grading.

**598. MS Thesis Research. (2 to 12)** Tutorial, to be arranged. Designed for second-year statistics MS students. Study and research for MS thesis. May be repeated for credit. S/U grading.

**599. PhD Dissertation Research. (2 to 12)** Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Study and research for PhD dissertation. May be repeated for credit. S/U grading.

## SURGERY

*David Geffen School of Medicine*

72-131 Center for Health Sciences  
Box 951749  
Los Angeles, CA 90095-1749

### Surgery

310-825-6256

*O. Joe Hines, MD, Chair*

*David C. Chen, MD, Vice Chair, Surgical Services, UCLA Santa Monica*

*Christian M. de Virgilio, MD, Vice Chair, Harbor-UCLA*

*Timothy R. Donahue, MD, Vice Chair, Surgical Cancer Care*

*Clifford Y. Ko, MD, MSHS, Vice Chair, Clinical Research*

*Jerzy W. Kupiec-Weglinski, MD, PhD, Vice Chair, Basic Science Research*

*Gerald S. Lipshutz, MD, Vice Chair, Research*

*Jessica B. O'Connell, MD, Vice Chair, VA Greater Los Angeles Healthcare System*

*Areti Tillou, MD, Vice Chair, Education*

*Eleby Washington, MD, Vice Chair, Charles R. Drew University of Medicine and Science*

## Overview

The Department of Surgery instructs medical students during all four years of medical school. Students are expected to obtain broad knowledge of diseases treated by surgical means and to understand the pathophysiology of these conditions, the therapy that may be applied, and the anticipated results of treatment. They are also encouraged to learn about the effects of surgical illness on the patient and the patient's family and environment.

Second-year students participate in one eight-week core clerkship in clinical surgery and are assigned to rotations at a combination of Reagan UCLA, Cedars-Sinai Medical Center, Harbor-UCLA, West Los Angeles VA, Olive View-UCLA, Kaiser Permanente, and UCLA Santa Monica medical centers. Each facility has a special orientation depending on the patient population and the individual staff. During the fourth year students may elect to take additional clinical rotations with increasing responsibilities. Additional in-depth elective courses are offered in collaboration with other departments.

For more details on the Department of [Surgery](#) and courses offered, see the department website.

Surgery [faculty information](#) is available from the department.

## Surgery

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**199. Directed Research in Surgery. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of fac-

ulty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## THEATER

*School of Theater, Film, and Television*

303 East Melnitz Building  
Box 951622  
Los Angeles, CA 90095-1622

[Theater](#)

310-825-7008

[Department e-mail](#)

J. Ed Araiza, BA, *Chair*

## Faculty Roster

### Professors

J. Ed Araiza, BA  
Jeffrey A. Burke, MS, MFA, *in Residence*  
Myung Hee A. Cho, MFA  
Lap Chi Chu, MFA  
Chrisi Karvornides-Dushenko, MFA  
Suk-Young Kim, PhD  
Brian E. Kite, MFA  
Deborah Nadoolman Landis, PhD (*David C. Copley Professor of Costume Design*)  
Sean A. Metzger, PhD  
Dominic A. Taylor, MFA  
Edit E. Villarreal, MFA

### Professors Emeriti

Alan M. Armstrong, MFA  
Sue-Ellen Case, PhD  
Hanay L. Geiogamah, BFA  
Michael J. Hackett, PhD  
Patricia M. Harter, PhD  
Robert H. Hethmon, PhD  
Anna Krajewska-Wieczorek, PhD  
Michael S. McLain, PhD  
Joanne T. McMaster, MFA  
Joseph M. Olivieri, MFA  
Rich S. Rose, MFA  
Mel Shapiro, MFA  
Carol J. Sorgenfrei, PhD  
José Luis Valenzuela, BA  
William D. Ward, MFA  
Margaret L. Wilbur, MFA

### Associate Professors

Jennifer M. Chang, MFA  
Thomas K. O'Connor, MFA  
Sylvan M. Oswald, MFA  
Mariuske A. Splint, MFA

### Assistant Professor

Felipe Cervera, PhD

### Senior Lecturer SOE

Thomas J. Orth, *Emeritus*

### Lecturers

Cheryl Baxter-Ratliff  
Sara R. Clement, MFA  
Perry M. Daniel, MFA  
David M. Gorshein, PhD  
Leanora Martino, MA  
Angela R. Scott, MFA  
Jonathan Snipes

Natsuo Tomita  
Jonathan Wang, BS, MSOM

### Adjunct Professors

Dan T. Belzer, MFA  
F. Nicholas Gunn, *Retired*  
Linda Kerns, *Retired*  
Jeremy L. Mann  
Ed J. Monaghan, MFA  
Judith E. Moreland, MFA  
Paul M. Wagar

### Adjunct Associate Professor

Marilyn E. Fox

### Academic Administrator

Jonathan Burke, MFA

## Overview

The Department of Theater offers comprehensive training for the profession, including study of theater's long history and rich literature. Drawing on this vibrant heritage, the curriculum promotes an awareness of theater as a global practice embodying the contributions of diverse cultures and explores theater and performance as a form for reflecting the human experience. Students engage in theatrical performance in a community where creativity and critical thought combine in the exploration of the artistic and intellectual challenges inherent in theater making.

Manifesting talent and promise as well as representing a wide range of backgrounds and interests, prospective students are selected by the faculty through auditions and interviews in cities throughout the U.S.

For current or specific information about the programs and faculty members, see the [department website](#).

## Undergraduate Study

At the undergraduate level, students receive education in acting, design and production, directing, formal and textual analysis, musical theater, performance studies, and playwriting, all within the rigorous liberal arts framework of the Bachelor of Arts (BA) degree. The department also offers a Theater minor.

## Graduate Study

At the graduate level, students in the Master of Fine Arts (MFA) program develop as artists and are given preprofessional training in the skills of theater, while PhD students engage in critical investigations of performance broadly understood. In conjunction with their theater studies, students also have the opportunity to pursue elective courses in the area of film, digital media, and television, and, schedules allowing, take graduate courses from across UCLA.

## Undergraduate Major

### Theater BA

The Theater BA provides students with a liberal arts education by combining critical study of theater and performance with experiential



practice in one or more of its component parts. Students explore acting, design, directing, formal and textual analysis, playwriting, and production to build a foundation for future creative work. Specialized and advanced training is available to prepare students for a variety of careers, further training, or graduate study. At the upper-division level, students may choose from an array of advanced elective courses including those in acting, design and production, directing, musical theater, playwriting, theater history, and dramatic literature. Internships in areas such as producing and casting are also available.

## Capstone Major

The Theater major is a designated capstone major. Theater capstone courses represent independent student scholarship and/or a high degree of artistic achievement in each of the undergraduate areas. Capstone courses are intended to be the culmination of all the broad educational courses and core foundational courses that a student has taken. Group participation in the creation and production of student projects is core to the curriculum. Capstone courses vary by area and require individual projects or performances, a major artistic contribution to a theater production, or an individual course of study resulting in a research paper. Through their capstone work, students demonstrate general knowledge and specialized skills, successfully relate their experience in a studio, production, or fieldwork setting, communicate effectively orally and in writing, and engage with a community of artists and scholars presenting theatrical work.

## Learning Outcomes

The Theater major has the following learning outcomes:

- Demonstrated broad knowledge of fundamentals acquired through coursework, including general knowledge of the art form and skills in a specialized area of study
- Successful relation of experience in a studio, production, or fieldwork setting
- Engagement with a community of artists and scholars presenting theatrical work
- Effective oral and written communication

## Entry to the Major

### Admission

All applicants must meet the admission standards of UCLA and the departmental screening process. Applications are accepted only in November for admission to the following fall quarter. There are no mid-year admissions. Students must submit required supplemental materials directly to the Theater Department. If requested by the department, applicants must also sign up for an [audition and/or interview](#) online. There is a \$90 fee for all interviews/auditions.

Applicants interested in one of the emphases in acting, design and production, integrated studies (including critical studies, directing, and playwriting) or musical theater may submit materials for consideration in that area.

## Requirements

### Preparation for the Major

*Required:* Theater 11, 12, 13, 14A, 14B, 14C, 50 (must be taken for 4 units total).

### The Major

The major consists of Theater 101A, 101B, one course from 102A through 113, 131C or 163C or 180 (capstone seminar), one course (4 units) from 150, 173A, 173B, 174B, or 174C, and 34 upper-division theater elective units.

## Policies

### The Major

Up to 8 units of upper-division credit in the Department of Film, Television, and Digital Media may be included in the 34-unit theater elective requirement.

Majors wishing to pursue one of the emphases in the areas of acting, design and production, directing, musical theater, or playwriting are expected to complete a number of regularly offered elective courses.

Students who do not select and emphasis or who wish to pursue an individualized plan are expected to meet with the undergraduate vice chair at the beginning of each year to plan their course of study.

## Undergraduate Minor

### Theater Minor

The Theater minor is designed for students who wish to augment their major program of study with a series of courses that promote the study of theater as a global phenomenon for reflecting the human experience. The minor consists of a selection of lower-division courses that expose students to the fundamentals of theatrical production, as well as acting, writing, and directing. Upper-division courses offer more focused study of those areas, as well as theater design, history, education, and theater of non-Western cultures.

### Admission

To enter the minor students must be in good academic standing (minimum 2.0 grade-point average), have completed at least one approved UCLA theater minor course with a grade of C or better, and file a petition at the Student Services Office, 103 East Melnitz Building, 310-206-8441. All degree requirements, including the specific requirements for this minor, must be fulfilled within the unit maximum set forth by each student's school or College.

### The Minor

*Required Lower-Division Courses (6 to 10 units):* Theater 10 and one course from 15, 20, 28A, 28B, 28C, 30.

*Required Upper-Division Courses (22 to 27 units):* Theater 150, one course from 102A through 113, and four courses selected from 117, 118A, 118B, 118D, 120A, 120B, 120C,

121, 123, 128A, 130, 136, 138, 139, C146A, C146B, 149, 195.

## Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor, and at least 16 units applied toward the minor must be taken in residence at UCLA. Transfer credit for any of the above is subject to department approval.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Theater MFA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Theater and Performance Studies CPhil, PhD

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Theater

### Lower-Division Courses

**1A-1B-1C. Introduction to Dance for Music Theater. (1-1-1)** Studio, four hours. Designed for Theater majors. Introduction to basic music theater dance technique. Each course may be repeated once for credit. Letter grading.

**2A. Tai Chi. (1)** Studio, two to four hours. Emphasizes proper form, etiquette as coextensive with training, and other values that sustain physical practice over lifetime. Actors increase focus, enhance discipline, cultivate internal energy, and relax mind and body. Demonstration of how each tai chi movement works in self-defense situation. Letter grading.

**2B. Tai Chi II. (1)** Studio, two to four hours. Requisite: course 2A. Designed for Theater majors. Reviews, refines, and advances work of course 2A, introducing new forms, and delving more deeply into practice of Yang-style tai chi. Courses in performance practice continuum emphasize proper form, etiquette, and other values that sustain practice over lifetime. May be repeated once for credit. Letter grading.

**3. Aikido. (1)** Studio, two to four hours. Designed for Theater majors. Introduction to basic stance, falls, throws, and pins of 20th-century martial art, Aikido.

Courses in performance practice continuum emphasize proper form and etiquette. May be repeated twice for credit. Letter grading.

**10. Introduction to Theater. (5)** Lecture, three hours; discussion, one hour (when scheduled). Exploration of theater in production, with emphasis on collaborative role of theater artists and active role of audience. Understanding of and access to live theatrical event and enhanced appreciation of value of theater to society; development of critical skills through consideration of representative examples of theatrical production from Europe, America, Asia, and Africa. P/NP or Letter grading.

**11. Approaches to Interpretation of Theater and Performance: Global Perspective. (5)** Seminar, four hours. Introduction to basic methods of interpretation in theater and performance throughout world. Topics illustrated by faculty members and guest speakers, visits to off-campus theaters, and reading from contemporary plays. Letter grading.

**12. Introduction to Performance. (4)** Lecture, two hours; studio, four hours. Investigation of phenomenon of performance and role of performer in theatrical events, including interpretation of drama through performance. Examination of various forms of theatrical performance and styles of expression, and development of acting, voice, and movement skills. Letter grading.

**13. Play Reading and Analysis. (5)** Lecture, three hours. Provides base for subsequent study in theater. Development of techniques of play reading and habits of scholarship useful to further study in each of theater's subdisciplines, including acting, directing, design, playwrighting, and critical study. Letter grading.

**14A-14B-14C. Introduction to Design. (5-5-5)** Lecture, three hours; studio, six hours. Exploration of visual interpretation of drama. Study of styles and techniques of design, collaborative role of designer, principles of design for scenery, lighting, costumes, and sound. Both technical and aesthetic groundwork for further study. Letter grading.

**15. Introduction to Directing. (4)** Lecture, two hours; studio, four hours. Investigation of role of director in theatrical production and theories of play direction, with emphasis on analysis and interpretation of dramatic work and its realization in production. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Acting Fundamentals. (4)** Studio, four hours. Introduction to interpretation of drama through art of actor. Development of individual insights, skills, and disciplines in presentation of dramatic material to audiences. P/NP or letter grading.

**21. Acting for Camera. (2 to 4)** Lecture, three hours. Development and practice in acting techniques. Preparation and taping of scenes for analysis. May be repeated twice for credit. Letter grading.

**23A. Introduction to Musical Literacy for Singing Actors. (2)** (Formerly numbered 23.) Studio, three hours. Reading and translating musical notation in treble clef; defining common musical terminologies; basic rhythm-reading and diatonic sight-singing in all major keys. Letter grading.

**23B. Advanced Musical Literacy for Singing Actors. (1)** Studio, three hours. Requisite: course 23A. More advanced sight-singing, incorporating minor keys, chromatic scales, internal key changes, and bass clef; exploration of song form, musical theater score formats, and harmonic/contrapuntal singing. Letter grading.

**24A. Actor's Voice. (2)** Studio, three to four hours. Study of basic vocal technique for actor, with emphasis on resonance, range, power, and development of physiological foundation for subsequent training. Letter grading.

**24B. Voice in Performance. (2)** Studio, three to four hours. Requisite: course 24A. Continuation of course 24A, with greater emphasis on group and/or solo performance projects that present targeted vocal and textual challenges. Letter grading.

**24C. Voice and Speech I. (1)** Studio, three to four hours. Development of voice and speech techniques for stage. Letter grading.

**25. Articulation and Body. (2)** Studio, three to four hours. Study of basic kinesiology principles of body in performance. Includes strategies of movement initiation and organization, as well as performance of movement scores to support actor's craft. Letter grading.

**26. Alexander Techniques. (2)** Studio, three hours. Study and practice in Alexander techniques as method of developing balance, poise, and coordination of body and mind. Exploration of use of rhythm to expand movement potential of actors and relevant use of visual arts and animal studies to character development and to expansion of movement potential. P/NP or letter grading.

**27. From Vaudeville to Standup Comedy. (4)** Studio, three to four hours. Exploration of many aspects of comedy using American vaudeville traditions, acts, and performers as historical base to experience importance of rhythm, timing, delivery, speech, and body language in all styles of comedy, to find value of improvisation/imagination as well as innovative writing skills in all comic forms, to discover how comedy draws from so many art forms, including music/songs, dance, storytelling, clowning, magic, design, and tumbling/stunts, and to build overall confidence/ease in comic performance skills. P/NP or letter grading.

**28A-28F. Acting, Voice, and Movement Workshops I. (2 each)** Studio, three to six hours (28A-28D) and six hours (28E-F). Study of beginning acting technique, scene study, and development of voice and movement skills. Each course may be repeated for maximum of 12 units. Letter grading.

**30. Dramatic Writing. (4)** Studio, three hours. Intended for Theater minors and other nonmajors. Exploration and development of creative writing skills for one or more of various forms of entertainment media. May be repeated once. Letter grading.

**34A-34B-34C. Ballet II. (1-1-1)** Studio, five hours. Development of dance and movement techniques for musical theater. Letter grading.

**35A. Group Singing Techniques. (1)** Studio, three hours. Requisites: courses 23A, 23B. Introduction to singing techniques, with emphasis on bel canto training. Exploration of how singing voice works and how to achieve optimal vocal sound and musicality while preserving vocal health. Letter grading.

**35B. Advanced Group Singing Techniques. (1)** Studio, three hours. Requisite: course 35A. Advanced singing techniques, focusing on strategies for producing consistently dynamic, efficient, and musical vocal sound, and how to build stamina and range while preserving vocal health. Letter grading.

**50. Theater Production. (1 to 2)** Laboratory, three to six hours. Laboratory experience in various aspects of theater production, including stage management or member of production crew. May be repeated for maximum of 8 units. Letter grading.

**72. Production Practice in Theater, Film, Video, and Digital Media. (1 to 8)** Studio, three hours. Exploration and laboratory experience in one or more of various aspects of production and postproduction practice for entertainment media, including theater, film, video, and digital media. May be taken for maximum of 8 units. Letter grading.

**76. Introduction to Production Practice in Theater with Emerging Technologies. (4)** Studio and laboratory, four to six hours. Introductory studio with focus on collaborative creative and technical development of all aspects of theatrical production incorporating emerging and/or advanced technologies, often culminating in rehearsal and/or public presentation. Letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater

depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**95. Introduction to Community or Corporate Internships in Theater, Film, and Television. (2 to 4)** Tutorial, six to 12 hours. Limited to freshmen/sophomores. Internship at various theaters, studios, or entertainment organizations accentuating creative contributions, organization, and work of professionals in various specialties. Students meet on regular basis with faculty member and provide periodic reports of experience. May be taken for maximum of 4 units. Individual contract with supervising faculty member required. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101A. Global Histories of Theater and Performance I. (5)** Lecture, three hours; discussion, one hour. Introduction to histories of theater and performance from across world, with emphasis on ancient world through 18th century. Introduction to global aesthetic theories and historiographical research methods. Letter grading.

**101B. Global Histories of Theater and Performance II. (5)** Lecture, three hours; discussion, one hour. Introduction to histories and historiographies of theater and performance from across world, with emphasis from 18th century through 21st century. Introduction to representational modalities from melodrama to performance art and theoretical approaches from Marxism to poststructuralism. Letter grading.

**102A. Theater of Japan. (5)** Lecture, three hours. Overview of Japanese theater and performance from early theatrical activity to present, with emphases on enduring forms and genres, patterns of reception, and transnational influences. Letter grading.

**102B. K-Pop: Race, Gender, and Sexuality in Globalizing Asian Media. (5)** Lecture, two hours; discussion, two hours. Exploration of K-pop through critical lens of gender queerness, racial plagiarism and passing, cultural appropriation, affective labor, body technology, transmedia, and globality. Study acknowledges that history of globalization and evolution of media ecosystem cannot be studied without considering uneven power dynamics marked by racial and gender hierarchy and digital accessibility. Letter grading.

**102C. Cross-Cultural Currents in Theater. (5)** Lecture, three hours. Exploration of interculturalism in theater, with focus on 20th-century alternatives to naturalism. Analysis of historical materials and dramatic texts to investigate cultural, aesthetic, ethical, and social implications of borrowing from other cultures. Letter grading.

**M103A. African American Theater History: Slavery to Mid-1800s. (4)** (Same as African American Studies M103A.) Lecture, three hours. Designed for juniors/seniors. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from slavery to mid-1800s. Letter grading.

**M103B. African American Theater History: Minstrel Stage to Rise of American Musical. (4)** (Same as African American Studies M103B.) Lecture, three hours. Designed for juniors/seniors. Exploration of extant materials on history and literature of theater as developed and performed by African American artists in America from minstrel stage to rise of American musical. Letter grading.

**M103C. Origins and Evolution of Chicano Theater. (5)** (Same as Chicana/o and Central American Studies M103C.) Lecture, three hours. Designed for juniors/seniors. Exploration of development of Chicano theater

from its beginning in legends and rituals of ancient Mexico to work of Luis Valdez (late 1960s). P/NP or letter grading.

**M103D. Contemporary Chicano Theater: Beginning of Chicano Theater Movement. (5)** (Same as Chicana/o and Central American Studies M103D.) Lecture, three hours. Analysis and discussion of historical and political events from 1965 to 1980, as well as the theatrical traditions that led to emergence of Chicano theater. Letter grading.

**M103E. Modern African American Drama: Harlem Renaissance to Black Arts Movement. (4)** (Same as African American Studies M103E.) Lecture, three hours. Survey and examination of African American plays from 1920s until birth of modern civil rights era. Examination of sociohistorical context out of which plays were created and critical essays that illustrate development of African American playwrights and their significant involvement in creation of diversified American theatrical tradition. Letter grading.

**103F. Native American Theater. (5)** Lecture, three hours. Study of American Indian theater as evolving art form. P/NP or letter grading.

**M103G. Contemporary Chicano Theater: Chicano Theater since 1980. (5)** (Same as Chicana/o and Central American Studies M103G.) Lecture, three hours. Analysis and discussion of Chicano theater since 1980, including discussion of Chicana playwrights, magic realism, Chicano comedy, and Chicano performance art. Letter grading.

**103I. Israel and Palestine: Communities, Conflicts, Cultures, and Arts in Middle East. (4)** Lecture, three hours. No background on or prior interest in history or region or arts required. Land variously known by names of Zion, Holy Land, Palestine, and Israel is not just one place. It is a realm of imagination, envisioned and re-envisioned throughout history. It is at once real and surreal, sturdy and fragile, all-enduring and ephemeral. Examination of selected works of literature, performance, visual arts, film, and media by Israeli and Palestinian artists, as well as Western artists with interest in region. Looking beyond headlines and facile cultural clichés for deeper insights arts can offer into cultural conflict and community at large, to emerge with surprising conclusions. Letter grading.

**M103J. Contemporary Black Theater: Modern Civil Rights Era to Black Lives Matter and Beyond. (4)** (Same as African American Studies M103J.) Lecture, three hours. Examination of Black theater from Black Arts Movement of 1960s until today. Exploration of social and historical implications of work, and aesthetic experimentation of contemporary African American playwrights and movements. Letter grading.

**104D. New Playwrights, New Playwriting. (5)** Seminar, three hours. Required for students in playwriting sequence. How to approach diverse range of new plays currently changing landscape of theater. Contemporary look at plays written in last 15 years and how they reflect society. Reading of plays to build skills of manuscript analysis; development of working vocabulary of dramaturgical concepts; exploration of different styles of acting, directing, and design that playwrights of today draw from. Letter grading.

**C104E. History of Design Décor Part I: Architecture and Décor—Antiquity to Early Neoclassical. (4)** Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of pre-Renaissance architectural and interior décor as manifestation of cultural, social, economic, and political influences to provide historical framework for design of scenery, costumes, and lighting for theater, film, and television. May be repeated once for credit. Concurrently scheduled with course C404E. Letter grading.

**C104F. History of Design Décor Part II: Architecture and Décor—Industrial Revolution to 21st Century. (4)** Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of post-Renaissance architectural and interior décor as manifestation of cultural, social, economic, and political influences to provide historical framework for design of scenery, costumes, and lighting for theater, film, and television. May be repeated once for credit. Concurrently scheduled with course C404F. Letter grading.

**C104G. History of Design for Performance Production Part I: Historic Costume from Prehistoric to Neoclassical. (4)** Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of historic costume as manifestation of cultural, social, economic, and political influences to provide historical framework for design of costumes for theater, film, and television. Survey of history of Western costume and civilian attire. May be repeated once for credit. Concurrently scheduled with course C404G. Letter grading.

**C104I. History of Design for Performance Production Part II: Historic Costume from Neoclassical to 21st Century. (4)** Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of historic costume as manifestation of cultural, social, economic, and political influences to provide historical framework for design of costumes for theater, film, and television. Survey of history of Western costume and civilian attire with global emphasis. May be repeated once for credit. Concurrently scheduled with course C404I. Letter grading.

**C104J. History of Design for Performance Production: Selected Topics of Décor and Costume Design History. (4)** Lecture, four hours. Requisites: courses 14A, 14B, 14C. Historic survey and in-depth exploration of selected periods and subcategories of décor and costume. Visual representation, with emphasis on influences of global diverse cultures. May be repeated three times for credit. Concurrently scheduled with course C404J. Letter grading.

**105. Main Currents in Theater. (5)** Lecture, three hours. Critical examination of leading theories of theater from 1887 to present. Study and discussion of modern styles of production. P/NP or letter grading.

**106. History of American Theater and Drama. (5)** Lecture, four hours; discussion, one hour (when scheduled). Survey of key works of American dramatic literature and landmarks of American theater history. P/NP or Letter grading.

**107. Drama of Diversity. (5)** Lecture, three hours; discussion, one hour (when scheduled). Investigation of diversity in American society as manifested in dramatic works and theatrical presentations. P/NP or Letter grading.

**108. Undergraduate Seminar: History and Criticism. (5)** Seminar, four hours. Limited to 15 students. Selected topics in history and criticism of theater and performance. Study of how experimental theaters originate, how they imagine their form of performance, their audience, and their goals. Concentration on theaters that regarded themselves, in some way, as experimental. Examples primarily from theaters within U.S. from 1960s to present, although examples from other countries, specifically Poland, also considered. Letter grading.

**M109. Art and Performance: Interdisciplinary Approach to Collections of Getty Center. (4)** (Same as Honors Collegium M120.) Lecture, four hours; discussion, one hour. Drawing from objects in five major collections at Getty Museum, focus on five parallel historical periods in which political, social, and aesthetic philosophy of age is examined in musical and dramatic performance. Letter grading.

**110. History of American Musical Theater. (5)** Lecture, three hours; discussion, one hour. Survey of history of American musical: its composers, writers, and performers from musical's emergence in immigrant cultures to Broadway and Off-Broadway. With its roots in British music halls and comic opera, Viennese operetta and African American jazz, American musical theater emerged as vivid and popular art form with its own culture and identity. P/NP or letter grading.

**111. Creating Theatrical Season. (5)** Seminar, three hours. Limited to sophomore/junior/senior Theater majors and minors. Students research and analyze contemporary issues facing theater and entertainment industries, and then address them through researching and proposing Theater Department's next annual production calendar. Introduction to process of searching for and vetting new and classic scripts and addressing current trends and issues through concrete planning and programming. Topics and discussions related to current issues vary by term. May be repeated for credit. P/NP or letter grading.

**C112. Emerging Technologies and Their Uses in Live Performance. (4)** (Formerly numbered C137.) Seminar, four hours. Survey of major emerging and contemporary technologies and their potential uses in and impact on live performance, from augmented and virtual reality to electronic textiles, Internet of Things, and Modern approaches to artificial intelligence. Offers solid basis for engaging in future collaborations with technologists, for self-study of new technologies, and, for those already more familiar with digital technologies, theoretical background for engaging with social context of these technologies. Concurrently scheduled with course C212. P/NP or letter grading.

**113. Special Topics in Theater and Performance Studies. (5)** Lecture, three or four hours. Consult Schedule of Classes for author, period, genre, or subject to be studied in specific term. May be repeated for credit. P/NP or letter grading.

**M114. Variable Topics in Performance and Disability Studies. (4)** (Same as Disability Studies M114.) Seminar, four hours. Analysis and critique of depiction of disability in theater. Topics may include introduction to disability studies; race, gender, and disability; representation of disability in theater; and more. May be repeated for credit with topic or instructor change. P/NP or letter grading.

**115A. Physical Systems of Acting: Foundations. (4)** Studio, six hours. Requisites: courses 24A, 24B, 25. Introduction to physical approaches of actor training, with emphasis on development of ensemble skills, physical presence, and capacity to respond in moment to physical, special, textual, and subtextual stimuli. Letter grading.

**115B. Physical Systems of Acting: Practice. (4)** Studio, six hours. Requisites: courses 24A, 24B, 25. Performance of original studies in physical theater and/or material from physical theater repertory. Course activities, materials, and discussions based on contemporary physical theater practices. Letter grading.

**116A. Psychological Systems of Acting: Foundations. (4)** Studio, six hours. Requisites: courses 24A, 24B, 25. Development of acting skills through sense memory, personalization, action, and objective exercises. Letter grading.

**116B. Psychological Systems of Acting: Practice. (4)** Studio, six hours. Requisites: courses 24A, 24B, 25, and 116A, or 28A, 28B, 28C, and 116A. Examination of characterization exercises and their application to contemporary scenes. Letter grading.

**117. Topics in Physical Performance. (2)** Studio, three to four hours. Exploration of specific physical performance techniques, drawn from range of practices. Topics may include specific types of partnering, combat, martial arts, vintage dance, etc. May be repeated twice for credit. Letter grading.

**118A. Creative Dramatics. (4)** Lecture/laboratory, four hours. Studies of principles and procedures of improvisational approach to drama as done with children from nursery school to junior high. P/NP or letter grading.

**118B. Advanced Creative Dramatics. (2 to 4)** Lecture, four hours; other, to be arranged. Practical application of creative drama process. Exploration of interrelationships of arts to traditional disciplines of learning. May be repeated once for credit. P/NP or letter grading.

**118C. Interactive Theater. (4)** Laboratory, four hours. Active, problem-solving process of theater exercises and games designed to examine racial stereotypes, sexual harassment, gender discrimination, and other issues that divide members of campus community, as well as issues that divide campus from Los Angeles community. Selected to increase social and political awareness of problems and ideas fundamental to intellectual development, exercises and games nurture skills and attitudes useful in facilitating discussions between actors and audience participants. Use of techniques of sensory awareness, movement, pantomime, improvisation, and characterization. Letter grading.

**118D. ArtsBridge Teaching Practicum. (4)** Lecture, four hours. Requisites: courses 118A, 118B. Development of K-12 teaching materials to integrate theater with specific core curricula. Collaboration with class-

room teacher to identify core subject to be taught. Language arts, science, history, mathematics, and social sciences are possible curricular areas. Development of evaluation tools to measure effectiveness of incorporating theater materials into curriculum. Weekly meetings to discuss teaching strategies and prepare written lesson plans that incorporate California Teaching Content Standards, objectives, motivation, detailed implementation of lesson plan, and ideas for assessment. Classroom work culminates in thoroughly documented final project evaluated by Arts-Bridge student, classroom teacher, and UCLA faculty members. P/NP or letter grading.

**120A-120B. Acting and Performance in Film. (5-5)** Lecture, six hours. Exploration of acting and performance in film. Through screenings of performance-driven films, class discussion, and acting exercises, examination of methods, styles, and performances of some of world's most highly regarded actors and their work. P/NP or letter grading.

**120C. Acting and Performance in Film. (5)** Lecture, six hours. Exploration of acting and performance in film. Through screenings of performance-driven films, class discussion, and acting exercises, examination of methods, styles, and performances of some of world's most highly regarded actors and their work. Letter grading.

**121. Acting Workshop. (2)** Studio, to be arranged. Requisite: course 20. Courses 160, 163A, 163B, and 163C may be taken concurrently. Workshop that provides students with opportunity to rehearse, perform, and criticize scenes. May be repeated once for credit. P/NP or letter grading.

**C122. Character Development through Makeup and Hair Design. (2)** Studio, four hours. Examination of importance of makeup and hair design in film. History and overview of hair and makeup in fashion and motion pictures. Collaboration of makeup artists and hairstylists with costume designer, actors, production designer, and director to conceptualize people in script. Exploration of makeup artist and hairstylist roles in current film, television, and theater productions and skills needed to design makeup and hair for film and television productions. Concurrently scheduled with course C222. Letter grading.

**123. Intermediate Acting for Stage. (4)** Lecture/studio, four hours. Requisite: course 20. Study and practice of art of acting through perfecting of techniques and application of those techniques to acting problems. P/NP or letter grading.

**124A. Intermediate Voice and Speech I: Vocal Energy in Classical Text. (2)** Studio, three to four hours. Requisites: courses 24A and 24B, or 28A and 28B. Creation of warm-up and building of vocal energy through understanding ideas, thoughts, and beats. Examination of diaphragmatic connection and breath control to work on classical text and verse, including Shakespearean sonnet. Letter grading.

**124B. Intermediate Voice and Speech II: Creating Complete Warm-Up for Theatrical Productions. (2)** Studio, three to four hours. Requisites: courses 24A, 24B, and 124A, or 28A, 28B, and 124A. Working with contemporary texts to learn all simple vowels (lip, tongue, open, neutral) and to communicate sound consistently forward and connected through whole body. Creation of complete warm-up for theatrical production using these methods. Letter grading.

**124C. Dialects. (2)** Studio, three to four hours. Requisite: course 124B. Development of techniques in approaching dialects in performance. Letter grading.

**124D. Acting for Microphone. (1)** Studio, one to three hours. Requisite: course 124B. Introduction to voice-over techniques for television and radio commercials, animation, video games, audio books, Automatic Dialogue Replacement (ADR)/looping, narration, e-learning, and interactive voice response (IVR). Letter grading.

**124E-124F. Voice and Speech III. (1-1)** Studio, three to four hours. Development of voice and speech techniques for stage. Letter grading.

**125A. Alexander Technique. (2)** Studio, three to four hours. Requisite: course 25 or 28C. Study and practice in Alexander technique as method of developing balance, poise, and coordination of body and mind.

Exploration of use of rhythm to expand movement potential of actors and use of visual arts and animal studies for character development. Letter grading.

**125B. Physical Awareness and Combat for Theater, Film, and Television. (2)** Studio, three to four hours. Requisite: course 25 or 28C. Combat training for actors in theater, film, and television. Concentration on warm-up, relaxation, control, stunts, gymnastics, martial arts, and use of weapons. Letter grading.

**125C. Physical Awareness and Combat for Theater, Film, and Television II. (2)** Studio, three to four hours. Requisite: course 125B. Combat training for actors in theater, film, and television. Concentration on warm-up, relaxation, control, stunts, gymnastics, martial arts, and use of weapons. Letter grading.

**125D-125E-125F. Movement and Combat III. (2-1-2)** Studio, three to four hours. Physical awareness for actors, concentrating on warming up body, relaxation, control, stunts, gymnastics, martial arts, and use of weapons. Letter grading.

**126A. Acting Shakespeare. (4)** Studio, six hours. Requisites: courses 24A, 24B, 25, and 116A, or 28A, 28B, 28C, and 116B, all with grades of C or better. Study of characterization, verse, scansion, and rhetoric; personalization within heightened reality. Letter grading.

**126B. Acting Classical Texts. (4)** Studio, six hours. Requisite: course 126A. Advanced study of characterization, approach to verse, scansion, use of embodiment in classic texts. Personalization within heightened reality. Letter grading.

**126C. Acting III. (4)** Studio, six hours. Study of characterization, including introduction to Shakespeare. Approach to verse, scansion, use of emboles in classic texts. Personalization within heightened reality. Letter grading.

**127. Performance for Virtual Environments. (4)** Lecture, two hours; discussion, one hour; laboratory, two hours. Exploration of performance in virtual environments through hands-on experimentation and scene work using two or more prominent technologies, supported by history of each technology and its use in arts, key technological concepts, and basic production processes. Consideration of uses in large scale professional production as well as low-budget and do-it-yourself approaches. Platforms studied are selected for their importance to field, timeliness, and relationship to department season. Students engage with platforms as actors, working with instructor- and self- and selected scenes. Students explore character development, different relationships to audience and camera, and engagement/synchronization with virtual setting. Students identify techniques collaboratively in concert with study of experiences of other actors, directors, and other creators with platforms. Letter grading.

**128A. Acting, Voice, and Movement Workshops II. (2)** Studio, four to six hours. Study of advanced acting technique, scene study, and development of voice and movement skills. May be repeated for maximum of 12 units. Letter grading.

**CM129. Contemporary Topics in Theater, Film, and Television. (2)** (Same as Film and Television CM129.) Lecture, two hours; screenings, two hours. Limited to junior/senior and graduate theater/film and television students. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading members of theater, film, and television professions. May be repeated twice for credit. Concurrently scheduled with course CM229. P/NP or letter grading.

**130. Fundamentals of Playwriting. (5)** Studio, three hours. Designed for departmental majors and minors. Exploration of writing for live performance. Students develop and workshop short plays. May be repeated once for credit. Letter grading.

**131A-131B. Intermediate Playwriting. (5-5)** Studio, three hours. Letter grading. **131A.** Full-Length Play Part I. Requisite: course 130A. Introduction to process of conceiving, researching, and developing full-length plays. Students begin drafting full-length plays. May

be repeated twice for credit. **131B.** Full-Length Play Part II. Requisite: course 131A. Continuation of writing of full-length plays begun in course 131A. May be repeated twice for credit.

**131C. Playwriting: Full-Length Play Capstone. (5)** Studio, three hours. Requisite: course 131A. Limited to juniors/seniors. Same as course 131B, but taken for capstone credit. Completion of writing of full-length plays begun in course 131A, with rehearsed readings of student capstone plays. Letter grading.

**132. Manuscript Evaluation for Theater. (4)** Lecture, three hours. Requisite: course 130A. Principles and practices in evaluation of manuscripts for theater. May be repeated once for credit. P/NP or letter grading.

**C133A. Script Development Workshops. (4 to 8)** Lecture, three hours; studio, four to 24 hours. Guided process of script development, with emphasis on communication, artistic growth, and professional process. May be taken for maximum of 8 units. Concurrently scheduled with course C433A. Letter grading.

**134A-134B-134C. Dance for Musical Theater II. (1-1-1)** Studio, five hours. Designed for Theater majors. Development of dance and movement techniques for musical theater. Letter grading.

**134D-134E-134F. Dance for Musical Theater III. (1-1-1)** Studio, five hours. Designed for Theater majors. Development of dance and movement techniques for musical theater. Letter grading.

**134G. Dance for Musical Theater: Ballet. (1)** Studio, three to four hours. Designed for Theater majors. Intermediate level course. Development of skills and furthering of concepts of ballet technique. Emphasis on development of proper placement, building strength and flexibility, higher level of techniques, and awareness of musicality and artistic expression. May be repeated five times for credit. Letter grading.

**135A. Musical Theater Vocal Styles: Gospel. (2)** Studio, three hours. Designed for Theater majors. Part of five-course series of musical theater performance techniques in which students explore and master variety of vocal styles and/or acting approaches necessary to be competitive in field of professional musical theater. Exploration of strategies and techniques for singing gospel and rhythm and blues music, with solo and group improvisation as foundation. Letter grading.

**135B. Musical Theater: Creating and Playing Subtext on Standard Ballad. (2)** Studio, three hours. Designed for Theater majors. Acting (creating personalized subtext) applied to performance of ballad. Letter grading.

**135C. Musical Theater Vocal Styles: Legitimate/Operetta. (2)** Studio, three hours. Designed for Theater majors. Part of five-course series of musical theater performance techniques in which students explore and master variety of vocal styles and/or acting approaches necessary to be competitive in field of professional musical theater. Exploration of strategies and techniques for singing legitimate/operetta music, with emphasis on vocal and body strengthening exercises and solo song coaching. Letter grading.

**135D. Musical Theater Vocal Styles: Rock. (2)** Studio, three hours. Designed for Theater majors. Part of five-course series of musical theater performance techniques in which students explore and master variety of vocal styles and/or acting approaches necessary to be competitive in field of professional musical theater. Exploration of strategies and techniques for singing rock music, with emphasis on vocal and body strengthening exercises and solo song coaching. Letter grading.

**135E. Musical Theater: Creating and Playing Character from Musical Text. (2)** Studio, two to three hours. Designed for Theater majors. Exploration of text and lyrics of musical theater piece, song cycle, or specific composer's work from actors' point of view. Students develop skills in research, character observation, and improvisation. Emphasis on creating and sustaining character through singing. Letter grading.

**135F. Singing: Individual Instruction. (1)** Studio, one hour. Requisite: course 35B. Designed to advance proper vocal technique, focusing on breath support, vowel shape, range expression, and overall mastery of vocal instrument. May be repeated four times for credit. Letter grading.



**136. Advanced Acting for Stage. (4)** Studio, four hours. Requisite: course 123. Study and practice of art of acting through progression to more advanced acting problems. May be repeated twice for credit. Consecutive enrollment with same instructor not permitted. Total units for courses 136, 137A, 137B, and 137C may not exceed 12 units. Letter grading.

**137. Acting for the Camera. (4)** Lecture/studio, four to six hours. Requisite: course 116B. Designed to aid the actor in the transition from stage to film work. Examination of film production and its physical characteristics and the acting style needed for work in film and television. Students may perform in simulated studio setting on camera. May be repeated once for credit with instructor change. Letter grading.

**138. Special Problems in Performance Techniques. (4)** Studio, four hours. Study of complex problems in voice, movement, and acting. May be repeated twice for credit. P/NP or letter grading.

**139. Play Reading and Analysis. (5)** Lecture, three hours. Investigation of dramatic texts, with focus on play structure, plot, character, dialog, ideas, and various other elements essential to effective theatrical interpretation and realization. Letter grading.

**C146A-C146B. Art and Process of Entertainment Design. (4-4)** Lecture. Conceptualization, design, and prototyping of interactive theatrical events. Concurrently scheduled with courses C446A-C446B. Letter grading. **C146A.** Exploration of original forms of media-rich entertainment experience through lectures, presentations, and seminar participation. Students form collaborative teams to conceive and propose interactive entertainment events. **C146B.** Prototype development; two to five proposals to be more completely defined and developed. Students form collaborative teams for further conceptual development of their project proposals. May be repeated once for credit.

**147A. Drafting. (4)** Studio, four hours. Development of visual communication skills through drafting. Exploration of drafting for scenic and lighting designs. May be repeated once for credit. Letter grading.

**148. Special Courses in Design and Technical Theater. (4)** Lecture, three hours. Group study of selected subjects in design and technical theater. May be repeated twice for credit. P/NP or letter grading.

**149. Introduction to Design. (5)** Lecture, three hours. Exploration of interpretation of drama through design, including study of styles and techniques of design, collaborative role of designer, principles of design for scenery, lighting, costumes, and sound. Both technical and aesthetic groundwork for further study. Investigation of techniques for realization of designs in production. Letter grading.

**150. Theater Production and Performance. (1 to 2)** Laboratory, three to six hours. Laboratory experience in various aspects of theater production, including performance in project or production, stage management, member of crew, or assignment as designer or assistant on production. May be repeated for maximum of 8 units. Letter grading.

**C151A. Scenic Design. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of design. May be repeated once for credit. Concurrently scheduled with course C451A. Letter grading.

**C151B. Scenic Design for Theater. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Study of scenic design for proscenium, thrust, and arena configurations, multiset productions, and music theater. May be repeated once for credit. Concurrently scheduled with course C451B. Letter grading.

**C151C. Production Design for Film, Television, and Video. (4)** Lecture/studio, four hours. Study of role of art director, scenic design for single-camera and multi-camera production, and set decoration. May be repeated once for credit. Concurrently scheduled with course C451C. Letter grading.

**C152A. Lighting Design. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Study of lighting, with emphasis on imagination, text analysis, metaphor, and conceptualization. Investigation of composition

and control of light and color in relation to actor. May be repeated once for credit. Concurrently scheduled with course C452A. Letter grading.

**C152B. Lighting Design for Theater. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Study of lighting design for proscenium, thrust, and arena configurations, music theater, and concert lighting. May be repeated once for credit. Concurrently scheduled with course C452B. Letter grading.

**C152C. Lighting Design for Television. (4)** Lecture/studio, four hours. Study of current professional lighting design practices in television for single- and multiple-camera production. Concurrently scheduled with course C452C. Letter grading.

**C152D. Lighting Design for Performances and Special Events. (4)** Lecture, four hours. Requisites: courses C152A, C152B, C152C. Advanced topics in lighting design, including live performances for concerts, exhibitions, and live events. Concurrently scheduled with course C452D. Letter grading.

**C152E. Lighting Design for Dance. (4)** Lecture, four hours. Requisite: course C152A, C152B, or C152C. Advanced topics in lighting design, concentrating on live dance performance in all styles. Concurrently scheduled with course C452E. Letter grading.

**C153A. Costume Design. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C; for transfer students: course 149. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of design. May be repeated twice for credit. Concurrently scheduled with course C453A. Letter grading.

**C153B. Costume Design for Theater. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C; for transfer students: course 149. Study of costume design for proscenium, thrust, and arena configurations, multiset productions, and music theater. May be repeated twice for credit. Concurrently scheduled with course C453B. Letter grading.

**C153C. Costume Design for Film and Television. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C; for transfer students: course 149. Study of current professional costume design and wardrobe practices in film and television, including effect of differing media on design choices. May be repeated twice for credit. Concurrently scheduled with course C453C. Letter grading.

**C153D. Projects in Costume Design Management. (4)** Lecture, three hours. Examination of professional duties of costume designers, set costumers, and supervisors, especially management of production logistics, including but not limited to costume breakdowns, creating budgets, adhering to and overseeing them, as well as set costumer training for film and television, practicing on-set protocol, breakdown of daily responsibilities, and assembling set costumer kits ready for production. Practice with professional resourcefulness to move from abstract to substantive problem solving, maintaining creative and collaborative environment while adhering to logistical obstacles and tasks. Concurrently scheduled with course C453D. Letter grading.

**C153E. History of Costume Design in Movies. (4)** Lecture, three hours; screenings, two to six hours. History of costume design within context of 20th-century fashion and film history, including evolution of role of costume designer since early days of film industry. Role of costume designer and contribution of costume design to cinematic storytelling. Concurrently scheduled with course C453E. Letter grading.

**C153F. Practice of Costume Design for Film Productions. (4)** Lecture, three hours. Introduction to costume design as tool for storytelling, exploring integration of costume design and filmmaking process and what it takes to bring characters to life. Skills needed to effectively costume short narrative films, including script breakdown, collaboration with directors and actors, and how to manage production challenges. Concurrently scheduled with course C453F. Letter grading.

**C154A. Sound Design. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Introduction to sound and audio in acoustic, audio, and digital do-

main. Study and practice of techniques for recording, editing, and creating soundscapes. May be repeated once for credit. Concurrently scheduled with course C454A. Letter grading.

**C154B. Sound Design for Musicals. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Exploration of sound design for theater and techniques for mixing, reinforcement, and signal processing. Topics include use of delay, equalization, and microphone placement for theater sound reinforcement with focus on mixing musicals. Covers paperwork needed to complete show. Tuning space, equalization, and some advanced projects involving programming and mixing on various consoles. May be repeated once for credit. Concurrently scheduled with course C454B. Letter grading.

**C154C. Sound for Film and Television. (4)** Lecture/studio, four hours. Study of current professional sound recording, rerecording, mixing, and synchronization practices for film and television. Concurrently scheduled with course C454C. Letter grading.

**C154D. Script Analysis for Sound Design. (4)** (Formerly numbered C144C.) Lecture/studio, four hours. Requisites: courses C154A, C154B. Advanced study and practice in preparation of theater sound design with emphasis on analysis of script and score, conceptual development of design, and techniques to realize design. Concurrently scheduled with course C454D. Letter grading.

**C154F. Field Recording and Content Creation for Sound Designers. (4)** Lecture/studio, four hours. Requisites: courses C154A, C154B. Advanced techniques for creating content, focused on field recording and capturing sounds and their application for performance. Concurrently scheduled with course C454F. Letter grading.

**C154G. Music Technology for Sound Design. (4)** Lecture/studio, four hours. Requisites: courses C154A, C154B. Overview of music, musical genres, and their structure with goal of understanding music composition. Students use software to create musical ideas and sound design components. Concurrently scheduled with course C454G. Letter grading.

**C155A. Graphic Representation of Design: Perspective Drawing. (2)** Studio, four hours. Requisite: course 147A or 147B. Introduction to use of pencil and pen to communicate scenic designs, including one- and two-point perspective, form light, shade, and textures. Concurrently scheduled with course C455A. Letter grading.

**C155B. Graphic Representation of Design: Multimedia Rendering. (2)** Studio, four hours. Study and practice of multimedia rendering techniques as they relate to interpretation of scenic, lighting, and costume renderings, with focus on human form in space. Weekly demonstrations of wide variety of art media, including watercolor, markers, pastel, and collage rendering. May be repeated twice for credit. Concurrently scheduled with course C455B. Letter grading.

**C155C. Graphic Representation of Design: Digital Rendering. (2)** Studio, four hours. Study and practice in rendering costumes, lighting, and scenic elements with combination of hand and digital rendering techniques. Coverage of rendering from life, enhancing final rendering with variety of computer-assisted formats to create polished sophisticated presentations for theater, film, and television productions. May be repeated twice for credit. Concurrently scheduled with course C455C. Letter grading.

**C155D. Graphic Representation of Design: Model Making. (2)** Studio, four hours. Requisite: course 147A or 147B. Study of model for representation of scenic designs from initial working prototypes to finished color models. Use of wide variety of materials and techniques for execution of model. Concurrently scheduled with course C455D. Letter grading.

**C155E. Graphic Representation of Design: Life Drawing. (2)** Studio, four hours. Requisite: course 147A or 147B. Study and practice in drawing of human form. May be repeated twice for credit. Concurrently scheduled with course C455E. Letter grading.

**C155F. Graphic Representation of Design: Costume Rendering. (2)** Studio, four hours. Requisite: course 147A or 147B. Study of techniques for rendering theatrical costumes, with emphasis on figure, clothing, and fabrics. May be repeated twice for credit. Concurrently scheduled with course C455F. Letter grading.

**C155G. Graphic Representation of Design: Scene Painting Techniques. (2)** Studio, four hours. Requisite: course 147A or 147B. Study of scenic painting techniques and materials and their realization of color design and elevations. May be repeated once for credit. Concurrently scheduled with course C455G. Letter grading.

**C155H. Selected Topics in Graphic Representation of Design. (2)** Studio, six hours. Group study of selected subjects in techniques for interpretation of design for theater. May be repeated once for credit. Concurrently scheduled with course C455H. Letter grading.

**C156A. Introduction to Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drawing and editing techniques, drawing floor plan sections, and elevation drawings using AutoCAD. Concurrently scheduled with course C456A. Letter grading.

**C156B. Advanced Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drafting techniques for scenic and lighting designs using AutoCAD. Concurrently scheduled with course C456B. Letter grading.

**C156C. Computer-Assisted Rendering. (4)** Studio, four hours. Investigation of three-dimensional lighting and scenic design previsualization: wire-frame perspective drawing and photo-realistic computer rendering techniques using three-dimensional studio. Concurrently scheduled with course C456C. Letter grading.

**C156D. Introduction to Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drawing and editing techniques, drawing floor plan sections, and elevation drawings using Vectorworks. Concurrently scheduled with course C456D. Letter grading.

**C156E. Advanced Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drafting techniques for scenic and lighting designs using Vectorworks. Concurrently scheduled with course C456E. Letter grading.

**C156F. Introduction to Computer-Assisted Rendering. (4)** Studio, four hours. Investigation of three-dimensional lighting and scenic design previsualization: wire-frame perspective drawing and photo-realistic computer rendering techniques using Vectorworks. Concurrently scheduled with course C456F. Letter grading.

**C156G. Virtual Reality Rendering for Film. (2)** Studio, four hours. Requisites: courses C155C, C155H, C156A, C156B, C156C. Preparation: basic 3D modeling and rendering skills. Students learn how to translate 3D models developed in Maya into Unreal virtual game engine environment, and utilize this platform as powerful tool for development, presentation, and staging of film and theater set design. Students primarily use, Autodesk Maya and Unreal gaming engine, but are also introduced to Zbrush, Blender, Quixel, and other ancillary resources. Concurrently scheduled with course C456G. Letter grading.

**C157A-C157B-C157C. Costume Construction Techniques. (2-2-2)** Studio, four hours. Study of theory and application of drafting, pattern making, fitting, and construction techniques for period costumes and undergarments to achieve authentic-appearing costume using contemporary methods. Each course may be repeated once for credit. Concurrently scheduled with courses C457A-C457B-C457C. P/NP or letter grading. **C157A.** Requisites: courses 14A, 14B, 14C. Introduction to draping, pattern grading fitting, and slash and spread adaptation. **C157B.** Requisite: course C157A. Introduction to costume drafting, construction of period undergarments. **C157C.** Requisites: courses C157A, C157B. Draping, patterning, and fitting techniques for period garments.

**C158A. Scenic Design Technology. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Investigation of materials, systems, and techniques for realization of scenic designs for theater, film, and television. Study of advanced techniques and materials for construction, finishing, and rigging of scenery and properties. Concurrently scheduled with course C458A. Letter grading.

**C158B. Lighting Design Technology. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Investigation of materials, systems, and techniques for realization of lighting designs for theater, film, and television. Study of design, operation, and performance of lighting instruments, dimming equipment, and control systems, including automated fixtures, projection equipment, and computer systems for lighting. Concurrently scheduled with course C458B. Letter grading.

**159. Design Portfolio Project. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Preparation of complete designs and drawings for production and assembly of design portfolio and résumé. Projects prepared under guidance of faculty adviser. Letter grading.

**160. Fundamentals of Play Direction. (5)** Lecture, two hours; laboratory, four hours. Requisite: course 15 with grade of C or better. Course 121 may be taken concurrently. Basic theories of play direction and their application through preparation of scenes under rehearsal conditions. P/NP or letter grading.

**163A. Directing for Stage. (4)** Lecture/studio, four hours. Requisite: course 15. Intensive development of primary directing skills and process, including text analysis and exploration of craft fundamentals as basis for director/actor communication and effective staging. Students direct scenes from plays under laboratory conditions. Letter grading.

**163B. Directing for Stage. (4)** Lecture/studio, four hours. Requisite: course 15. Further development of craft elements of directorial method, with additional emphasis on psychological aspects of director/actor communication. Students direct scenes under laboratory conditions in alternative stage configurations. Letter grading.

**163C. Directing for Stage. (4)** Lecture/studio, four hours. Requisite: course 15. Culminating development of directorial methods, with particular emphasis on challenges of style in text and production. Students direct scenes under laboratory conditions in alternative stage configurations. Letter grading.

**C163D. Directing Project for Stage. (5)** Discussion, three hours; laboratory, four to eight hours. Requisites: courses 163A, 163B, 163C. Application of stage directing techniques in production of short play or project. Students direct one-act play or project. May be repeated once for credit. Concurrently scheduled with course C263D. Letter grading.

**167A. Career Preparation for Actor. (2)** Lecture/studio, three to four hours. Requisite: course 116B. Preparation for professional career as actor in film, television, theater, and commercials. Topics include audition preparation, head shots, résumés, agents, managers, casting directors, producers, unions, survival skills, professional development. Letter grading.

**167B. Audition Preparation for Singing Actor. (2)** Lecture/studio, three hours. Requisite: one course from 134A through 135F. Audition preparation for singing actor, providing various techniques to prepare for and successfully execute professional musical theater auditions. Letter grading.

**170. Design and Production Project. (4)** Laboratory, eight hours. Requisites: courses 14A, 14B, 14C. Experience as stage manager or designer, including participation in preparation and realization of scenic, lighting, costume, or sound designs, or stage management in production. May be repeated once for credit. Letter grading.

**171A. Advanced Theater Laboratory. (1 to 4)** Laboratory, to be arranged. Creative participation as actor or stage manager in public presentation of departmental productions. May be taken for maximum of 4 units. P/NP or letter grading.

**171B. Advanced Theater Laboratory. (1 to 4)** Laboratory, to be arranged. Creative participation in realization of production elements related to public presentation of departmental productions. May be taken for maximum of 4 units. P/NP or letter grading.

**172. Production Practice in Theater, Film, Video, and Digital Media. (1 to 8)** Studio, three to eight hours. Exploration and laboratory experience in one or more various aspects of production and postproduction practice for entertainment media, including theater, film, video, and digital media. May be repeated for maximum of 24 units. Letter grading.

**173A. Design Assignment: Assistant Designer. (2)** Studio, six hours. Requisites: courses 14A, 14B, 14C. Laboratory experience as assistant designer, including participation in preparation and realization of scenic, lighting, costume, or sound designs. May be repeated twice. Letter grading.

**173B. Production Design Assignment: Designer. (2)** Studio, six hours. Requisites: courses 14A, 14B, 14C. Laboratory experience as designer, including preparation and realization of scenic, lighting, costume, or sound designs. May be repeated twice. Letter grading.

**174A. Stage Managing Techniques. (2)** Studio, six hours. Requisites: courses 14A, 14B, 14C. Professional duties of stage manager. Problems of unions, professional auditions, organization, scheduling, out-of-town openings, Broadway openings, and responsibilities of lengthy run. Letter grading.

**174B. Project in Stage Management. (3)** Studio, nine hours. Requisite: course 174A. Laboratory experience in professional duties of assistant stage manager, including participation as assistant stage manager in preproduction, rehearsal, and performance phases of productions. May be repeated once for credit. Letter grading.

**174C. Project in Stage Management. (4)** Studio, 12 hours. Requisite: course 174A. Laboratory experience in professional duties of stage manager, including participation as stage manager in preproduction, rehearsal, and performance phases of productions. Problems of unions, auditions, organization, scheduling, and responsibilities of lengthy run. May be repeated three times for credit. Letter grading.

**174D. Advanced Stage Management Techniques. (2)** Lecture, two hours; studio, two hours. Requisites: courses 147A, 174A. Professional duties of stage management. Practical training, including paper techniques, dry techniques, cue 2 cue, preshow setup, performance reports, and quick change rehearsals. Letter grading.

**175A-175C-175D. Summer Theater Workshops. (4 or 8 each)** Laboratory, 12 to 24 hours. Participation in various aspects of theater production and performance. Offered in summer only. Letter grading.

**175B. Summer Theater Workshop. (1 to 4)** Laboratory, three hours. Participation in various aspects of theater production and performance. Offered in summer only. Letter grading.

**C176A-C176B-C176C. Production Practice in Theater with Emerging Technologies I, II, III. (4-4-4)** Studio/laboratory, four to six hours. Collaborative creative and technical development of all aspects of theatrical production incorporating emerging and/or advanced technologies, culminating in rehearsal and public presentation. Offered as series of up to three courses in cases where multiple quarters are needed to prepare production. Concurrently scheduled with course C476A-C476B-C476C. Letter grading.

**177. Computer-Assisted Design Techniques. (4)** Studio, six hours. Hands-on exploration of use of computers for design of scenery and lighting in theater, film, and television. May be repeated once for credit. Offered in summer only. Letter grading.

**M178. Film and Television Acting Workshop. (2)** (Same as Film and Television M177.) Laboratory, four hours. Workshop providing opportunities for students to rehearse, perform, and evaluate scenes. Three different production styles to which performers may need to adjust are (1) preproduction rehearsals with director, (2) single-camera experience, and (3) multiple-camera experience. May be repeated twice for credit. Letter grading.

**180. Senior Project. (4)** Lecture or studio, three hours. Prerequisites: courses 101A, 101B. Preparation of conceptual or creative project to provide culminating experience in production of creative or research work. May be repeated twice for credit. Letter grading.

**181. Career Development for Actors. (2)** Lecture, three hours; fieldwork, three hours. Limited to seniors. Study of business practices, career entry, and development for actors. P/NP or letter grading.

**C185A. Role of Producer in Professional Theater. (2)** Lecture, three hours. Study of structure governing economic and artistic decision-making processes in professional theater of America. Concurrently scheduled with course C285A. P/NP or letter grading.

**C185B. Role of Management in Educational and Community Theater. (2)** Lecture, three hours. Study of artistic, social, and economic criteria in administration of educational and community theater. Concurrently scheduled with course C285B. P/NP or letter grading.

**M187. Art Alive: Art and Improvisation in Museums. (4)** (Same as Honors Collegium M116.) Seminar, four hours. Offered in collaboration with Los Angeles County Museum of Art (LACMA). Interpretation of art in collection through acting, dialogues, movement, and music. Research into history and art history and production of creative performance piece required. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced prerequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced prerequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**195. Community or Corporate Internships in Theater, Film, and Television. (2, 4, or 8)** Tutorial, eight, 16, or 24 hours. Limited to juniors/seniors. Internship at various theaters, studios, or entertainment organizations accentuating creative contributions, organization, and work of professionals in their various specialties. Students meet on regular basis with instructor and provide periodic reports of their experience. May be taken for maximum of 8 units. Individual contract with supervising faculty member required. Letter grading.

**199. Directed Research or Senior Project in Theater. (2 to 8)** Tutorial, to be arranged. Limited to juniors/seniors. Research under guidance of faculty mentor. Supervised individual research or investigation. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**205A-205B-205C. Background of Theatrical Art. (5-5-5)** Seminar, three hours. Designed for graduate students. Analysis of major plays, commentaries, and historical materials. S/U or letter grading. **205A.** Clas-

sical and Medieval Periods; **205B.** Renaissance, Baroque, and Rococo Periods; **205C.** Romantic, Naturalistic, and Symbolist Periods.

**206. Themes in World Theater and Drama. (5)** Seminar, four hours. Designed for graduate students. Selected topics in world theater history, drama, production, and/or architecture organized on thematic basis. May be repeated four times for credit. S/U or letter grading.

**208C. Practicum in Dramaturgy. (2 to 12)** Laboratory, to be arranged. Prerequisites: courses 208A, 208B. Demonstration of competence in practice of dramaturgy through completion of approved dramaturgical assignment. May be taken for maximum of 12 units. Letter grading.

**210. Topics in World Theater and Drama. (5)** Seminar, three hours. Designed for graduate students. Investigation of selected topics in world theater, drama, production, and architecture. May be repeated four times for credit. S/U or letter grading.

**C212. Emerging Technologies and Their Uses in Live Performance. (4)** (Formerly numbered C437.) Seminar, four hours. Survey of major emerging and contemporary technologies and their potential uses in and impact on live performance, from augmented and virtual reality to electronic textiles, Internet of Things, and Modern approaches to artificial intelligence. Offers solid basis for engaging in future collaborations with technologists, for self-study of new technologies, and, for those already more familiar with digital technologies, theoretical background for engaging with social context of these technologies. Concurrently scheduled with course C112. S/U or letter grading.

**216A. Approaches to Representation. (5)** Lecture, three hours; laboratory, one hour. Overview of strategies of representation from classical aesthetic theories to postmodern deconstructions of them. May be repeated once for credit. Letter grading.

**216B. Approaches to History. (5)** Lecture, three hours; laboratory, one hour. Overview of key methodologies, theories, and debates in historiography of theater and performance linked to plays and performances appropriate to approach. Letter grading.

**216C. Approaches to Identification. (5)** Lecture, three hours; laboratory, one hour. Overview of key theories, methods, debates, and performance texts of identificatory structure between audience member or scholar and theatrical or performance object. Letter grading.

**220. Graduate Forum. (1 to 4)** Seminar, one to four hours. Limited to graduate theater students. Presentation and discussion of issues informing and affecting contemporary theater. May be repeated four times for credit. S/U grading.

**221. Introduction to Performance Studies. (5)** Seminar, three hours. Investigation of performance as sustained practice in traditional disciplines such as theater, music, and dance and as lens to focus thinking about human experience in fields such as philosophy, literature, cultural anthropology, linguistics, education, and law. Emphasis on establishing interdisciplinary dialogue across many fields. Letter grading.

**C222. Character Development through Makeup and Hair Design. (2)** Studio, four hours. Examination of importance of makeup and hair design in film. History and overview of hair and makeup in fashion and motion pictures. Collaboration of makeup artists and hairstylists with costume designer, actors, production designer, and director to conceptualize people in script. Exploration of makeup artist and hairstylist roles in current film, television, and theater productions and skills needed to design makeup and hair for film and television productions. Concurrently scheduled with course C122. Letter grading.

**CM229. Contemporary Topics in Theater, Film, and Television. (2)** (Same as Film and Television CM229.) Lecture, two hours; screenings, two hours. Limited to junior/senior and graduate theater/film and television students. Examination of creative process in theater, film, and television, with consideration of writing, direction, production, and performance. Overview of individual contributions in collaborative effort; examination of distinctiveness and interrelations among these arts. Individual units include participation of leading

members of theater, film, and television professions. May be repeated twice for credit. Concurrently scheduled with course CM129. S/U or letter grading.

**230A-230B-230C. Writing for Contemporary Theater. (4 to 8 each)** Lecture, three hours; studio, two hours. Designed for graduate students. Letter grading. **230A.** One-Act Play. Analysis of strategy and dramatic structure of selected contemporary short plays leading to guided completion and critique of student-written one-act plays. **230B.** Full-Length Play. Analysis of strategy and dramatic structure of selected contemporary full-length plays leading to guided completion and critique of student-written full-length play. **230C.** Performance and Text. Exploration of structural strategies, political implications, and technical demands of selected contemporary American plays leading to guided completion and critique of student work.

**231. Special Topics in Playwriting. (4)** Lecture, three hours. Analysis and practice of various aspects of playwriting. Variable content selected from topics such as comedy writing, docudrama, experimental theater, writing for alternative audiences, or children's theater. May be repeated twice for credit. Letter grading.

**232. Manuscript Analysis. (4)** Lecture, three hours. Designed for graduate students. Critical and constructive study of dramatic techniques as employed by playwrights and screenwriters in selected examples of contemporary work. May be repeated once for credit. S/U or letter grading.

**242. Introduction to Design in Production. (4)** Lecture or studio, four hours. Introduction to process of design for entertainment, collaborative role of designer, and realization of designs in production. May be repeated once for credit. Letter grading.

**243A-243B-243C. Scenic Design. (4-4-4)** Studio, four hours. Advanced study and practice in scenic design for theater. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of design. May be repeated once for credit. S/U or letter grading.

**244A. Advanced Theater Production. (2 to 8)** Studio, 12 to 24 hours. Designed for graduate students. Creative participation in preparation and presentation of theatrical production. May be taken for maximum of 8 units. Letter grading.

**246A-246B-246C. History of Costume. (4-4-4)** Lecture/studio, four hours. Designed for graduate students. Study of history of costume as manifestation of cultural, social, economic, and political influences to provide historical framework for design of costumes for theater, film, and television. Historic survey and in-depth exploration of selected periods, with study of influences of diverse cultures. Letter grading.

**246D. History of Costume Design. (4)** Lecture, four hours. Study of history of costume as manifestation of cultural, social, economic, and political influences to provide historical framework for design of costumes for theater, film, and television. Historic survey and in-depth exploration of selected periods, with study of influences of diverse cultures. Letter grading.

**260. Directing I. (4)** Lecture, four hours; studio, 24 hours. Designed for graduate students. Development of directorial skills of analysis, planning, staging, and criticism through medium of written preparations and directing of scenes. Letter grading.

**261. Directing Post-Realist Drama. (4)** Lecture, four hours; studio, 30 hours. Designed for graduate students. Problems in direction of post-realist plays through interpretation and laboratory scene work. Letter grading.

**262. Directing II. (4)** Studio, six hours. Practical exploration for generating original performances and composing works for stage. Introduction to processes of key contemporary artists across globe. Letter grading.

**263. Production Project in Direction for Stage. (2 to 8)** Discussion, one hour; studio, 12 to 30 hours. Designed for graduate students. Direction of dramatic work, with discussion and critique of work in progress. May be repeated for maximum of 20 units. Letter grading.

**C263D. Directing Project for Stage.** (5) Discussion, three hours; laboratory, four to eight hours. Requisites: courses 163A, 163B, 163C. Application of stage directing techniques in production of short play or project. Students direct one-act play or project. May be repeated once for credit. Concurrently scheduled with course C163D. Letter grading.

**264. Directing Classical and Historical Drama.** (4) Lecture, four hours; studio, 30 hours. Designed for graduate students. Problems in interpretation and direction of historical or classical drama through medium of laboratory scene work. May be repeated once for credit. Letter grading.

**265. Modern Theories of Production.** (4) Lecture, four hours. Examination of modern theories of production from emergence of director in 19th century to present. Investigation of different responses to problems of creating vital theatrical event in context of ongoing evolution of theater as art form. Examination of contribution of significant directors and movements; relation between theater and other forms of representation. Letter grading.

**266. Theatrical Conceptualization.** (4) Lecture, four hours. Examination of process of conceptualization in dramatic production; centrality of theateric conceptualization in interpretation of dramatic text; exploration of range of possibilities inherent in different theatrical spaces and options in design components. Consideration of visual arts and music as sources of stimulus for theatrical conceptualization, with focus on collaborative aspect of theatrical production. Letter grading.

**272. Production Practice in Theater, Film, Video, and Digital Media.** (1 to 8) Studio, three to eight hours. Exploration and laboratory experience in one or more various aspects of production and postproduction practice for entertainment media, including theater, film, video, and digital media. May be repeated for maximum of 24 units. Letter grading.

**C285A. Role of Producer in Professional Theater.** (2) Lecture, three hours. Designed for graduate students. Study of structure governing economic and artistic decision-making processes in professional theater of America. Concurrently scheduled with course C185A. S/U or letter grading.

**C285B. Role of Management in Educational and Community Theater.** (2) Lecture, three hours. Designed for graduate students. Study of artistic, social, and economic criteria in administration of educational and community theater. Concurrently scheduled with course C185B. S/U or letter grading.

**298A-298B. Special Studies in Theater Arts.** (2 or 4 each) Lecture/discussion, two or four hours. Designed for graduate students. Seminar study of problems in theater arts, organized on topic basis. Each course may be repeated once for credit. S/U or letter grading.

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**C404E. History of Design Décor Part I: Architecture and Décor—Antiquity to Early Neoclassical.** (4) Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of pre-Renaissance architectural and interior décor as manifestation of cultural, social, economic, and political influences to provide historical framework for design of scenery, costumes, and lighting for theater, film, and television. May be repeated once for credit. Concurrently scheduled with course C104E. Letter grading.

**C404F. History of Design Décor Part II: Architecture and Décor—Industrial Revolution to 21st Century.** (4) Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of post-Renaissance architectural and interior décor as manifestation of cultural, social, economic, and political influences to provide historical framework for design of scenery, costumes, and lighting for theater, film, and television. May be repeated once for credit. Concurrently scheduled with course C104F. Letter grading.

**C404G. History of Design for Performance Production Part I: Historic Costume from Prehistoric to Neoclassical.** (4) Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of historic costume as manifestation of cultural, social, economic, and political influences to provide historical framework for design of costumes for theater, film, and television. Survey of history of Western costume and civilian attire. Concurrently scheduled with course C104G. Letter grading.

**C404I. History of Design for Performance Production Part II: Historic Costume from Neoclassical to 21st Century.** (4) Lecture, four hours. Requisites: courses 14A, 14B, 14C. Study of historic costume as manifestation of cultural, social, economic, and political influences to provide historical framework for design of costumes for theater, film, and television. Survey of history of Western costume and civilian attire with global emphasis. Concurrently scheduled with course C104I. Letter grading.

**C404J. History of Design for Performance Production: Selected Topics of Décor and Costume Design History.** (4) Lecture, four hours. Requisites: courses 14A, 14B, 14C. Historic survey and in-depth exploration of selected periods and subcategories of décor and costume. Visual representation, with emphasis on influences of global diverse cultures. May be repeated three times for credit. Concurrently scheduled with course C104J. Letter grading.

**420A. Advanced Acting I.** (4) Studio, five to 13 hours. Advanced training for actor, challenging body's core, and energy and concentration needed for performance. Deepening awareness of personal, physical idiosyncrasies, acting tendencies, and body and breath control. Letter grading.

**420B. Advanced Acting I.** (4) Studio, six to 18 hours. Scene work, usually from 20 to 30 minutes in length. Continuation of work on off-stage preparation, with further development of how actor goes about doing research and fieldwork on character being played. Letter grading.

**420C. Advanced Acting for Camera.** (4) Studio, six to eight hours. Practice in performance techniques for film and television. Exploration of language used by actors and directors in film and television production, and subtle differences between acting for stage and camera. Letter grading.

**421A. Advanced Acting: Shakespeare.** (4 to 8) Studio/laboratory, six to 18 hours. Extending idea of autobiography and using it as art. Actor as performance artist. Playing characters quite removed from oneself. Using language. Using Shakespeare and oneself to play him. Letter grading.

**421B. Advanced Acting: Classical and Historical Drama.** (4) Studio/laboratory, six to eight hours. Concepts related to Greek choruses and historical plays. Addresses group concentration and communication, choral breathing, awareness of kinetic relationship of performer's body in space, and relationship of emotion to movement, and voice. Letter grading.

**421C. Advanced Acting and Craft for Actor.** (4) Studio/laboratory, six hours. Advanced acting with focus on craft, inclusive of physicality of thought, details of realism, tempo, shared rhythm and relating movement to text, and audition technique. Letter grading.

**422. Advanced Acting for Theater, Film, and Television.** (8 to 12) Studio/laboratory, eight to 12 hours. Intensive performance experience. May be repeated for maximum of 24 units. Letter grading.

**423. Advanced Acting for Virtual Environments.** (4) Studio, six to eight hours. Synthesizing gesture, action, and characterization into scene work for virtual reality, motion capture, and other emerging performance capture techniques. May be repeated twice for credit. Letter grading.

**424A. Advanced Voice and Text.** (2) Studio, three to six hours. Development of voice for stage, including exercises for relaxation, breathing, bodily alignment, diaphragmatic breathing, head and chest resonance, and warm-up. Application of vocal techniques on contemporary and classical texts, including U.S. dialects and scansion of verse in Shakespeare. Letter grading.

**424B. Vowels and Voice Placement.** (1) Studio, three hours. Requisite: course 424A. Builds on course 424A. Introduction of vowel diphthongs and triphthongs; development of forward sound, including consistent thought energy. Exercises to develop, and text to implement forward sound, including consistent thought energy. Text and warm-up exercises also covered. Letter grading.

**424C. Voice in Action.** (1) Studio, three hours. Requisite: course 424A. Physical explorations and techniques for breath sourcing and increasing awareness of voice in action. Sensory awareness work, Linklater and Barry techniques, and Knight-Thompson model may also be explored. Letter grading.

**424D. Articulation, Pitch, and Vocal Choices.** (1) Studio, three hours. Requisites: courses 424A, 424B, 424C. Corequisite: course 424E. Focus on articulation: work consonants, nasal continuants, plosives, fricatives, continuants, laterals, and glides, as well as pitch and safest expanding vocal range and pitch. Exploration also of warm-ups, actions with vocal choices, and exercises with monologues. Letter grading.

**424E. Vocal Strength and Flexibility.** (1) Studio, three hours. Requisites: courses 424A, 424B, 424C. Corequisite: course 242D. Further exploration of physical and vocal techniques to strengthen development of effective support for forward tone and clear speech. Exploration of functional anatomy method of Françoise Mézières and Thérèse Bertherat and de-structuring/restructuring work of Catherine Fitzmaurice. Letter grading.

**424F. Advanced Vocal Range and Flexibility.** (1) Studio, three hours. Dynamic use of vocal range, including tempo, volume, pitch, resonance, actions, and physical presence. Text work focuses on developing vocal and physical flexibility and techniques designed to keep one's instrument safe while effectively communicating character. Letter grading.

**424G. Advanced Vocal Dynamics.** (1) Studio, three hours. Extended range, resonance, and vocal power in support of clear, forward speech. Further fluency with vocal resonance in relation to acoustical properties of performance spaces. Using vivid vocal engagement to support dynamic expression of demanding texts, with attention to varieties of tempo, volume, pitch, resonance, range, etc. Letter grading.

**424H. Classical Vocal Comedy and Performance.** (1) Studio, three hours. Creating characters using generative possibilities of rhyming couplets. Special focus on Molière's verse comedies. Letter grading.

**424I. Phonetics, Dialects, and Accents.** (1) Studio, three hours. Use of phonetics to enhance actor's ability to create character using dialect and accents. Culminating dialect presentation project required. Letter grading.

**424J. Acting for Microphone.** (2) Studio, four to six hours. Techniques including textual analysis and character work in art and craft of acting for microphone. Letter grading.

**425A. Advanced Movement I.** (2 or 4) Studio/laboratory, three to six hours. Discovery of body's unique language through exercises designed to explore and free total instrument. Development of flexible actor with range, expression, and confidence physically. May be repeated for maximum of 12 units. Letter grading.

**425B-425C. Advanced Movement I.** (2 or 4 each) Studio/laboratory, three to six hours. Discovery of body's unique language through exercises designed to explore and free total instrument. Development of flexible actor with range, expression, and confidence physically. Awakening of imagination while exploring worlds of ritual, animal, conceptual, and modern dance movements. Letter grading.

**425D. Advanced Training Intensive.** (2) Studio, 12 to 15 hours per week for four weeks. Advanced training class, challenging body's core, energy, and concentration needed for performance. Deepening awareness of personal, physical idiosyncrasies and acting tendencies, body and breath control. May be repeated once for credit. Letter grading.



**425E. Advanced Conditioning and Combat for Theater, Film, and Television. (2)** Studio, six hours. Body conditioning, basic striking skills, tumbling, breakfalls, redirection of energy, stunts, gymnastics, martial arts, use of weapons, and integration of skills in performance contexts. Letter grading.

**425F. Advanced Movement II. (2 or 4)** Studio/laboratory, three to six hours. Presentation of more complete picture of stage movement and its relationship to theater, music, and dance. Advancement of physical training of individual actors to their maximum potential. Experience in techniques and discovery of origins of variety of acrobatic and dance disciplines, including ballet, ballroom, period dance, and circus techniques. Letter grading.

**425G-425H-425I. Advanced Movement III. (2 or 4 each)** Studio, three to six hours. Advanced physical training for actors in one or more movement, dance, or combat discipline: capoeira, martial arts, ballet, ballroom, period dance, circus techniques. Letter grading.

**426A-426B-426C. Alexander Techniques. (2 or 4 each)** Studio, three to six hours. Study and practice in Alexander techniques as method of developing balance, poise, and coordination of body and mind. Exploration of use of rhythm to expand movement potential of actors and relevant use of visual arts and animal studies to character development and to expansion of movement potential. Letter grading.

**430A-430B-430C. Advanced Studies in Playwriting. (4 to 8 each)** Lecture, three hours. Limited to MFA playwriting program students. Guided completion of full-length scripts for stage. S/U or letter grading.

**431. Special Topics in Playwriting. (4)** Discussion, three hours. Designed for MFA playwriting program students. Analysis and practice of varied aspects of playwright's art. Variable content selected from topics such as comedy writing, docudrama, writing for alternative audiences, adaptation from stage to screen, children's theater, or improvisational techniques. May be repeated twice for credit. S/U or letter grading.

**432. Theatrical Adaptation. (4)** Lecture, three hours. Requisites: courses 230A, 230B, 230C. Survey of contemporary adaptation for stage, with selected readings of playwriting adaptation techniques, and outline and development of adaptation for stage. Letter grading.

**C433A. Script Development Workshops. (4 to 8)** Lecture, three hours; studio, four to 24 hours. Designed for graduate students. Guided process of script development, with emphasis on communication, artistic growth, and professional process. May be taken for maximum of 8 units. Concurrently scheduled with course C133A. Letter grading.

**433B. Script Development Workshop. (4 to 8)** Lecture, three hours; studio, four to 24 hours. Designed for graduate students. Guided process of script development, with emphasis on communication, artistic growth, and professional process. May be taken for maximum of 8 units. Letter grading.

**435AF-435AW-435AS. Problems in Advanced Writing for Stage. (0-0-2)** Lecture, two hours. Limited to MFA candidates. Review discussion and critique of playwriting projects. Each course may be repeated for maximum of 6 units. In Progress (435AF, 435AW) and S/U (435AS) grading.

**441A. Lighting Design. (4)** Lecture/studio, four hours. Study and practice in lighting actors, emphasizing textual and character analysis from lighting designer's perspective, conceptual development with director, effect of light on dynamics of staging, use of color in light, and relationship of lighting designer to actor. May be repeated once for credit. Letter grading.

**441B. Lighting Design. (4)** Lecture/studio, four hours. Study of use of light and color to define space, effect of light on scenery and costumes, lighting for arena/thrust theaters, multiscenic productions, lighting patterns, and moving scenery. May be repeated once for credit. Letter grading.

**441C. Lighting Design. (4)** Lecture/studio, four hours. Investigation of lighting design in production, musical theater, opera, touring, and repertory situations. Study of analysis of script and score for lighting designer. May be repeated once for credit. Letter grading.

**441D. Scenic Projection and Media Techniques. (4)** Lecture/laboratory, four hours. Designed for graduate students. Advanced study and practice in scenic projection and media techniques, with emphasis on analysis, design, and execution of theatrical projection and photographic technique for stage. May be repeated once for credit. S/U or letter grading.

**442A-442B-442C. Costume Design. (4-4-4)** Lecture/studio, four hours. Advanced study and practice in costume design for theater. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, period style, and character analysis leading to visual presentation of design. Study of costume design for theatrical productions, ballet, opera, and musical theater. Each course may be repeated once for credit. Letter grading.

**443A-443D. Advanced Scenic Design. (4 each)** Studio, four hours. Advanced study and practice of scenic design for theater, with emphasis on cultivating imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of design, as well as exploration of students' individual cognitive and artistic process and refinement of techniques. Each course may be repeated twice for credit. S/U or letter grading.

**445A-445B-445C. Production Design for Film, Television, and Entertainment Media. (4-4-4)** Lecture/studio, four hours. Study and practice in design of scenic environment for film, video, and entertainment media, including effect of differing media on design choices, role of production designers and art directors, and design for single- and multiple-camera production. Each course may be repeated once for credit. Letter grading.

**C446A-C446B. Art and Process of Entertainment Design. (4-4)** Lecture, three hours. Conceptualization, design, and prototyping of interactive theatrical events. Concurrently scheduled with courses C146A-C146B. Letter grading. **C446A.** Exploration of original forms of media-rich entertainment experience through lectures, presentations, and seminar participation. Students form collaborative teams to conceive and propose interactive entertainment events. **C446B.** Prototype development; two to five proposals to be more completely defined and developed. Students form collaborative teams for further conceptual development of their project proposals. May be repeated once for credit.

**448A-448B-448C. Costume Design for Film, Television, and Entertainment Media. (4-4)** Lecture/studio, four hours. Study and practice in design of costumes for live and virtual characters in film, television, and entertainment media, including effect of differing media on design choices. Courses 448A and 448B may be repeated once for credit; course 448C may be repeated twice for credit. Letter grading.

**448D. Deconstructing Glamour. (4)** Lecture, three hours; screenings, two hours. Exploration of integration of costume design into filmmaking process and illumination of work required to bring characters from written page to life. Letter grading.

**449A. Design Thesis Preparation. (2)** Lecture/studio, four hours. Series of group design projects that prepare design students for thesis examination. In Progress grading (credit to be given only on completion of courses 449B and 449C).

**449B. Design Thesis Preparation. (2)** Lecture/studio, four hours. Series of group design projects that prepare design students for thesis examination. In Progress grading (credit to be given only on completion of course 449C).

**449C. Design Thesis Project. (4)** Lecture/studio, four hours. Series of group design projects that serve as comprehensive examination for MFA degree in entertainment design. Review and evaluation of projects by design faculty members from all areas of curriculum. Letter grading.

**449D. Thesis for Costume Design in Theater, Film, and Television. (4)** Lecture/studio, four hours. For costume design students. One major scenography design project that serves as comprehensive examination for MFA degree in entertainment design. Re-

view and evaluation of projects by design faculty members from all areas of curriculum. May be repeated once for credit. Letter grading.

**C451A. Scenic Design. (4)** Lecture/studio, four hours. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of design. May be repeated once for credit. Concurrently scheduled with course C151A. Letter grading.

**C451B. Scenic Design for Theater. (4)** Lecture/studio, four hours. Study of scenic design for proscenium, thrust, and arena configurations, multiset productions, and music theater. May be repeated once for credit. Concurrently scheduled with course C151B. Letter grading.

**C451C. Production Design for Film, Television, and Video. (4)** Lecture/studio, four hours. Study of role of art director, scenic design for single-camera and multi-camera production, and set decoration. May be repeated once for credit. Concurrently scheduled with course C151C. Letter grading.

**C452A. Lighting Design. (4)** Lecture/studio, four hours. Study of lighting, with emphasis on imagination, text analysis, metaphor, and conceptualization. Investigation of composition and control of light and color in relation to actor. May be repeated once for credit. Concurrently scheduled with course C152A. Letter grading.

**C452B. Lighting Design for Theater. (4)** Lecture/studio, four hours. Study of lighting design for proscenium, thrust, and arena configurations, music theater, and concert lighting. May be repeated once for credit. Concurrently scheduled with course C152B. Letter grading.

**C452C. Lighting Design for Television. (4)** Lecture/studio, four hours. Study of current professional lighting design practices in television for single- and multiple-camera production. Concurrently scheduled with course C152C. Letter grading.

**C452D. Lighting Design for Performances and Special Events. (4)** Lecture, four hours. Requisites: courses C452A, C452B, C452C. Advanced topics in lighting design, including live performances for concerts, exhibitions, and live events. Concurrently scheduled with course C152D. Letter grading.

**C452E. Lighting Design for Dance. (4)** Lecture, four hours. Requisite: course C441A, C441B, or C441C. Advanced topics in lighting design, concentrating on live dance performance in all styles. Concurrently scheduled with course C152E. Letter grading.

**C453A. Costume Design. (4)** Lecture/studio, four hours. Imagination as impetus for design, text analysis, metaphor, and conceptualization. Investigation of design research process, composition, and style leading to visual presentation of design. May be repeated twice for credit. Concurrently scheduled with course C153A. Letter grading.

**C453B. Costume Design for Theater. (4)** Lecture/studio, four hours. Study of costume design for proscenium, thrust, and arena configurations, multiset productions, and music theater. May be repeated twice for credit. Concurrently scheduled with course C153B. Letter grading.

**C453C. Costume Design for Film and Television. (4)** Lecture/studio, four hours. Study of current professional costume design and wardrobe practices in film and television, including effect of differing media on design choices. May be repeated twice for credit. Concurrently scheduled with course C153C. Letter grading.

**C453D. Projects in Costume Design Management. (4)** Lecture, three hours. Examination of professional duties of costume designers, set costumers, and supervisors, especially management of production logistics, including but not limited to costume breakdowns, creating budgets, adhering to and overseeing them, as well as set costumer training for film and television, practicing on-set protocol, breakdown of daily responsibilities, and assembling set costumer kits ready for production. Practice with professional resourcefulness to move from abstract to substantive problem solving, maintaining creative and collaborative environment

while adhering to logistical obstacles and tasks. Concurrently scheduled with course C153D. Letter grading.

**C453E. History of Costume Design in Movies. (4)** Lecture, three hours; screenings, two to six hours. History of costume design within context of 20th-century fashion and film history, including evolution of role of costume designer since early days of film industry. Role of costume designer and contribution of costume design to cinematic storytelling. Concurrently scheduled with course C153E. Letter grading.

**C453F. Practice of Costume Design for Film Productions. (4)** Lecture, three hours. Introduction to costume design as tool for storytelling, exploring integration of costume design and filmmaking process and what it takes to bring characters to life. Skills needed to effectively costume short narrative films, including script breakdown, collaboration with directors and actors, and how to manage production challenges. Concurrently scheduled with course C153F. Letter grading.

**C454A. Sound Design. (4)** Lecture/studio, four hours. Introduction to sound and audio in acoustic, audio, and digital domain. Study and practice of techniques for recording, editing, and creating soundscapes. May be repeated once for credit. Concurrently scheduled with course C154A. Letter grading.

**C454B. Sound Design for Musicals. (4)** Lecture/studio, four hours. Exploration of sound design for theater and techniques for mixing, reinforcement, and signal processing. Topics include use of delay, equalization, and microphone placement for theater sound reinforcement with focus on mixing musicals. Covers paperwork needed to complete show. Tuning space, equalization, and some advanced projects involving programming and mixing on various consoles. May be repeated once for credit. Concurrently scheduled with course C154B. Letter grading.

**C454C. Sound for Film and Television. (4)** Lecture/studio, four hours. Study of current professional sound recording, rerecording, mixing, and synchronization practices for film and television. Concurrently scheduled with course C154C. Graduate students expected to produce designs demonstrating higher level of proficiency and skill. Letter grading.

**C454D. Script Analysis for Sound Design. (4)** (Formerly numbered C444C.) Lecture/studio, four hours. Requisites: courses C454A, C454B. Advanced study and practice in preparation of theater sound design with emphasis on analysis of script and score, conceptual development of design, and techniques to realize design. Concurrently scheduled with course C154D. Letter grading.

**C454F. Field Recording and Content Creation for Sound Designers. (4)** Lecture/studio, four hours. Requisites: courses C454A, C454B. Advanced techniques for creating content, focused on field recording and capturing sounds and their application for performance. Concurrently scheduled with course C154F. Letter grading.

**C454G. Music Technology for Sound Design. (4)** Lecture/studio, four hours. Requisites: courses C454A, C454B. Overview of music, musical genres, and their structure with goal of understanding music composition. Students use software to create musical ideas and sound design components. Concurrently scheduled with course C154G. Letter grading.

**C455A. Graphic Representation of Design: Perspective Drawing. (2)** Studio, four hours. Requisite: course 147A or 147B. Introduction to use of pencil and pen to communicate scenic designs, including one- and two-point perspective, form light, shade, and textures. Graduate students expected to produce drawings demonstrating higher level of proficiency and skill. Concurrently scheduled with course C155A. Letter grading.

**C455B. Graphic Representation of Design: Multimedia Rendering. (2)** Studio, four hours. Study and practice of multimedia rendering techniques as they relate to interpretation of scenic, lighting, and costume renderings, with focus on human form in space. Weekly demonstrations of wide variety of art media, including

watercolor, markers, pastel, and collage rendering. May be repeated twice for credit. Concurrently scheduled with course C155B. Letter grading.

**C455C. Graphic Representation of Design: Digital Rendering. (2)** Studio, four hours. Study and practice in rendering costumes, lighting, and scenic elements with combination of hand and digital rendering techniques. Coverage of rendering from life, enhancing final rendering with variety of computer-assisted formats to create polished sophisticated presentations for theater, film, and television productions. May be repeated twice for credit. Concurrently scheduled with course C155C. Letter grading.

**C455D. Graphic Representation of Design: Model Making. (2)** Studio, four hours. Requisite: course 147A or 147B. Study of model for representation of scenic designs from initial working prototypes to finished color models. Use of wide variety of materials and techniques for execution of model. Graduate students expected to produce models demonstrating higher level of proficiency and skill. Concurrently scheduled with course C155D. Letter grading.

**C455E. Graphic Representation of Design: Life Drawing. (2)** Studio, four hours. Requisite: course 147A or 147B. Study and practice in drawing of human form. May be repeated twice for credit. Concurrently scheduled with course C155E. Letter grading.

**C455F. Graphic Representation of Design: Costume Rendering. (2)** Studio, four hours. Requisite: course 147A or 147B. Study of techniques for rendering theatrical costumes, with emphasis on figure, clothing, and fabrics. May be repeated twice for credit. Concurrently scheduled with course C155F. Letter grading.

**C455G. Graphic Representation of Design: Scene Painting Techniques. (2)** Studio, four hours. Requisite: course 147A or 147B. Study of scenic painting techniques and materials and their realization of color design and elevations. May be repeated once for credit. Concurrently scheduled with course C155G. Letter grading.

**C455A. Selected Topics in Graphic Representation of Design. (2)** Studio, six hours. Group study of selected subjects in techniques for interpretation of design for theater. May be repeated once for credit. Concurrently scheduled with course C155H. Letter grading.

**C456A. Introduction to Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drawing and editing techniques, drawing floor plan sections, and elevation drawings using AutoCAD. Concurrently scheduled with course C156A. Letter grading.

**C456B. Advanced Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drafting techniques for scenic and lighting designs using AutoCAD. Concurrently scheduled with course C156B. Letter grading.

**C456C. Computer-Assisted Rendering. (4)** Studio, four hours. Investigation of three-dimensional lighting and scenic design previsualization: wire-frame perspective drawing and photo-realistic computer rendering techniques using three-dimensional studio. Concurrently scheduled with course C156C. Letter grading.

**C456D. Introduction to Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drawing and editing techniques, drawing floor plan sections, and elevation drawings using Vectorworks. Concurrently scheduled with course C156D. Letter grading.

**C456E. Advanced Computer-Assisted Drafting. (4)** Studio, four hours. Requisite: course 147A. Investigation of drafting techniques for scenic and lighting designs using Vectorworks. Concurrently scheduled with course C156E. Letter grading.

**C456F. Introduction to Computer-Assisted Rendering. (4)** Studio, four hours. Investigation of three-dimensional lighting and scenic design previsualization: wire-frame perspective drawing and photo-realistic computer rendering techniques using Vectorworks. Concurrently scheduled with course C156F. Letter grading.

**C456G. Virtual Reality Rendering for Film. (2)** Studio, four hours. Requisites: courses C455C, C455H, C456A, C456B, C456C. Preparation: basic 3D modeling and rendering skills. Students learn how to translate 3D models developed in Maya into Unreal virtual game engine environment, and utilize this platform as powerful tool for development, presentation, and staging of film and theater set design. Students primarily use, Autodesk Maya and Unreal gaming engine, but are also introduced to Zbrush, Blender, Quixel, and other ancillary resources. Concurrently scheduled with course C156G. Letter grading.

**C457A-C457B-C457C. Costume Construction Techniques. (2-2-2)** Studio, four hours. Study of theory and application of drafting, pattern making, fitting, and construction techniques for period costumes and undergarments to achieve authentic-appearing costume using contemporary methods. Each course may be repeated once for credit. Concurrently scheduled with courses C157A-C157B-C157C. S/U or letter grading. **C457A.** Requisites: courses 14A, 14B, 14C. Introduction to draping, pattern grading fitting, and slash and spread adaptation. **C457B.** Requisite: course C457A. Introduction to costume drafting, construction of period undergarments. **C457C.** Requisites: courses C457A, C457B. Draping, patterning, and fitting techniques for period garments.

**457D. Advanced Historical Costume Interpretation and Construction. (4)** Lecture/studio, four hours. Introduction to costume design as tool for interpretation of one renowned artwork and as intrinsic element of art history to gain expertise in costume and pattern making, while creating half-scale costume inspired by masterwork and to gain familiarity with artist's life and social milieu. Letter grading.

**C458A. Scenic Design Technology. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Investigation of materials, systems, and techniques for realization of scenic designs for theater, film, and television. Study of advanced techniques and materials for construction, finishing, and rigging of scenery and properties. Concurrently scheduled with course C158A. Letter grading.

**C458B. Lighting Design Technology. (4)** Lecture/studio, four hours. Requisites: courses 14A, 14B, 14C. Investigation of materials, systems, and techniques for realization of lighting designs for theater, film, and television. Study of design, operation, and performance of lighting instruments, dimming equipment, and control systems, including automated fixtures, projection equipment, and computer systems for lighting. Concurrently scheduled with course C158B. Letter grading.

**459A-459B. Directing for Theater, Film, and Television. (4-4)** Lecture, three hours. Limited to graduate theater students. Analysis and exploration, with specific scenes, of differences and many similarities in directorial approach to same literary material in three media. S/U or letter grading.

**460AF-460AW-460AS. Contemporary Issues in Direction. (1-1-1)** Discussion, three hours. Designed for graduate students. Discussion of role of director in contemporary professional practice. Review discussion and critique of directing projects. Each course may be repeated for maximum of 4 units. Letter grading.

**462. Advanced Directing. (8 or 12)** Studio, 12 or 30 hours. Designed for graduate students. Advanced problems in directing for theater, film, and television. May be repeated for maximum of 24 units. Letter grading.

**463. Production Project in Direction for Stage (8 or 12 units).** Studio, 24 hours. Designed for graduate students. Creative participation as director in conceptualization and preparation of dramatic work. Letter grading.

**472. Production Practice in Theater, Film, Video, and Digital Media. (1 to 8)** Studio, three to eight hours. Exploration and laboratory experience in one or more various aspects of production and postproduction practice for entertainment media, including theater, film, video, and digital media. May be repeated for maximum of 24 units. Letter grading.

**474. Advanced Projects in Design and Production.** (4) Lecture/studio, four hours. Study and practice in preparation and execution of designs for theater, film, video, and related entertainment forms. As contributing artistic member of design team, creative responsibilities include designer, technical supervisor, or production manager. May be repeated for maximum of 16 units. Letter grading.

**475A. Graduate Design Portfolio Project: Scenic Design.** (2) Lecture, four hours; studio, four to eight hours. Preparation: at least six master scenic design courses. Preparation of complete designs and drawings for theatrical, film, operatic, and theoretical productions and assembling of design portfolio and résumé. Information about industry demands and protocol for portfolio presentation and review, with projects prepared under guidance of respective design faculty adviser. Letter grading.

**475B. Graduate Design Portfolio Project: Lighting Design.** (2) Lecture, four hours; studio, four to eight hours. Preparation: at least six master lighting design courses. Preparation of complete designs and drawings for theatrical, film, operatic, and theoretical productions and assembling of design portfolio and résumé. Information about industry demands and protocol for portfolio presentation and review, with projects prepared under guidance of respective design faculty adviser. Letter grading.

**475C. Graduate Design Portfolio Project: Costume Design.** (2) Lecture, four hours; studio, four to eight hours. Preparation: at least six master costume design courses. Preparation of complete designs and drawings for theatrical, film, operatic, and theoretical productions and assembling of design portfolio and résumé. Information about industry demands and protocol for portfolio presentation and review, with projects prepared under guidance of respective design faculty adviser. Letter grading.

**C476A-C476B-C476C. Production Practice in Theater with Emerging Technologies I, II, III.** (4-4-4) Studio/laboratory, four to six hours. Collaborative creative and technical development of all aspects of theatrical production incorporating emerging and/or advanced technologies, culminating in rehearsal and public presentation. Offered as series of up to three courses in cases where multiple quarters are needed to prepare production. Concurrently scheduled with course C176A-C176B-C176C. Letter grading.

**495A-495B-495C. Practicum and Practice in Teaching Theater.** (2-2-2) Seminar, to be arranged; discussion, two hours. Study and practice of teaching theater at university level. Orientation and preparation of graduate (PhD) students who have responsibility to assist in teaching undergraduate courses in department. Discussion of problems common to teaching experience. S/U grading.

**498. Professional Internship in Theater, Film, and Television.** (4, 8, or 12) Tutorial, to be arranged. Full- or part-time at studio or on professional project. Designed for advanced MFA students. Internship at various film, television, or theater facilities accentuating creative contribution, organization, and work of professionals in their various specialties. Given only when projects can be scheduled. S/U or letter grading.

**501. Cooperative Program.** (2 to 8) Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596A. Directed Individual Studies: Research.** (2 to 12) Tutorial, to be arranged. Designed for graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596B. Directed Individual Studies: Writing.** (2 to 12) Tutorial, to be arranged. Designed for graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596C. Directed Individual Studies: Directing.** (2 to 12) Tutorial, to be arranged. Designed for graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596D. Directed Individual Studies: Design.** (2 to 12) Tutorial, to be arranged. Designed for graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596E. Directed Individual Studies: Acting.** (2 to 12) Tutorial, to be arranged. Designed for graduate students. May be repeated with consent of instructor. S/U or letter grading.

**596F. Directed Individual Studies: Production.** (2 to 12) Tutorial, to be arranged. Designed for graduate students. May be repeated with consent of instructor. S/U or letter grading.

**597. Preparation for PhD Qualifying Examinations in Theater Arts.** (2 to 12) Tutorial, to be arranged. Writing of prospectus and three reading lists. May be repeated for credit. S/U grading.

**599. PhD Dissertation in Theater Arts.** (2 to 12) Tutorial, to be arranged. Preparation: advancement to PhD candidacy. Research for and writing of PhD dissertation. May be repeated for credit. S/U grading.

## THEATER, FILM, AND TELEVISION SCHOOLWIDE PROGRAMS

*School of Theater, Film, and Television*

103 East Melnitz Building  
Box 951622  
Los Angeles, CA 90095-1622

**Student Services Office**  
310-206-8441

### Overview

Highly motivated students in a School of Theater, Film, and Television major who find that no single major accommodates their specific interest in a given subject may propose designing their own major. Proposals are prepared with faculty guidance and sponsorship and are thoroughly examined for cogency, completeness, and academic merit.

### Undergraduate Major

#### Individual Field BA in Theater, Film, and Television

Highly motivated students in a School of Theater, Film, and Television major who find that no single major accommodates their specific interest in a given subject may propose designing their own major. Proposals are prepared with faculty guidance and sponsorship and are thoroughly examined for cogency, completeness, and academic merit.

The student, in consultation with the faculty adviser, develops an individualized plan for a course of study that either combines two or more fields or creates a wholly new field. This plan cannot replicate any existing UCLA undergraduate majors.

### Learning Outcomes

The Individual Field major has the following learning outcomes:

- Development of individualized course of study
- Demonstrated competency in discourse of disparate disciplines on which the major draws
- Completion of capstone project or thesis that synthesizes coursework into a culminating project
- Demonstrated competency in the literature and/or artistic traditions pertinent to chosen course of study

## UNIVERSITY STUDIES

*College of Letters and Science*

A316 Murphy Hall  
Box 951430  
Los Angeles, CA 90095-1430

**University Studies**

310-206-1697

Muriel C. McClendon, PhD, *Chair*

### Faculty Committee

Frank A. Laski, PhD (*Molecular, Cell, and Developmental Biology*)

David W. MacFadyen, PhD (*Comparative Literature, Musicology*)

Elizabeth A. Marchant, MA (*Comparative Literature, Gender Studies*)

Muriel C. McClendon, PhD (*History*)

William I. Newman, PhD (*Earth, Planetary, and Space Sciences; Mathematics; Physics and Astronomy*)

### Overview

Available to all undergraduate students, the University Studies curriculum seeks to promote academic success and meaningful engagement. Courses are tailored to specific undergraduate populations and are designed to introduce students to the research university and academic culture of UCLA. Beyond addressing themes of academic success, the courses also introduce students to the unique opportunities and experiences available at a large research university. For more information, contact [Marian Gabra](#).

## University Studies

### Lower-Division Courses

**10A. ACE UCLA | Critical Strategies to Achieve Undergraduate Excellence (First- and Second-Year Students).** (2) Seminar, two hours. Not open for credit to students with credit for course 10B, 10C, 10D, 10E, 10F, or former course 10. Imparts students with critical strategies to achieve undergraduate excellence at top-tier research institution. Study of research university's mission, rigors, and expectations of students, as well as its pedagogical implications. Cultivation of formal space on campus where UCLA students learn to engage collaboratively with their diverse community of scholars; to comprehend and apply effective learning strategies and theoretical foundations of college stu-

dent development; to navigate complex structure of UCLA; to practice resilience and growth mindset; to think critically about diversity and their identity; and to be fully aware of their value to intellectual fabric of institution as contributors to innovative research and scholarship. P/NP grading.

**10B. ACE UCLA | Critical Strategies to Achieve Undergraduate Excellence for International Students.** (2) Seminar, two hours. Not open to students who have completed University Studies 10A, 10C, 10D, or former course 10. Designed to assist first-year international students in making successful transition to UCLA and to U.S. by focusing on academic, social, and emotional aspects of transition. Study of research university's history, mission, rigors, expectations of students, and pedagogical implications. Cultivation of formal space on campus where UCLA students learn to engage both diplomatically and collaboratively with diverse community of scholars; to comprehend and apply theoretical foundations of college student development; to navigate complex structure of UCLA; and to be fully aware of their value to intellectual fabric of institution as contributors to innovative research and scholarship. P/NP grading.

**10C. ACE UCLA | Critical Strategies to Achieve Undergraduate Excellence for Life Science Students.** (2) Seminar, two hours. Not open for credit to students with credit for course 10A, 10B, 10D, 10E, 10F, or former course 10. Imparts students interested in or pursuing majors in life sciences with critical strategies to achieve undergraduate excellence at top-tier research institution. Study of research university's mission, rigors, and expectations of students, as well as its pedagogical implications. Cultivation of formal space on campus where UCLA students learn to engage collaboratively with their diverse community of scholars; to comprehend and apply effective learning strategies and theoretical foundations of college student development; to navigate complex structure of UCLA; to practice resilience and growth mindset; to think critically about diversity and their identity; and to be fully aware of their value to intellectual fabric of institution as contributors to innovative research and scholarship. P/NP grading.

**10D. ACE UCLA | Critical Strategies to Achieve Undergraduate Excellence for Incoming Transfer Students.** (2) Seminar, two hours. Not open for credit to students with credit for course 10A, 10B, 10C, 10E, 10F, or former course 10. Designed for transfer students. Imparts students with critical strategies to achieve undergraduate excellence at top-tier research institution. Study of research university's mission, rigors, and expectations of students, as well as its pedagogical implications. Cultivation of formal space on campus where UCLA students learn to engage collaboratively with their diverse community of scholars; to comprehend and apply effective learning strategies and theoretical foundations of college student development; to navigate complex structure of UCLA; to practice resilience and growth mindset; to think critically about diversity and their identity; and to be fully aware of their value to intellectual fabric of institution as contributors to innovative research and scholarship. P/NP grading.

**10E. ACE UCLA | Critical Strategies to Achieve Undergraduate Excellence for First-Generation Students.** (2) Seminar, two hours. Not open for credit to students with credit for course 10A, 10B, 10C, 10D, 10F, or former course 10. Designed for first-generation college students. Imparts students with critical strategies to achieve undergraduate excellence at top-tier research institution. Study of research university's mission, rigors, and expectations of students, as well as its pedagogical implications. Cultivation of formal space on campus where UCLA students learn to engage collaboratively with their diverse community of scholars; to comprehend and apply effective learning strategies and theoretical foundations of college student development; to navigate complex structure of UCLA; to practice resilience and growth mindset; to think critically about diversity and their identity; and to be fully aware of their value to intellectual fabric of institution as contributors to innovative research and scholarship. P/NP grading.

**10F. ACE UCLA | Critical Strategies to Achieve Undergraduate Excellence for Humanities Students.**

(2) Seminar, two hours. Not open to students who have completed University Studies 10A, 10B, 10C, 10D, 10E, or former course 10. Designed for first-year students. Study of research university's history, mission, rigors, expectations of students, and pedagogical implications. Cultivation of formal space on campus where UCLA students learn to explore majors in humanities and identify transferable skills; to engage collaboratively with their diverse community of scholars; to comprehend and apply effective learning strategies and theoretical foundations of college student development; to navigate complex structure of UCLA; to practice resilience and growth mindset; to think critically about diversity and their identity; and to be fully aware of their value to intellectual fabric of institution as contributors to innovative research and scholarship. P/NP grading.

**15A. Collaborative Learning Workshops for Humanities and Social Sciences Majors.** (2) Seminar, two hours. Designed for students in First Year Scholars Program (FYSP). Part I of three-part series of collaborative learning and community-building work sessions. Collaborative work spaces and participatory learning environments are integral component of student development. Creates specific and unique space for FYSP scholars to cultivate community and support, as well as develop critical strategies to achieve undergraduate excellence at top-tier institution. Engages students collaboratively with diverse community of scholars; supports their understanding and application of effective learning strategies; guides students in practice growth mindset, navigation of complex structure of UCLA, thinking critically about diversity and their identity, and being fully aware of their value to intellectual fabric of institution as contributors to innovative research scholarship. P/NP grading.

**15B. Collaborative Learning Workshops for Humanities and Social Sciences Majors.** (2) Seminar, two hours. Requisite: course 15A. Designed for students in First Year Scholars Program. Workshops are integral component of student learning and development. Continues to cultivate learning communities. Workshops prepare students for second year, as they become more intentionally engaged in academic community, at UCLA and beyond. Workshops foster academic, professional, and personal development of students majoring in humanities and social sciences. Instructors, peer mentors, and campus partners facilitate interactive workshops that help students transition to, engage with, and navigate UCLA as they culminate their first year at university. P/NP grading.

**15C. Collaborative Learning Workshops for Humanities and Social Sciences Majors.** (2) Seminar, two hours. Requisite: course 15B. Designed for students in First Year Scholars Program (FYSP). Part III of three-part series of collaborative learning and community-building work sessions. Students work together on ongoing research proposal and project presented at culmination of program. Collaborative work spaces and participatory learning environments are integral component of student development. Creates specific and unique space for FYSP scholars to cultivate community and support, as well as develop critical strategies to achieve undergraduate excellence at top-tier institution. Engages students collaboratively with diverse community of scholars; supports their understanding and application of effective learning strategies; guides students in practice growth mindset, navigation of complex structure of UCLA, thinking critically about diversity and their identity, and being fully aware of their value to intellectual fabric of institution as contributors to innovative research scholarship. P/NP grading.

**30. How to Succeed at UCLA: Retention.** (2) Seminar, two hours. Limited to students in Bruin Readmission Program. Designed to provide students who are working toward readmission critical understanding of how they and others arrive at their dismissal status and steps they can take that lead to academic success in future. Examination of research on retention and departure in high education and both individual and collective strategies for academic success. P/NP grading.

## Graduate Course

**375. Teaching Apprentice Practicum.** (1 to 4) Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

## URBAN PLANNING

*Meyer and Renee Luskin School of Public Affairs*

3357 Public Affairs Building  
Box 951656  
Los Angeles, CA 90095-1656

**Urban Planning**

310-825-2892

**Department e-mail**

**Michael K. Manville, PhD, Chair**

## Faculty Roster

### Professors

Eric R. Avila, PhD (*Waldo W. Neirkirk Term Professor*)  
Evelyn A. Blumenberg, PhD  
Dana Cuff, PhD  
Susanna B. Hecht, PhD  
Anastasia Loukaitou-Sideris, PhD  
Michael K. Manville, PhD  
Adam S. Millard-Ball, PhD  
Paavo Monkkonen, PhD  
Vinit Mukhija, PhD  
Ananya Roy, PhD (*Meyer and Renee Luskin Professor of Inequality and Democracy*)  
Michael A. Stoll, PhD  
Michael C. Storper, PhD  
Brian D. Taylor, PhD  
Veronica Terriquez, PhD  
Christopher C. Tilly, PhD  
Abel Valenzuela, Jr., PhD  
Frederick J. Zimmerman, PhD

### Professors Emeriti

Randall D. Crane, PhD  
J. Eugene Grisby III, PhD  
Allan D. Heskin, PhD, LLB  
Shirley Hune, PhD  
James E. Lubben, DSW  
Paul M. Ong, PhD  
Donald C. Shoup, PhD  
Lois M. Takahashi, PhD

### Associate Professors

Amada Armenta, PhD  
Kian Goh, PhD  
Veronica Herrera, PhD  
Michael C. Lens, PhD  
Kirsten Schwarz, PhD  
V. Kelly Turner, PhD

### Assistant Professors

Elizabeth C. Koslov, PhD  
José Loya, PhD  
Marques A. Vestal, PhD



## Adjunct Professor

Gregory S. Pierce, PhD

## Overview

The professional urban planner works on the creation and management of the urban environment, including its physical, economic, and social elements. Housing, transportation, air and water quality, the preservation of historic communities, and the development of community-level economic and employment programs are some of the tasks undertaken by recent graduates of the Department of Urban Planning.

The department takes pride in its collegial atmosphere. It features a lively mix of students from diverse academic backgrounds, drawn from many foreign countries and from every avenue of American life. It includes many members of racial and ethnic minority groups, and more than half the students are women. Student organizations provide an interesting program of extracurricular activities.

## Career Prospects

Graduates have taken positions in local, state, and national governments, and increasingly with nonprofit and private companies whose products and services affect the urban environment. While most UCLA graduates find positions in the U.S., the program offers the opportunity to specialize in development planning abroad, including rural development, and many graduates have found positions in Latin America, Africa, and Asia.

## Undergraduate Minor

### Urban and Regional Studies Minor

The scale, diversity, balkanized governance, and natural environment of Southern California all contribute to making it an extraordinary natural laboratory for learning about urban and regional issues, whether the focus is on immigration, employment, the built environment, transportation, poverty, natural resources, or a host of other challenges. The Urban and Regional Studies minor offers undergraduate students a means to address some of these issues from an interdisciplinary perspective, giving a balanced mixture of theory, practice, and service learning courses.

### Admission

To enter the minor, students must be in good academic standing with an overall grade-point average of 2.0 or better, have completed 90 or more units, and complete either Urban Planning M120 (or Public Affairs M109) or 121 with a grade of C or better. An introductory course in geography, political science, public affairs, or sociology is recommended. For more information, contact the [undergraduate advising office](#).

### The Minor

*Required Courses (28 units):* (1) Urban Planning M120 (or Public Affairs M109) or 121 with a

grade of C or better; (2) five elective courses selected from Public Affairs 110, 120, 121, 140, M142, 148, 149, M153, 154, M157, M159, M160, M161, Urban Planning M120 (unless taken under item 1), 121 (unless taken under item 1), CM151, M161, M167, M168 (electives may be added as additional undergraduate courses are offered; any urban planning course from 100-199 is permitted); (3) capstone course selected from Public Affairs 195, 195CE, 199, Urban Planning 185XP, 195, or 199, or an additional upper-division elective course (minimum 4 units) selected from the list above.

### Policies

By petition, courses outside the Luskin School of Public Affairs may be applied as an elective for the minor. No more than two courses from outside the Luskin School of Public Affairs may be applied toward the minor.

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade, and students must have an overall grade-point average of 2.0 or better in the minor. Successful completion of the minor is indicated on the transcript and diploma.

## Graduate Majors

### Master of Urban and Regional Planning

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

#### Concurrent Degree Programs

Concurrent degree programs allow students to reduce the number of courses required for two degrees, since some courses may apply to both degrees.

- Master of Urban and Regional Planning/Community Health Sciences Master of Public Health
- Master of Urban and Regional Planning/Environmental Health Sciences Master of Public Health
- Master of Urban and Regional Planning/Juris Doctor
- Master of Urban and Regional Planning/Latin American Studies MA
- Master of Urban and Regional Planning/Master of Architecture
- Master of Urban and Regional Planning/Master of Business Administration

## Master of Urban and Regional Planning – Institut d'Études de Paris

In this dual degree program, students receive a Master in Governing the Large Metropolis from the Urban School of Sciences Po in Paris and a Master of Urban and Regional Planning from the Urban Planning Department at UCLA.

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Urban Planning PhD

### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

## Urban Planning

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program.** (1 to 2) Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**M110. Inequality and Democracy: Analysis and Praxis of Public Problems.** (4) (Same as Social Welfare M110.) Lecture, three hours; discussion, one hour. Analysis and praxis of public problems. Taking up case of persistent inequality in liberal democracies, coverage of key frameworks and methodologies for understanding and analyzing poverty and inequality and examination of forms of action, from role of government to social movements, that seek to intervene in such problems. Study of problems, programs, policies, and politics in globally interconnected, transnational world, while avoiding analytical divide between global north and global south. Letter grading.

**M120. Introduction to Cities and Planning.** (4) (Same as Public Affairs M109.) Lecture, three hours; discussion, one hour. Survey of urban history and evolution in U.S., urban social theory, current growth trends,

system of cities, urban economy and economic restructuring, traditional and alternative location theories, urban transportation, and residential location and segregation. Letter grading.

**121. Urban Policy and Planning. (4)** Lecture, three hours. Examination of current urban planning and policy issues and debates, such as normative theories of good urban form, metropolitan organization and governance, economic development and growth management, edge cities, spatial mismatch hypothesis, urban poverty, racial/ethnic inequality, gender and urban structure, sustainability, and future of cities. P/NP or letter grading.

**M122. Policy, Planning, and Community. (4)** (Same as Asian American Studies M108.) Lecture, three hours; field laboratory. Project-oriented methods course on conducting needs assessment in Asian American communities. Geographic information systems to be used to define problems and needs. Letter grading.

**129. Special Topics in Urban Policy and Research. (4)** Lecture, three hours. Examination of particular planning/policy subfield (e.g., economic development, environmental planning, housing and community development, international planning and development, land use, or urban design) in some depth. Specific topic area rotates depending on instructor. May be repeated for credit with topic change. P/NP or letter grading.

**130. Fundamentals of Urban and Regional Economics. (4)** Lecture, three hours. Preparation: one introduction to microeconomics course. Most U.S. population lives and works in urbanized areas, and world's population is becoming more urbanized with each passing decade. National, state, and local governments are engaged in managing, planning, policy-making, and governance in urban context. Ultimate efficacy of those public activities can be enhanced by understanding of economic forces acting on urban areas. Basic concepts related to location choice, agglomeration effects, economies of scale, and specialization by cities and transportation. P/NP or letter grading.

**CM137. Southern California Regional Economy. (4)** (Same as Labor Studies M180.) Lecture, three hours. Introduction to regional economy, with emphasis on Los Angeles. Key economic sectors, labor market composition, and review of conflicting portrayals depicting dynamics of region. Two all-day bus tours of key economic regions and guest lectures by regional experts included. Concurrently scheduled with course C237C. Letter grading.

**M140. Issues in Latina/Latino Poverty: Mexican and Central American Voices from Los Angeles. (4)** (Same as Chicana/o and Central American Studies M121 and Labor Studies M121.) Lecture, four hours. Examination of key issues (work, housing, and neighborhoods) in urban poverty, with particular focus on Mexican and Central American immigrant populations in Los Angeles. Exploration of major theoretical models that explain urban poverty and application of them in comparative context while exploring differences between Mexican and Central American immigrants. Social conditions and forces that help us understand lives of poor people in comparative context while looking at differences between two major Latino-origin populations in Los Angeles. Critical analysis of new forms of urban poverty in contemporary American society. Letter grading.

**141. Planning with Minority Communities. (4)** Lecture, three hours. Overview of planning history, theory, and contemporary issues that affect low-income communities, communities of color, and underserved neighborhoods, particularly in Los Angeles area. Field of planning offers distinct perspectives and opportunities for improving vulnerable communities. Topics range from discussion of intersection between race and income, critical race theory, community development, residential segregation, spatial mismatch, and environmental justice to social justice. P/NP or letter grading.

**M150. Transportation Geography. (4)** (Same as Geography M153.) Lecture, three hours. Designed for juniors/seniors. Study of geographical aspects of trans-

portation, with focus on characteristics and functions of various modes and on complexities of intra-urban transport. P/NP or letter grading.

**CM151. Parking and City. (4)** (Same as Public Affairs M153.) Lecture, three hours. Prerequisite: Economics 1 or 11 or Public Affairs 40. Parking is misunderstood link between transportation and land use. Transportation engineers typically assume that free parking simply is there at end of most trips, while urban planners treat parking as transportation issue that engineers must study. No profession is intellectually responsible for parking, and everyone seems to assume that someone else is doing hard thinking. Mistakes in planning for parking help to explain why planning for transportation and land use has in many ways gone slowly, subtly, incrementally wrong. Study of theory and practice of planning for parking and examination of how planning for parking in U.S. has become planning for free parking. Exploration of new ways to improve planning for parking, transportation, and land use. Concurrently scheduled with C251. Letter grading.

**CM157. Built Environment and Health. (4)** (Same as Public Affairs M157.) Lecture, three hours. Exploration of important linkages between urban-built environment and public-health outcomes using ecological, urban planning, and community-based lenses through theory and series of case studies. Knowledge of these linkages is used to propose ecological solutions to issues at nexus of built environment and public health. May be concurrently scheduled with course C285. Letter grading.

**M160. Environmental Politics and Governance. (4)** (Same as Environment M164.) Lecture, three hours. Environmental planning is more than simply finding problems and fixing them. Each policy must be negotiated and implemented within multiple, complex systems of governance. Institutions and politics matter deeply. Overview of how environmental governance works in practice and how it might be improved. Letter grading.

**M161. Urban Sustainability. (4)** (Same as Public Affairs M160.) Lecture, three hours. In 21st century, majority of Earth's population now lives in urban areas and virtually no part of globe remains untouched by human influence. Cities constitute crucibles of most pressing social and environmental challenges but are also potential centers of innovation for addressing those challenges. Examination of theory and practice from geography and related fields to understand many articulations of urban sustainability and how it might be achieved. Letter grading.

**M164A. Documentary Production for Social Change: Mobility in Los Angeles. (5)** (Same as Disability Studies M164A.) Seminar, three hours; fieldwork, two hours. Exploration of documentary filmmaking as catalyst for social change, using daily commute in Los Angeles as case study. Introduction to issues of race, ethnicity, gender, disability, and class on experiences of commuting, access to public transportation, and car-based versus alternative (bike and pedestrian) forms of commuting. Exposure to observational, interview-based, and participatory documentary shooting and editing techniques, as well as social marketing strategies that are vital to documentary production and distribution. Letter grading.

**M165. Environmentalism: Past, Present, and Future. (4)** (Same as Environment M125 and Geography M125.) Lecture, three hours; discussion, one hour. Exploration of history and origin of major environmental ideas, movements or countermovements they spawned, and new and changing nature of modern environmentalism. Introduction to early ideas of environmentalism, how rise of modern sciences reshaped environmental thought, and how this was later transformed by 19th-century ideas and rise of American conservation movements. Review of politics of American environmental thought and contemporary environmental questions as they relate to broader set of questions about nature of development, sustainability, and equity in environmental debate. Exploration of issues in broad context, including global climate change, rise of pandemics, deforestation, and environmental justice impacts of war. Letter grading.

**CM166. Global Environment and Development: Problems and Issues. (4)** (Same as Geography M127.) Lecture, three hours; discussion, one hour. Designed for juniors/seniors. Questions of population, resource use, Third World poverty, and environment. Analysis of global economic restructuring and its connections to changing organization of production and resulting environmental impacts. Case studies from Africa, Latin America, Asia, and U.S. Concurrently scheduled with course C266. P/NP or letter grading.

**M167. Environmental Justice through Multiple Lenses. (4)** (Same as Environment M167 and Public Affairs M161.) Lecture, three hours. Examination of intersection between race, economic class, and environment in U.S., with focus on issues related to social justice. Because environmental inequality is highly complex phenomenon, multidisciplinary and multi-population approach taken, using alternative ways of understanding, interpreting, and taking action. P/NP or letter grading.

**M168. Politics of Water. (4)** (Same as Public Affairs M159.) Lecture, three hours; discussion, one hour. Access to safe and sustainable water provision is major challenge for governments. Examination of political, economic, and social dimensions of water provision in Asia, Africa, Latin America, and U.S. Key issues include water and state building, market reforms and globalization, social mobilization, and citizen demand making strategies, role of crisis in citizen claims making. Letter grading.

**M171. Planning Issues in Latina/Latino Communities: Preserving and Strengthening Community Assets in Mexican and Salvadoran Los Angeles. (4)** (Same as Chicana/o and Central American Studies M122 and Labor Studies M122.) Lecture, four hours. How community and economic development interact, role of assets in community development, and unique synergies and pitfalls that enable or disable communities from developing to their potential. How to strengthen and how to preserve community resources in Pico-Union neighborhood in Los Angeles. Research entails historical analysis, reviews, interviews, electronic asset mapping, web-based data processing and analysis, oral and written reports, and cyber-based research. Letter grading.

**CM172. Labor and Economic Development. (4)** (Same as Labor Studies M171.) Lecture, three hours. Exploration of economic development and identification of ways that labor and labor unions directly and indirectly influence and shape economic development. Wide range of roles that labor plays, and could play, in promoting and supporting economic development for all. Concurrently scheduled with course C271B. Letter grading.

**M175. Women and Cities. (4)** (Same as Gender Studies M175.) Lecture, three hours. Limited to juniors/seniors. Examination of relationship between women and cities: (1) how cities have affected women's opportunities for economic and social equality, (2) women's contributions to development of U.S. cities, and (3) contemporary strategies and efforts to create urban environments that reflect women's needs and interests. P/NP or letter grading.

**C184. Looking at Los Angeles. (4)** Lecture, three hours. Introduction to history and physical form of Los Angeles, with emphasis on understanding social, economic, and political issues in development of Los Angeles. Concurrently scheduled with course C284. Letter grading.

**185XP. Community-Based Research in Planning. (4)** (Formerly numbered 185SL.) Seminar, one hour; fieldwork, three hours. Preparation: at least four Urban and Regional Studies minor courses, of which at least one should be related to subject area of service learning setting. Limited to junior/senior minor students. Designed to serve as complement to service learning requirement and may be used to fulfill capstone requirement for minor. Students are matched to public, private, or nonprofit agency through Center for Community Learning and must complete minimum of 30 hours of work. Duties and responsibilities to be set by students and sponsoring organizations. Readings to be determined in consultation with instructor. P/NP grading.

**M187. Latino Metropolis: Architecture and Urbanism in Americas. (4)** (Same as Chicana/o and Central American Studies M187 and History M151E.) Lecture, four hours. Introduction to history of architecture and urbanism in Americas, from fabled cities of Aztec empire to barrios of 21st-century Los Angeles and Miami. Emphasis on role of cities in Latina/Latino experience and uses of architecture and city planning to forge new social identities rooted in historical experiences of conquest, immigration, nationalization, and revolution. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced corequisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors and departmental honors programs. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**195. Community Internships in Urban Planning. (4)** Tutorial, 12 hours. Limited to junior/senior Urban and Regional Studies minors. Internship in supervised setting in community agency or urban planning setting. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**199. Directed Research in Urban Planning. (2 to 8)** Tutorial, three hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**M201. Theories of Architecture. (4)** (Same as Architecture and Urban Design M201.) Lecture, three hours. Exploration of conceptual and historical structures that shape current issues in architectural theory. Readings in primary texts serve as framework for understanding nature of speculative inquiry in architectural context. Letter grading.

**202A-202B. Land Use. (202A: 3 or 4/202B: 1 or 2)** Lecture, three hours. Course 202A is enforced requisite to 202B. Exploration of 21st-century land-use public controls, private practice, and litigation in California from basic planning, zoning, subdivision controls, and official mapping to regional growth management, sustainability, and environmentally sensitive land protection. Concurrently scheduled with Law 286. In Progress (202A) and S/U or letter (202B) grading.

**M203. Housing Segregation, Housing Discrimination, and Evolution of Public Policy. (1 to 8)** (Same as Law M526.) Seminar, three hours; two field trips. Consideration of selected aspects of housing law and policy, including current federal and state housing subsidies; remedies of housing consumers; impacts of market discrimination against children, racial minorities, and women; and local governmental laws influencing cost and supply, such as antispeculation and rent control legislation. Catalytic role of economic and community development in expansion of housing supply also considered. Letter grading.

**M203A-203B. Seminar: Housing Segregation, Housing Discrimination, and Evolution of Public Policy. (1 to 8 each)** (Same as Law M526.) Seminar, three hours; two field trips. Course M203A is enforced requisite to 203B. Consideration of selected aspects of housing law and policy, including current federal and state housing subsidies; remedies of housing consumers; impacts of market discrimination against children, racial minorities, and women; and local governmental laws influencing cost and supply, such as antispeculation and rent control legislation. Catalytic role of economic and community development in expansion of housing supply also considered. In Progress (M203A) and letter (203B) grading.

**M204. Research Design and Methods for Social Policy. (4)** (Same as Public Policy M218.) Lecture, three hours; outside study, nine hours. Limited to graduate students. How to become more sophisticated consumers and producers of qualitative and quantitative policy research. In first half of course, formal principles of research design; in second half, various data collection methods, including ethnography, interviewing, and survey design. Letter grading.

**205A-205B. MURP Comprehensive Examination: Applied Planning Research Project I, II. (4-4)** Required of all second-year students completing applied planning research project MURP comprehensive examination capstone option. Letter grading. **205A.** Seminar, three hours. Guides students through identifying topics, selecting clients, developing scope of work and memorandum of understanding with clients, completing research design and literature review portions of applied planning research project, and collecting data. **205B.** Seminar, three hours; discussion, one hour. Guides students through completion of data collection, analysis, findings, conclusions, and recommendations portions of applied planning research project. Preparation of executive summary and poster synthesizing their work.

**206. Introduction to Geographic Information Systems. (4)** Lecture, one hour; laboratory, two hours. Practice-oriented study using Esri/ArcGIS. Survey and overview of spatial analysis techniques and training on data analysis, management, and visualization. Students are guided through series of exercises and assignments to build higher levels of spatial understanding and experience. Use of laboratory exercises, book exercises, and project to help illuminate principles and teach useful skills. Discussion of three major themes: spatial analysis, data management, design and visualization. Letter grading.

**207. Applied Microeconomics for Urban Planning. (4)** Lecture, three hours; laboratory, 90 minutes. Preparation: passing score on microeconomics examination given first day of class. Practical use of economics in analyzing public resource allocation problems. Topics include review of marginal analysis, difference between equity and efficiency, public goods and free rider problem, environmental pricing, public service pricing, and conflicts between individual and collective rationality. Letter grading.

**M208A. Introduction to Luskin PhD Research. (4)** (Formerly numbered 208A.) (Same as Social Welfare M249A.) Lecture, one hour; discussion, two hours. Required of first-year PhD students. Introduction to design and execution of public affairs research; exploration of subfields of public affairs scholarship and approaches to research on contemporary topics in social welfare and urban planning. Preparation and filing of PhD program of study. Letter grading.

**M208B. Logic of Inference and Causation. (4)** (Formerly numbered 208B.) (Same as Social Welfare M249C.) Seminar, three hours. Requisites: courses

M208A, M208D. Required in first or second year of PhD program. Development of researchable hypotheses and accompanying research design strategies, understanding of threats to validity, review of critiques of traditional methods and of alternative approaches to scholarship. Letter grading.

**M208C. Applied Research Design: Dissertation and Thesis Proposal. (4)** (Formerly numbered 208C.) (Same as Social Welfare M258.) Seminar, three hours. Required of all PhD students who have passed their field examinations but have not yet advanced to candidacy and all MURP students completing their thesis capstone option. Advanced research design course that guides students in selecting problem/question to study, reviewing previous research on problem/question, framing specific research questions/hypotheses, and selecting methodology and plan for testing hypotheses. May be repeated for credit. S/U or letter grading.

**M208D. Introduction to Qualitative Research. (4)** (Same as Social Welfare M249B.) Lecture, three hours; outside study, nine hours. Requisite: course M208A. Required in first or second year of PhD program. Introduction to philosophy, theories, logic, design, and practice of qualitative research by studying its varied methodologies. Letter grading.

**209. Special Topics in Planning Theory. (4)** Lecture, three hours. Topics in planning theory selected by faculty members. May be repeated for credit. S/U or letter grading.

**M201A. Special Topics in Public Affairs. (4)** (Same as Public Policy M291C and Social Welfare M203X.) Seminar, three hours; outside study, nine hours. Advanced seminar on emerging issues across public policy, social welfare, and urban planning. May be repeated for credit. S/U or letter grading.

**M210B. Comparative Perspective on States, Markets, and Civil Society. (4)** (Same as Public Policy M247B and Social Welfare M290X.) Lecture, two and one half hours. Governance is about solving and managing societal problems, such as climate change, poverty, migration, security, mobility, pollution, or trade relations. Contemporary governance is complex set of laws, rules, and regulations involving rights and responsibilities of three institutional complexes of modern societies (state, market, and civil society), interests that guide them, and legitimacy and resources they command. Actors often reach across systemic, jurisdictional, and national boundaries; their relationships can be cooperative, neutral, or fraught with conflict, and governance outcomes can vary significantly. These dynamics involve fundamental challenges and, consequently, require significant governance readiness. Lectures, debates, in-class exercises, and student presentations. Exploration of several issues in more detail, e.g., types of state capacities, democracy, crisis management, governance innovation, and specific policy fields such as infrastructure or global finance. S/U or letter grading.

**211. Law and Quality of Urban Life. (4)** Lecture, three hours. Introduction to law as urban system, directed primarily toward those interested in intersection of law and policy: broad array of urban issues examined, as is law's role as partial cause and cure of urban problems. Examination of law as changing process rather than collection of principles, so that students develop faculty to interact with law and lawyers in positive and forceful manner. S/U or letter grading.

**212. International/Comparative Planning Workshop. (2 or 4)** Seminar, three hours; field trips, five to 10 days. Topics of planning and policy in various international or domestic sites. Topics may include urban design, urban development, urban governance, land use, environmental issues, transportation, infrastructure planning, housing development, community development, and/or physical planning. May be repeated for credit. S/U or letter grading.

**213. Urban Data Science. (4)** Lecture, three hours. Preparation: basic Python programming experience or introductory Python course. New data sources are potential goldmine for urban planners and policy makers. But sometimes they are large, messy, or awkward to access, and often they are all of these things. Development of skills in scraping, processing, and managing urban data, and using tools such as natural lan-

guage processing, geospatial analysis, and machine learning. Use of examples from transit, housing, and equity planning, and building of competence in open-source tools and languages such as Python and SQL. Consideration also of limits to data science, and biases and pitfalls that big data can entail. Letter grading.

**214. Neighborhood Analysis. (4)** Lecture, two hours; laboratory, two hours. Experience with GIS and statistical software useful but not necessary. Methods-oriented studio course, with focus on developing data and analytical skills required to profile and analyze neighborhoods. Working in teams students develop quantitative neighborhood profiles that can be used in community planning and at other geographical levels (e.g., cities, counties, and regions). Students gain professional experience and produce product that benefits larger community. Data management and analysis, including accessing, cleaning, and presenting data. Letter grading.

**M215. Spatial Statistics. (4)** (Same as Geography M205 and Statistics M222.) Lecture, three hours. Designed for graduate students. Survey of modern methods used in analysis of spatial data. Implementation of various techniques using real data sets from diverse fields, including neuroimaging, geography, seismology, demography, and environmental sciences. S/U or letter grading.

**M216. Current Issues in Food Studies. (4)** (Same as Community Health Sciences M217.) Seminar, three hours. Limited to Food Studies Graduate Certificate Program students. Food is complex subject given that production, procurement, preparation, consumption, and exchange of edible matter is biologically vital to human growth, development, and function and critical to many aspects of society and culture. Food studies is growing cross-disciplinary field of research, teaching, and advocacy that encompasses and draws from cultural anthropology and geography, food law and policy, urban planning, sociology, literature, history, public health, nutrition, environmental science, molecular and cell biology, science and technology studies (STS), agronomy, and other disciplines. Survey of some of these wide-ranging topics and disciplines that define food studies. Letter grading.

**217A-217B. Comprehensive Planning Project. (4-4)** Seminar, three hours. Designed for second-year students. Comprehensive project brings together students of varying backgrounds and interests in joint solution of urban planning problem. Each project spans two terms. Successful completion of project meets requirements of Comprehensive Examination Plan A of MA program. S/U grading.

**218A. Graphics and Urban Information. (4)** Lecture, two hours; studio, one hour. Presentation of basic graphic methods and tools for conceptualization, analysis, and documentation of built environment. Development of fundamental skills of graphic ideation and communication. Letter grading.

**218B. Advanced Visual Communication. (4)** Lecture, 90 minutes; computer laboratory. Development of advanced graphic design and oral communication skills, and strengthening of writing abilities through lectures, computer laboratories, and critiques. Students apply visual communication skills through lens of professional planning practice, assuming role of consultant to prepare presentations and plans for client. Follows typical urban planning project from start to finish, and exposes students to professional consulting practice through quick, fast-paced project. Letter grading.

**219. Special Topics in Built Environment. (4)** Lecture, three hours. Topics in built environment selected by faculty members. May be repeated for credit. S/U or letter grading.

**220A. Quantitative Analysis in Urban Planning I. (4)** Lecture, three hours; laboratory, 90 minutes. Preparation: passing score on basic mathematics proficiency examination given first day of class. Introduction to mathematical and statistical concepts and methods with applications in urban planning. Review of basic mathematical concepts fundamental to planning methods; linear and nonlinear functions focusing on growth curves and mathematics of finance; data mea-

surement and display; descriptive statistics and probability. Introduction to use of computer as tool in analysis of planning-related data. Letter grading.

**220B. Quantitative Analysis in Urban Planning II. (4)** Lecture, three hours; laboratory, 90 minutes. Requirement: course 220A or equivalent as demonstrated by passing score on mathematics proficiency examination given first day of course 220A. Introduction to concepts of statistical inference and modeling, with emphasis on urban planning applications. Topics include sampling, hypothesis testing, analysis of variance, correlation, and simple and multiple regression. Use of computer as tool in statistical analysis and modeling. Letter grading.

**221. Introduction to Geographic Information Systems and Spatial Data Science. (4)** (Formerly numbered 206A.) Lecture, one hour; laboratory, two hours. Designed to familiarize students with use of geographic data in public policy, urban planning, and related practice, and develop skill base for community practice that provides each student with tools necessary to organize and plan effectively for political, economic, and social justice in our communities. Students learn how to use geographic information systems (GIS) to inform practice, advocacy, and policy work. Letter grading.

**222A. Introduction to Planning History and Theory. (4)** Lecture, three hours; discussion, 90 minutes. Required of first-year MURP students, typically in Fall Quarter; required of first-year PhD students who have not completed comparable graduate course in planning history and theory. Exploration of planning thought and practice over time, leading authors and key issues in field of planning, traditional and insurgent histories of planning, and alternative approaches to planning for multiple and pluralistic publics. Letter grading.

**222B. Advanced Planning Theory: Production of Space. (4)** Lecture, three hours. Required of first-year PhD students. Major ideas and theories of planning that have influenced its development from early-19th century to present. Letter grading.

**222C. Advanced Planning Theory: Social Life and Difference. (4)** Lecture, three hours. Required of first-year PhD students. Major ideas and theories of planning that have influenced its development from early-19th century to present. Letter grading.

**223. Critical Race Studies. (4)** Lecture, three hours. Focus on foundation of critical race theory (CRT), and other theoretical works focusing on racism and racialization, as applied to public policy, social welfare, and urban planning. Review of causes and symptoms of structural racism and social/racial hierarchies as they influence, and are influenced by, these three fields. Students are expected to be prepared and ready to engage in dialog by completing readings, developing questions, reflecting on material, and keeping up with current events related to course topics. Letter grading.

**224. Racial Justice and Planning. (4)** Lecture, three hours. Addresses problem of advancing racial justice in and through planning research and practice. What key theories that explain racism and justice in planning are; how histories of unjust planning thought and practice have contributed to entrenched racial inequalities in and around cities; what some promising practices for confronting and addressing historical and present-day racial injustice are; and how intersectional understanding and approach can be embraced by planners taking on these issues in highly unequal, politically fractured, and charged urban and regional landscapes. Addresses these questions of planning through modules examining topics such as abolition and policing; climate and environmental justice; housing and infrastructure; spatial planning and urban design; education reform; immigrant incorporation; and public health. Letter grading.

**225. Planning in Black Communities. (4)** Lecture, three hours. Use one of many modes of Black radical analysis to critique hidden assumptions, pitfalls, and interests, revealed in racialized histories of such policy interventions and their attendant ideological justifications. Letter grading.

**228. Visual Communication Skills. (2)** Five-week course. Lecture, two hours; laboratory, one hour. Greater emphasis on graphic presentation and visual communication to educate stakeholders, advocate for change, and encourage participation in planning process in recent years, in both public and private sector. Visual communication requires analytic skills and strategic thinking, strong foundation in design theory, and technical skills in computer programs. Introduction to Adobe InDesign and Illustrator and foundation in design theory and communication. How to use graphic design and presentation programs to create attractive and powerful planning materials and reports, design principles to communicate ideas in clear, succinct, and engaging manner, and when and how to use graphic materials to support verbal presentations or written reports. Letter grading.

**229. Special Topics in Planning Methods. (4)** Lecture, three hours. Topics in planning methodology selected by faculty members. May be repeated for credit. S/U or letter grading.

**M230. Introduction to Regional Planning. (4)** (Same as Public Policy M241.) Lecture, three hours. Critical and historical survey of evolution of regional planning theory and practice, with particular emphasis on relations between regional planning and developments within Western social and political philosophy. Major concepts include regions and regionalism, territorial community, and social production of space. Letter grading.

**M231. Global Public Affairs: Governing in Interconnected World. (4)** (Same as Public Policy M228B and Social Welfare M215.) Lecture, three hours; outside work, nine hours. Conceptually, focus on interplay between three major institutional complexes of modern, globalizing societies and organizations that operate within them: state, market, and civil society. Study moves between abstract theory and concrete examples, offers sense of where these institutions and organizations have come from, and helps chart their present trajectories. From perspective of governance, assessment of roles and configurations of institutions and organizations to address today's challenges. S/U or letter grading.

**232. Disaster Management and Response. (4)** Lecture, three hours. Through readings and presentations, examination of disaster management and response in both U.S. and developing countries. Exploration of how disaster impacts and risk reduction both relate to economic, vulnerability, and political factors, in addition to acts of nature. Structured to allow students to focus on distinct disaster contexts and themes as set out in reading and weekly sessions. Letter grading.

**C233. Political Economy of Development. (4)** (Formerly numbered C233.) Lecture, three hours. Introduction to new approaches to urban studies, basic concepts and analytical approaches of urban political economy, with major emphasis on American urban problems and restructuring of modern metropolis. Topics include historical geography of urbanization, development and transformation of urban spatial structure, suburbanization and metropolitan political fragmentation, urban fiscal crisis, and role of urban social movements. Letter grading.

**M234A. Development Theory. (4)** (Same as Geography M229A.) Lecture, three hours. Review of basic literature and schools of thought on development theory through analysis of impact of mercantilism, colonialism, capitalism, and socialism on various urban and rural social and economic structures in Third World. Presentation, through evaluation of theoretical writings and case studies, of complexity and diversity of developing countries. Emphasis on linkages between policy and rural and urban impacts. Gives students important background for courses M234B, M234C, and many other planning courses addressing Third World issues. Letter grading.

**M234B. Ecological Issues in Planning. (4)** (Same as Geography M229B.) Lecture, three hours. Recommended preparation: course M265. Science and politics of modern environmentalism and planning in light of transformations inherent in global change, including how to address these questions in ways that go beyond green consumerism and bifurcation of wild, ecological, and human environments. American environ-



mentalism has become dominant model for many conservation practices. Informed by Muirist model of idea of untrammelled nature with people-less set-asides for spiritual and scientific contemplation of nature; this approach used in environmental policy and as key idea in conservation and fragment biology. At opposite end is environmental planning devoted to infrastructure in hyper-human habitats (cities). Exploration of these competing models and many reasons to be skeptical of both in 21st century. Letter grading.

**M234C. Resource-Based Development. (4)** (Same as Geography M229C.) Lecture, three hours. Recommended preparation: course M234A. Some major issues associated with development of specific natural resources. Topics include nature of particular resource (or region associated with it), its previous management, involvement of state, corporations, and local groups, and environmental and social impact of its development. Letter grading.

**235A. Urbanization in Developing World. (4)** Lecture, three hours. Course 235A is not requisite to 235B. Questions of urbanization and planning in low- and middle-income countries. Case studies from Latin America, Africa, and Asia. Lectures, student presentations, and policy debates. Letter grading.

**235B. Civil Society, Nongovernmental Organizations, and Social Movements in Developing World. (4)** Lecture, three hours. Questions of civil society, nongovernmental organizations (NGOs), and social movements in low- and middle-income countries. Case studies from Latin America, Africa, and Asia. Lectures, student presentations, and policy debates. Letter grading.

**M236A. Theories of Regional Economic Development I. (4)** (Same as Geography M230A and Public Policy M240.) Lecture, three hours; discussion, one hour. Introduction to theories of location of economic activity, trade, and other forms of contact between regions, process of regional growth and decline, reasons for different levels of economic development, relations between more and less developed regions. Letter grading.

**M236B. Globalization and Regional Development. (4)** (Same as Geography M230B.) Lecture, three hours. Requisite: course M236A. Application of theories of regional economic development, location, and trade learned in course M236A to contemporary process known as globalization. Examination of nature and effects of globalization on development, employment, and social structure, along with implications for policy. Letter grading.

**236C. Advanced Workshop on Regions in World Economy. (4)** Lecture, three hours. Requisite: course M236B. Advanced workshop on regional development examining changes in organization of production systems, their geographies, and processes that affect regional performance in globalized environment. Letter grading.

**237A. Sectoral Analysis. (4)** Lecture, three hours; laboratory, one hour. Introduction to methods and procedures of sectoral investigation as applied to regions, industries, companies, and their labor forces. Current theories and conceptions of industrial structure and industrial change. Investigation of characteristics and trends of industry subsectors in Los Angeles resulting in industry profile that can serve as aid to planning and shaping economic development. Letter grading.

**237B. Urban and Regional Economic Development Applications. (4)** Lecture, three hours. Survey and analysis of economic development strategies in U.S. Because economic development strategies seek to modify or shape existing conditions, focus on how policies attempt to harness dynamics associated with new forms of industrialization, intensified global competition, and interrelationships among capital, labor, and state. Letter grading.

**C237C. Southern California Regional Economy. (4)** Lecture, three hours. Introduction to regional economy, with emphasis on Los Angeles. Key economic sectors, labor market composition, and review of conflicting portrayals depicting dynamics of region. Two all-day bus tours of key economic regions and guest lectures by regional experts included. Concurrently scheduled with course CM137. Letter grading.

**238. Global Labor Markets. (4)** Lecture, three hours. Consideration of labor-related programs, policy, and strategy in international and comparative context. Review of major approaches to improving quality, quantity, and access to jobs, including training, regulation, migration policy, organizing strategies, and social safety net. Global in scope, with particular reference to countries of global south. Letter grading.

**239. Special Topics in Regional and International Development. (4)** Seminar, three hours. Topics in urban and regional development selected by faculty members. May be repeated for credit. S/U or letter grading.

**M240. Local Government. (2 to 6)** (Same as Law M285.) Lecture, three hours. Analysis of structure and function of local, regional, and state government in historical and institutional context: organization, finance, intergovernmental relations, role of judiciary, public services, lawmaking, citizen participation through initiatives and referenda, and government tort liability. Letter grading.

**240A-240B. Local Government. (4-2)** Lecture, three hours. Analysis of structure and function of local, regional, and state government in historical and institutional context: organization, finance, intergovernmental relations, role of judiciary, public services, lawmaking, citizen participation through initiatives and referenda, and government tort liability. Concurrently scheduled with Law 285. In Progress grading (240A) and letter (240B) grading.

**241. Policing through Bureaucracy: Encounters with City and State. (4)** Lecture, three hours. Every day, people encounter state power through their contact with bureaucracies. Bureaucracies administer and regulate many aspects of our lives, including education, housing, social benefits, and mobility. Examination of role of bureaucracies in emergence of, persistence of, and experience of social inequality. Exploration of dilemmas that bureaucrats face as they do their jobs, and experiences of people who interact with bureaucrats either voluntarily or involuntarily. Consideration of how peoples' experiences of bureaucracies are stratified by race and social class, and reflection on how experiences with bureaucracies convey messages about race, citizenship, and belonging. Letter grading.

**242. Poverty and Inequality. (4)** Lecture, three hours. Examination of relationship between urbanization and spatial inequality in U.S.—spatial dynamics of urban growth, levels and causes of spatial inequality, and implications of spatial inequality for low-income communities. Topics include concentrated poverty, residential segregation, immigrant neighborhoods, spatial disparities in access to opportunities, housing mobility, neighborhood health and safety, urban infrastructure, and political cohesion and participation. Analysis of role of policies in promoting and/or reducing spatial inequities. Letter grading.

**243. Urban Futures: Space, Ecology, Society. (4)** Lecture, three hours. Urban social and ecological change are intertwined and coproduced. Inquiry into how we can better understand and intervene in this critical relationship, in global context of technological promise, extensive urbanization, ecological crises, and increasingly isolationist and splintered societies. Examination of big problems, and big ideas and big plans that may be necessary to address them as well as what enables large-scale urban environmental projects to be conceived and implemented. Letter grading.

**244. Urban Poverty and Planning. (4)** Lecture, three hours. Examination of determinants of urban poverty, with emphasis on poverty in U.S. and on geographical dimensions of poverty and planning interventions that contribute to poverty reduction. Topics include relationship between poverty and human and social capital, demographic change, low-wage labor market, spatial concentration of poor, residential segregation, and social policy. Letter grading.

**245. Urban Public Finance. (4)** Lecture, three hours. Requisites: courses 207, 220A. Theory and practice of urban public finance, with emphasis on methods used to fund public infrastructure. Topics include fiscal impact analysis of real estate development, effects of taxes on land-use decisions, benefit assessments to

finance neighborhood public investment, private and intergovernmental contracting as method of supplying urban public services, tax increment finance for urban redevelopment, and municipal bond market. S/U or letter grading.

**M246. Poverty, Poor, and Welfare Reform. (4)** (Same as Public Policy M214 and Social Welfare M290L.) Lecture, three hours. Major policy and research issues concerning poverty and social welfare policy directed toward poor in U.S. S/U or letter grading.

**247. Planning for Multiple Publics. (4)** Lecture, three hours. Exploration of planning needs of various social groups in urban settings, using existing literature and research studies to determine appropriate mechanisms of planning for multiple publics. Analysis of communities in Los Angeles metropolitan area to gain insights into practical, theoretical, and methodological problems of planning for multiple publics. Generally taken in first year. S/U or letter grading.

**249. Special Topics in Transportation Policy and Planning. (4)** Lecture, three hours. Topics in transportation policy and planning selected by faculty members. May be repeated for credit. S/U or letter grading.

**M250. Transportation, Land Use, and Urban Form. (4)** (Same as Public Policy M220.) Lecture, three hours. Historical evolution of urban form and transportation systems, intrametropolitan location theory, recent trends in urban form, spatial mismatch hypothesis, jobs/housing balance, transportation in strong central city and polycentric city, neotraditional town planning debate, rail transit and urban form. Letter grading.

**C251. Parking and City. (4)** Lecture, three hours. Requisite: course 207. Parking is misunderstood link between transportation and land use. Transportation engineers typically assume that free parking simply is there at end of most trips, while urban planners treat parking as transportation issue that engineers must study. No profession is intellectually responsible for parking, and everyone seems to assume that someone else is doing hard thinking. Mistakes in planning for parking help to explain why planning for transportation and land use has in many ways gone slowly, subtly, incrementally wrong. Study of theory and practice of planning for parking and examination of how planning for parking in U.S. has become planning for free parking. Exploration of new ways to improve planning for parking, transportation, and land use. Concurrently scheduled with course CM151. Letter grading.

**252. Transportation and Land Use: Transportation and Urban Design Studio. (4)** Studio, three hours. Students of different backgrounds and interests collaboratively and individually analyze and propose solutions for actual transportation planning and urban design problem. Course simulates real-world professional planning project of type that students might be assigned if working for consulting firms or public agencies. Students acquire ability to collect and synthesize evidence typically marshaled by transportation planning and urban design professionals, urban and site analysis capabilities, design and physical planning skills, and data analysis and design presentation and re-presentation abilities. Letter grading.

**M253. Travel Behavior Analysis. (4)** (Same as Civil Engineering M287 and Public Policy M221.) Lecture, three hours. Requisites: courses 207 and 220B, or Public Policy 201 or M201A, and 203. Descriptions of travel patterns in metropolitan areas, recent trends and projections into future, overview of travel forecasting methods, trip generation, trip distribution, mode split traffic assignment, critique of traditional travel forecasting methods and new approaches to travel behavior analysis. Letter grading.

**254. Bicycle and Pedestrian Planning. (4)** Lecture, three hours. Walking and bicycling are essential components of sustainable transportation systems. In response to growing concerns about access, safety, public health, equity, climate change, and community sustainability issues, many government agencies and private developers are planning to improve pedestrian and bicycle transportation. Exploration of field's relationship to land use and transportation planning, public health, and environment. Detailed knowledge provided of various bicycle and pedestrian facilities and their appropriate contexts. Examination of bicycle

and pedestrian planning in context of overall street design. Essential components of bicycle and pedestrian planning, including policies, programs, funding, and advocacy. In-class exercises and out-of-class planning projects. Letter grading.

**M255. Shared Mobility Policy and Planning. (4)** (Same as Public Policy M244.) Lecture, three hours. Introduction to planning, analysis, and management of shared mobility systems, with particular focus on public transit. Overview of shared mobility policy and planning context; introduction to transportation planning and project evaluation processes; high-speed rail and airports and aviation; public transit policy and planning, including performance evaluation and route planning; taxis and ADA paratransit, ride-hailing, car-, bike-, and scooter-share; implications of vehicle automation for shared mobility in the years ahead. Letter grading.

**M256. Transportation Economics, Finance, and Policy. (4)** (Same as Public Policy M222.) Lecture, three hours. Overview of transportation finance and economics; concepts of efficiency and equity in transportation finance; historical evolution of highway and transit finance; current issues in highway finance; private participation in road finance, toll roads, road costs and cost allocation, truck charges, congestion pricing; current issues in transit finance; transit fare and subsidy policies, contracting and privatization of transit services. Letter grading.

**257. Transportation and Economic Outcomes. (4)** Lecture, three hours. Examination of equity issues related to urban transportation, with focus on complex relationships among urban spatial structure, transportation (travel patterns and transportation investments), and economic outcomes. Role of transportation in improving economic outcomes for low-income and minority households and communities. Letter grading.

**M258. Transportation and Climate Change. (4)** (Same as Public Policy M223.) Lecture, three hours. How to reduce greenhouse gas emissions from transportation. Critical analysis of policies to improve fuel economy, promote electric vehicles, and reduce vehicle travel. History and legal frameworks of environmental regulation. Analytical methods to quantify carbon emissions and estimate emission reductions. Focus on climate change, but consideration of other environmental consequences of transportation, from air pollution to stormwater runoff. Letter grading.

**260. Environmental Politics and Governance. (4)** Lecture, three hours. Environmental planning is more than simply finding problems and fixing them. Each policy must be negotiated and implemented within multiple, complex systems of governance. Institutions and politics matter deeply. Overview of how environmental governance works in practice and how it might be improved. Letter grading.

**260A. Environmental Assessment: Urban Design. (4)** Lecture, three hours. Introduction to methods of evaluating environmental impacts of existing and proposed projects. Intended for planners and environmental professionals working in climate-impacted future. Letter grading.

**260B. Green Urban Studio: Designing Living Neighborhoods. (4)** Studio, three hours. Students gain detailed knowledge of both established and emerging performance-based methods for addressing issues of energy, water, waste, food, transportation, habitat, biomimicry, and local economies at district or neighborhood scale. Letter grading.

**261. Land-Use Planning: Processes, Critiques, and Innovations. (4)** Lecture, three hours. Understanding of techniques, processes, strategies, and dilemmas of land-use planning. Despite strong criticisms and demonstrated shortcomings, land-use control remains integral part of planning practice. How does land-use control work? How has it evolved? What are problems with traditional land-use control mechanisms? How well do innovations in land-use planning address criticisms? What is role of land-use planning in good society? S/U or letter grading.

**262. Urban Environmental Problems: Water Resources. (4)** Lecture, three hours. Water access affects quality of life and livelihoods both in California and across low and middle income countries. Exam-

ination of similarities and distinctions between relevant water access issues in both contexts. To date, water resources planning has been devoted almost exclusively to engineering and technical capacity of service delivery systems. Focus here on social, political, and economic drivers of access, inequality of access, and related conflicts. Water resource governance issues primarily considered at subnational, city, and household scales. S/U or letter grading.

**264. Environmental Law. (4 or 6)** Lecture, three or four hours. Examination of field of environmental law through analysis of various legal issues and public policy: legal consequences of public decision-making strategies and allocation of primary responsibility for various environmental decisions. Focus on air pollution and Clean Air Act as means of illustrating policy issues underlying field. Concurrently scheduled with Law 290. S/U or letter grading.

**264A-264B. Environmental Law. (264A: 3 or 4/264B: 1 or 2)** Lecture, three hours. Course 264A is enforced requisite to 264B. Examination of field of environmental law through analysis of various legal issues and public policy: legal consequences of public decision-making strategies and allocation of primary responsibility for various environmental decisions. Focus on air pollution and Clean Air Act as means of illustrating policy issues underlying field. Concurrently scheduled with Law 290. In Progress (264A) and S/U or letter (264B) grading.

**M265. Environmentalisms: Climate Dimensions and Politics, Past, Present, Future. (4)** (Same as Geography M265.) Lecture, three hours; discussion, one hour. Review of environmental theories and their practices in dynamic U.S. and international contexts. Issues of climate change, scenario planning, and matrix ecology and its implications in both urban and rural settings. Exploration of problematics of increasing internationalization (or international implications) of environmental practices as part of both green and black economies. What does integrated environmental planning look like in this century? Letter grading.

**265B. Urban Environments and Socioecologies. (4)** Lecture, three hours. Reading-intensive exploration of politics, broadly defined, of natures, and its associated forms of environmental ideologies and forms of governance. Examination of new paradigms triggered by intensive urbanization, migration, biodiversity and climate changes, and evolution of new environmental practices. Study moves between debates in theory and debates in practice. Letter grading.

**265C. Food Systems. (4)** Lecture, three hours. Review of array of food and production systems, systems of distribution, and systems of consumption to address most widespread human impacts on planetary biodiversity, landscapes, climates, and social systems. Letter grading.

**C266. Global Environment and Development: Problems and Issues. (4)** Lecture, three hours; discussion, one hour. Questions of population, resource use, Third World poverty, and environment. Analysis of global economic restructuring and its connections to changing organization of production and resulting environmental impacts. Case studies from Africa, Latin America, Asia, and U.S. Concurrently scheduled with course CM166. S/U or letter grading.

**M267. Environmental and Resource Economics and Policy. (4)** (Same as Public Policy CM250.) Lecture, three hours. Requisites: courses 207 and 220B, or Public Policy 204 and 208. Survey of ways economics is used to define, analyze, and resolve problems of environmental management. Overview of analytical questions addressed by environmental economists that bear on public policies. Letter grading.

**M268. Policy Analysis of Emerging Environmental Technologies. (4)** (Same as Public Policy M286.) Lecture, three hours. Acquisition and utilization of economic, finance, planning, and policy analytic tools needed to evaluate factors that drive market adoption from early to middle market phases. Rooftop solar, electric vehicle, and energy efficiency as focal examples, with emphasis on role of policy and planning incentives intended to spur adoption. Letter grading.

**269. Special Topics in Environmental Analysis and Policy. (4)** Lecture, three hours. Topics in environmental analysis and policy selected by faculty members. May be repeated for credit. S/U or letter grading.

**M270. Homelessness: Housing and Social Service Issues. (4)** (Same as Social Welfare M206A.) Lecture, 90 minutes; discussion, 90 minutes; one field trip. Review of current status of homelessness: who homeless are, what social services and housing are available, existing and proposed programs—appropriate architecture, management, and sources of funding. Outside speakers include providers of services to homeless. Letter grading.

**271A. Community Economic Development. (4)** Lecture, three hours. Introduction to fundamentals of community economic development and neighborhood development strategies. Overview of basic approaches, important concepts, resources and language of field, and major strategies for revitalization of low-income neighborhoods. Letter grading.

**C271B. Labor and Economic Development. (4)** Lecture, three hours. Exploration of economic development and identification of ways that labor and labor unions directly and indirectly influence and shape economic development. Wide range of roles that labor plays, and could play, in promoting and supporting economic development for all. Concurrently scheduled with course CM172. Letter grading.

**M272. Introduction to Market-Rate Real Estate Development and Finance. (4)** (Same as Architecture and Urban Design M272.) Lecture, two hours; workshop, two hours; outside study, eight hours. Requisite: course 220A. Recommended for first-year students in community development and built environment area of concentration. Introduction to real estate development process specifically geared to students in planning, architecture, and urban design. Financial decision model, market studies, designs, loan packages, development plan, and feasibility studies. Lectures and projects integrate development process with proposed design solutions that are interactively modified to meet economic feasibility tests. S/U or letter grading.

**272B. Advanced Real Estate Studio. (4)** Studio, three hours. Requisite: course M272. Study combines disciplines of planning, urban design, construction, real estate finance and investment, and property operations and management. Students learn about behind-the-scene negotiations and decisions, and gain better ability to determine real estate project feasibility, deeper understanding about financing methods and alternatives, and knowledge about ways to frame development programs for success. Letter grading.

**273. Site Planning. (4)** Lecture, 90 minutes; laboratory, 90 minutes. Requisite: course 274. Introduction to principles of site planning for urban areas. S/U or letter grading.

**274. Introduction to Physical Planning. (4)** Lecture/workshop, 90 minutes; discussion, 90 minutes. Designed for students with no prior physical planning background and for first-year MA students in community development and built environment, design and development, and transportation policy and planning concentrations. Introductory overview of physical planning, land use, site analysis, and surveys; regulatory structures and social/community impacts. Letter grading.

**M275. Community Development and Housing Policies: Roles of State, Civil Society, and Nonprofits. (4)** (Same as Public Policy M243 and Social Welfare M290U.) Lecture, three hours; outside study, nine hours. Designed for graduate students. Examination of role of U.S. housing policy and role of government agencies and community organizations. Is problem housing or economic development? Should interventions be directed toward inner city housing markets or through neighborhood strategies? What lessons can be learned from experiences of other countries? Letter grading.

**M276A-276B. Urban Housing. (1 to 8 each)** (Same as Law M287.) Lecture, three hours. Course M276A is enforced requisite to 276B. Examination of past 40 years of federal and state programs to stem urban decline and improve housing in U.S.; comparison and

contrast of legal and policy initiatives in areas of public housing, housing segregation, mortgage subsidies, landlord/tenant law, urban renewal, and community organizing. Research paper required. In Progress (M276A) and S/U or letter (276B) grading.

**277. Historic Preservation: Principles and Practices. (4)** Lecture, 90 minutes; discussion, 90 minutes. Overview of preservation field, including history and theory, current legislation, tax incentives, preservation planning, landmark and district surveys and designations, adaptive reuse, citizen involvement, and social issues. S/U or letter grading.

**278. More Jobs, Better Jobs: Work and Policy. (4)** Lecture, three hours. Central issues in urban economic development is jobs—how to create them, how to help disadvantaged populations get access to them, and how to ensure that they are of adequate quality in terms of wages, advancement, and skill development. Examination of how urban labor markets work and what can be done to help them work better, with focus on U.S. Particular emphasis on low-wage, low-skill workers and marginalized groups, such as inner-city people of color and immigrants. Analyses of how urban labor markets work with discussions of policy options for making them work better and range of solutions, including job creation, workforce training, job ladder creation, union and community organizing, and immigration reform. Examination of power and economic inequality and how to make changes. Letter grading.

**279. Seminar: Public Space. (4)** Seminar, three hours. Investigation of changes in production, consumption, design, and meaning of public space and analysis of socioeconomic, political, and cultural factors that lie behind them. Letter grading.

**280. Affordable Housing Development. (4)** Lecture, three hours. Requisites: courses 220A, 220B. Overview of basic concepts and skills utilized in nonprofit development initiatives, especially by community-based organizations. Focus on nonprofit provision of subsidized housing, emphasizing way professionals broker debt and equity funding from private, governmental, and philanthropic sources. Use of client projects and negotiation exercises. S/U or letter grading.

**281. Introduction to History of Built Environment in U.S. (4)** Lecture, two hours; discussion, one hour. Open to advanced undergraduates with consent of instructor. Introduction to history of physical forms of urbanization in America; survey of economic, political, social, and aesthetic forces behind creation of built environments. S/U or letter grading.

**282. Urban Design: Theories, Paradigms, Applications. (4)** Lecture, three hours. Discussion and evaluation of philosophical bases, ideologies, and paradigms of urban design in last century; examination of how these are reflected on built environment of cities. Letter grading.

**283. Community Development, Organizing, and Engagement. (4)** Lecture, three hours. Examination of theory and practice of community development, organizing, and engagement. Understanding of multiple dimensions of community development (physical, economic, political, social) and how they interact, as well as major debates about community development strategies. Analysis of role of community organizing as empowerment strategy in disadvantaged and marginalized communities, and relationship of community and worker organizing to broader movements for social change. Consideration of various approaches to community participation and engagement, and struggles over power and inclusion within these processes. Examination of relations between community development, organizing, and engagement. Particular attention to race, gender, and class dimensions of these processes, issues of power, and how planner's role connects with processes. Letter grading.

**C284. Looking at Los Angeles. (4)** Lecture, three hours. Introduction to history and physical form of Los Angeles, with emphasis on understanding social, economic, and political issues in development of Los Angeles. Concurrently scheduled with course C184. Letter grading.

**C285. Built Environment and Health. (4)** (Formerly numbered 285.) Lecture, three hours. Exploration of important linkages between urban-built environment and public-health outcomes using ecological, urban planning, and community-based lenses through theory and series of case studies. Knowledge of these linkages is used to propose ecological solutions to issues at nexus of built environment and public health. May be concurrently scheduled with course CM157. Letter grading.

**M287. Politics, Power, and Philanthropy. (4)** (Same as Public Policy M227 and Social Welfare M290S.) Lecture, three hours; outside study, nine hours. Use of political economy perspective to analyze forces that have shaped rise and characteristics of nonprofit sector and its constituent elements. Examination of social history of nonprofit sector in U.S. Exploration of legal and policy environments and distinct organizational forms. Comparative perspective between U.S. and other countries. S/U or letter grading.

**M288. Nonprofit Organizations and Philanthropy: Management and Policy. (4)** (Same as Public Policy M228 and Social Welfare M241E.) Lecture, three hours; outside study, nine hours. Increased importance of nonprofit organizations—as service providers, vehicles of humanitarian assistance, policy advocates, social entrepreneurs, innovators, and as instruments of government reform—have moved this set of institutions closer to center of social welfare, urban planning and public policy agendas. Introduction of conceptual background, examination of theories and aspects of organizational behavior, and management models and policy frameworks. Lectures, seminar-type discussion, in-class presentations, and guest presentations. Letter grading.

**289. Sprawl and Smart Growth. (4)** Lecture, three hours. Suburbs are not new, but metropolitan areas in U.S. and elsewhere continue to grow rapidly at their edges in ways that many consider poorly planned. Discussion of causes and impacts of sprawl as it relates to smart growth. Letter grading.

**M291. Introduction to Sustainable Architecture and Community Planning. (4)** (Same as Architecture and Urban Design CM247A.) Lecture, three hours. Relationship of built environment to natural environment through whole systems approach, with focus on sustainable design of buildings and planning of communities. Emphasis on energy efficiency, renewable energy, and appropriate use of resources, including materials, water, and land. Letter grading.

**M292. Elements of Urban Design. (4)** (Same as Architecture and Urban Design M271.) Lecture, three hours. Introduction of basic knowledge of elements and methods of urban design. Multidisciplinary approach leading to understanding of political, socioeconomic, and technological framework of urban systems and its dynamic interrelations. S/U or letter grading.

**M293. Politics, Ideology, and Design. (4)** (Same as Architecture and Urban Design M293.) Lecture, three hours. Exploration of cultural and political context of architecture and planning work. Examination of theory and practice from variety of perspectives applied to set of varied physical environments and to set of current spatialized concepts. Consideration of theoretical propositions that are shaping present urban and architectural debate and concrete case studies where politics and ideology shape design process. Letter grading.

**294. Housing in Developing Countries: Policy Objectives and Options. (4)** Lecture, three hours. Examination of relevance of public policies and their intended and unintended effects on housing demand and supply in developing countries. How definition of housing problems, and scope of solutions, has changed over time. Critical assessment of some key solutions that have been tried in past, their advantages, shortcomings, and resultant trade-offs, and likely directions for future housing policy. Letter grading.

**M295. Introduction to Urban Humanities. (4)** (Same as Architecture and Urban Design M295.) Seminar, six hours; studio, six hours. Core introduction to urban humanities. Analytical and descriptive methods of humanities paired with speculative and projective

methods of architectural and urban design to better understand contemporary state of human environment. Focus on Los Angeles, with concepts seminar, methods laboratory, projects studio, and site visit components. Offered in summer only. S/U or letter grading.

**M296. Housing Policy and Planning. (4)** (Same as Public Policy M243B.) Lecture, three hours. Study of housing policy and planning focused partly on California given rapid changes occurring in state, with consideration of experiences from other states and countries and to what extent they are relevant here. Specific topics likely include policies such as social housing, rent control, and housing finance, issues of household formation, housing supply, housing submarkets, and gentrification, as well as planning processes related to housing production and Affirmatively Furthering Fair Housing. Letter grading.

**297. Current Issues in Urban Planning. (1 to 4)** Seminar, three hours. Current issues in urban planning selected by students in conjunction with faculty members. May be repeated for credit. S/U grading.

**M297B. Current Issues in Public Affairs. (2)** (Same as Public Policy M297C and Social Welfare M297B.) Lecture, one to two hours. Introduction to wide range of current issues in public affairs. Luskin school faculty present material from their research and teaching. Assigned readings are distributed in advance of each meeting. S/U grading.

**M297F. Career Planning and Management. (2)** (Same as Public Policy M297F and Social Welfare M297F.) Tutorial, six hours. Designed to meet professional development needs of first-year Public Policy, Social Welfare, and Urban Planning students. Development of career management skills while balancing busy life of graduate student. More than just deciding on chosen career path, career planning and management involves taking concrete steps to become career ready. Students gain fundamental career management skills to be competitive on job market, including creating competitive résumé and practicing interviewing articulately. Offers opportunity to learn professional development skills to assist with career planning strategies. S/U grading.

**298. Special Topics in Emerging Planning Issues. (2 or 4)** Seminar, three hours. Topics in newly emerging planning issues such as role of cutting-edge technology, innovative policies, and experimental programs. May be repeated for credit. Letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar. to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**M404. Joint Planning/Architecture Studio. (4)** (Same as Architecture and Urban Design M404.) Lecture, one hour; discussion, one hour; studio, four hours. Opportunity to work on joint planning/architecture project for client. Outside speakers; field trips. Examples of past projects include Third Street Housing, Santa Monica; New American House for nontraditional households; Pico-Aliso Housing, Boyle Heights; working with resident leaders at Los Angeles City public housing developments. S/U or letter grading.

**M470. Improving Worker Health: Social Movements, Policy Debates, and Public Health. (4)** (Same as Community Health Sciences CM470 and Environmental Health Sciences M471.) Lecture, three hours; fieldwork, two hours. Examination of intersection between work, health, and environment, analysis of social causes of health disparities, investigation of historical trends and social movements, interpretation of current policy debates, and development of innovative interventions. S/U or letter grading.

**496. Field Projects. (4)** Tutorial, four hours. May not be repeated for credit. S/U grading.

**501. Cooperative Program. (2 to 8)** Tutorial, to be arranged. Preparation: consent of UCLA graduate adviser and graduate dean, and host campus instructor, department chair, and graduate dean. Used to record enrollment of UCLA students in courses taken under cooperative arrangements with USC. S/U grading.

**596. MA Research in Planning. (2 to 4)** Tutorial, one and one-half to three hours. May be repeated once for credit for maximum of 8 units. S/U grading.

**597. Preparation for MA Comprehensive Examination or PhD Qualifying Examinations. (4 to 12)** Tutorial, four hours. May be repeated for credit by PhD students. S/U grading.

**598. Preparation for MA Thesis in Urban Planning. (4)** Tutorial, four hours. May be repeated but may be applied toward degree only once. S/U grading.

**599. PhD Dissertation Research in Planning. (2 to 12)** Tutorial, to be arranged. May be repeated for credit. S/U grading.

## UROLOGY

David Geffen School of Medicine

379 Wasserman Building  
Box 957383  
Los Angeles, CA 90095-7383

### Urology

310-794-8492

Mark S. Litwin, MD, MPH, FACS, *Chair*

## Overview

The fundamental goal of the Department of Urology is to teach medical students the general principles of diagnosis and management in diseases of the genitourinary tract. Urology encompasses a wide scope of human illness, including conditions that are congenital and acquired, pediatric and adult, male and female, malignant and benign. The department functions to acquaint students with the skills necessary to manage these conditions in the initial stages and over the long term.

Instruction spans all four years of the undergraduate medical school curriculum but is concentrated during the clinical rotations. Students spend two weeks on the urology service during the third year and may return for an additional three-week elective rotation during the fourth year. The clinical experience includes time spent in the faculty and resident clinics, on ward rounds, and in didactic conferences that cover general urology, urological subspecialties, uropathology, and uroradiology. Urology teaching settings include the Reagan UCLA, Harbor-UCLA, Olive View-UCLA, UCLA Santa Monica, and West Los Angeles VA medical centers.

For more details on the Department of [Urology](#) and courses offered, see the department website.

## Urology

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and en-

rolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Course

**199. Directed Research in Urology. (2 to 8)** Tutorial, two hours. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## VISUAL AND PERFORMING ARTS EDUCATION

*Interdisciplinary Minor  
School of the Arts and Architecture*

2101 Broad Art Center  
Box 951620  
Los Angeles, CA 90095-1620

### Visual and Performing Arts Education

310-794-4822

#### Minor e-mail

Lauren L. McCarthy, MFA, *Chair*

## Faculty Committee

Lily Chen-Hafteck, PhD (*Music*)

Perry M. Daniel, MFA (*Theater*)

David H. Gere, PhD (*World Arts and Cultures/Dance*)

Miguel Gutierrez, MFA (*World Arts and Cultures/Dance*)

Kevin M. Kane, PhD (*Arts and Architecture*)

Victoria E. Marks, BA (*World Arts and Cultures/Dance*)

Lauren L. McCarthy, MFA (*Design|Media Arts*)

Chandler McWilliams, MFA, MA (*Design|Media Arts*)

Hirsch Perلمان, BA (*Art*)

Karen Hunter Quartz, PhD (*Education*)

David J. Roussève, BA (*World Arts and Cultures/Dance*)

Anna M. Sew Hoy, MFA (*Art*)

Cosmo D. Whyte, MFA (*Art*)

## Overview

The Visual and Performing Arts Education minor is an interdisciplinary and interdepartmental series of courses designed to introduce students to the field of arts education for multiple publics in general and specifically in relationship to the K-12 public school system; introduce students to the profession of the teaching artist and to a broad range of careers in the arts, including K-12 teaching, community arts education, museum education, creative arts therapies, and arts advocacy and to a variety of arts-related programs and cultural agencies, including community arts centers, museums, after-school programs, and nonprofit arts institutions; expand the ongoing dialogue and interaction between UCLA, extended Los Angeles community, K-12 public school system, and students in the arts; extend the School of the

Arts and Architecture commitment to UCLA and community partnerships by linking teaching and research with undergraduate education, civic engagement, and support experiential learning opportunities that address issues of educational equity and social justice; and conduct research on the transformative potential for the arts to positively impact society and evaluate best practices in arts education.

## Undergraduate Minor

### Visual and Performing Arts Education Minor

The Visual and Performing Arts Education minor is intended to supplement the education of undergraduate students enrolled in the Architectural Studies, Art, Art History, Dance, Design|Media Arts, Ethnomusicology, Music, Theater, and World Arts and Cultures majors.

### Admission

To apply to the minor, students must have completed at least 50 percent of the lower-division requirements of their specific majors and Arts Education M102 with a grade of B or better, be in good academic standing with an overall grade-point average of at least 2.7, and submit a minor application, which includes a concentration proposal to be developed in consultation with the Visual and Performing Arts Education director.

### The Minor

*Required Courses (28 to 32 units with a minimum of 24 upper-division units):* (1) Core and capstone sequence requirement: Arts Education M102, M192, M192XP (Arts Education M192 and M192XP include a guided teaching experience), (2) arts education requirement: two courses selected from Arts Education 20, 101, 103, 105, 195 (minimum 4 units), 197 (minimum 4 units), (3) one upper-division education course (list of recommended courses available from the Arts Education program office or the school [Office of Student Services](#)), and (4) one upper-division elective course (minimum 4 units) selected from arts education or, by petition, an arts education related course (list of recommended courses available from the Arts Education program office or the school [Office of Student Services](#)).

### Policies

A minimum of 20 units applied toward the minor requirements must be in addition to units applied toward major requirements or another minor.

Each minor course must be taken for a letter grade. Successful completion of the minor is indicated on the transcript and diploma.



## Arts Education

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Introduction to Community Engagement through Arts. (5)** Lecture, three hours; discussion, one hour; outside study, 11 hours. Introduction to fields of community engagement and arts education informed by philosophies of progressive education and social justice movements. By looking at community engagement as issue of equity and social justice, examination of basic theories of creativity, artistic development, and community partnership, and history, philosophies, politics, and sociocultural trends of community engagement in American society. Attendance at UCLA arts presentations and introduction to creative process. Readings and discussions to understand community engagement and arts education as crucial elements of comprehensive education, with emphasis on writing process, including regular writing assignments that require students to read, analyze, critique, and evaluate community arts practices and arts education scholarship. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**101. Selected Topics in Arts Education. (4)** Lecture, three hours; outside study, nine hours. Selected topics in arts education explored through variety of approaches that may include community projects, guided teaching experiences, studio and/or fieldwork, readings, discussion, research papers, and oral presentations. Topics announced in advance. May be repeated for maximum of 8 units. P/NP or letter grading.

**M102. Introduction to Arts Education for Multiple Publics: Theory and Practice. (4)** (Same as Education M142.) Seminar, three hours; outside study, nine hours. Introductory course with focus on arts education for multiple publics in inner-city settings. Study of core issues in arts education, creativity, and social justice as students develop, implement, and assess original syllabi, lesson plans, and community learning projects for multiple publics in inner-city schools and arts organizations. Collaboration with partner schools in planning, teaching, and evaluation of arts education programs in dance, music, theater, and visual arts. P/NP or letter grading.

**103. Socially Engaged Pedagogy in Arts. (4)** Lecture, three hours; outside study, nine hours. Students are in contact and conversation with active community-based artists and youth workers regularly utilizing socially engaged goals, principles, and practices. Based on readings and investigations, students research and write one case study on one particular arts site that is currently utilizing socially engaged pedagogies and art-making strategies. Theoretical and experiential components provided for students from all arts disciplines to explore tactics and strategy of socially engaged pedagogy and arts practice through variety of approaches that may include readings, visual and audio documentation, discussion, research papers, oral presentations, and relevant guest speakers. P/NP or letter grading.

**105. Arts Programs in Correctional Institutions: History, Theory, and Practice. (4)** Lecture, three hours; outside study, nine hours. Examination of attitudes of prison arts programming with correctional staff, artists working in prisons, political figures, and community while critically engaging with consequences of correctional environment without outside influence of arts as role model for inspiration and discipline. Selected topics and themes in arts education in correctional institutions explored through variety of approaches that may include readings, visual and audio documentation, discussion, research papers, oral presentations, and relevant guest speakers. P/NP or letter grading.

**107. Visual Arts Methods for Teaching Artist. (4)** Lecture, three hours; discussion, one hour. Recommended prerequisite: experience in specific art form. Enrollment by consent of instructor. Methodological approach to teaching visual arts specifically in K-12 setting. Emphasis on strategies for teaching in hybrid settings, inclusive of management strategies, evaluation, and portfolio development. Exploration through variety of approaches may include community projects, visual artwork, guided teaching experiences, studio and/or fieldwork, readings, discussion, and oral presentations. P/NP or letter grading.

**108. Performing Arts Methods for Teaching Artist. (4)** Lecture, three hours; discussion, one hour. Recommended preparation: experience in specific art form. Enrollment by consent of instructor. Methodological approach to teaching dance, theatre, and performing arts specifically in K-12 setting. Emphasis on strategies for teaching in hybrid settings, inclusive of management strategies, evaluation, and repertoire development. Exploration through variety of approaches may include community projects, performance, guided teaching experiences, studio and/or fieldwork, readings, discussion, and oral presentations. P/NP or letter grading.

**109. Design/Media Arts Methods for Teaching Artist. (4)** Lecture, three hours; discussion, one hour. Recommended preparation: experience in specific art form. Enrollment by consent of instructor. Methodological approach to teaching design media arts specifically in K-12 setting. Emphasis on strategies for teaching in hybrid settings, inclusive of management strategies, evaluation, and portfolio development. Exploration through variety of approaches may include community projects, digital artwork, guided teaching experiences, studio and/or fieldwork, readings, discussion, and oral presentations. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**M192. Arts Education Undergraduate Practicum: Preparation, Observation, and Practice. (4)** (Same as Education M129.) Seminar, three hours. Enforced prerequisite: course M102. Limited to juniors/seniors. Training and supervised practicum for advanced undergraduate students participating in Visual and Performing Arts Education minor. Students implement and evaluate original arts education programs under guidance of faculty members in small course settings. P/NP or letter grading.

**M192XP. Arts Education Undergraduate Practicum and Capstone Project. (4)** (Formerly numbered M192SL.) (Same as Education M129XP.) Seminar, three hours; practicum, three hours; outside study, six hours. Enforced prerequisites: courses M102, M192. Limited to juniors/seniors. Continuation of arts education training and supervised practicum for advanced undergraduate students participating in Visual and Performing Arts Education minor. Students continue to implement and evaluate original arts education programs under guidance of faculty members and designated guiding teachers in K-12 public school settings. May be repeated for credit with consent of instructor. P/NP or letter grading.

**195. Community Internships in Arts Education. (2 to 4)** Tutorial, one hour; fieldwork, eight to 10 hours. Limited to juniors/seniors. Internship in supervised setting in K-12 schools or community arts organizations. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**197. Individual Studies in Arts Education. (2 to 4)** Tutorial, to be arranged. Preparation: 3.0 grade-point average in major. Limited to juniors/seniors in Visual and Performing Arts Education minor and/or arts education teaching sequence. Individual intensive study, with scheduled meetings to be arranged between faculty member and student. Tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required. Letter grading.

## WORLD ARTS AND CULTURES/DANCE

*School of the Arts and Architecture*

150 Kaufman Hall  
Box 951608  
Los Angeles, CA 90095-1608

**World Arts and Cultures/Dance**

310-825-3951

**Department e-mail**

Janet M. O'Shea, PhD, *Chair*

-----, *Graduate Vice Chair*

-----, *Undergraduate Vice Chair*

## Faculty Roster

### Professors

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Dan Froot, MFA  
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Victoria E. Marks, BA  
Janet M. O'Shea, PhD  
Lionel A. Popkin, MFA  
David J. Roussève, BA  
Peter M. Sellars, BA  
David Delgado Shorter, PhD  
Patricia A. Turner, PhD

### Professors Emeriti

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Irma Dosamantes-Beaudry, PhD  
Elsie A. Dunin, MA  
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Angelia Leung, MA, CMA  
Judy M. Mitoma, MA  
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### Assistant Professors

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Alexander J. Flynn, PhD  
Wendy Sung, PhD

### Lecturers

Gracelyn W. Coad, MA  
Robert W. Een, BA  
Leigh R. Foaad  
Ginger Holguin, BFA  
Jackelyn G. Lopez, BA  
Natsuo Tomita  
Jason C. Tsou, MS

### Adjunct Professor

Ann M. Carlson

### Adjunct Associate Professor

Roslyn K. Warby

## Overview

Defined by a dynamic blend of theory and practice, the Department of World Arts and Cultures/Dance (WAC/D) is led by a renowned faculty of scholars, activists, curators, filmmakers, and choreographers dedicated to critical cross-cultural analysis and art-making. The department is the place to make dances, explore digital media, curate exhibitions, become an arts activist, and develop scholarly expertise in culture and the arts. Multiple disciplines and artistic approaches are used to encourage students to position their work within broad social contexts.

In the World Arts and Cultures BA arts activism, visual cultures, and critical ethnographies are emphasized. The Dance BA integrates composition, training, and improvisation, while challenging students to locate dance politically, culturally, and historically. The MFA in Choreographic Inquiry promotes adventurous choreographic inquiry and engages with global discourses around the body and performance. The MA/PhD programs in culture and performance address theories of corporeality, performance, visuality, and culture, and offer interdisciplinary training that fosters independent research. The Art and Global Health Center enables undergraduate and graduate students to explore art as a life-saving activity.

The path-breaking programs of the department are committed to academic excellence, diversity, freedom of expression, activism, and social transformation through the arts.

## Undergraduate Study

The undergraduate program offers majors in Dance and in World Arts and Cultures.

The BA in Dance thoroughly integrates learning to dance, learning to make dances, and critical interrogation of dance as a cultural practice. Students study a variety of dance throughout their studies. They enroll in a four-term sequence in dance composition, with additional opportunities to participate in the creation of their own dances, as well as working as dancers in the creation of new works by faculty members and visiting artists. Further, they engage in a core of four courses in the study of scholarly discourse around the body and

dance, launching a critical inquiry into their own study of bodily practices, internalization of the embodied experience, and how bodily ideas and embodied experiences are interpreted and communicated outwardly and interpersonally, both locally and globally.

The BA in World Arts and Cultures highlights culture and representation as key perspectives for understanding creativity in local and global arenas. Three streams of cross-cultural and interdisciplinary study are available: arts activism, critical ethnographies, and visual cultures. These streams define the department commitment to a range of practices, including ethnography, activism, visual and related expressive arts, documentary and short films, museum and curatorial studies, performance, and other creative perspectives and methods. Courses combine theory and practice and are grounded in culturally diverse artistic expressions.

All students are encouraged to complement the required set of core and elective departmental courses with others offered across campus, such as courses from ethnic and area studies programs, and may organize their course of study in relation to particular interests or professional goals (e.g., international comparative studies, intercultural studies, education, area specializations such as Africa, Asia, or Latin America, minority discourse, gender studies).

## Graduate Study

The graduate program offers Master of Arts (MA) and Doctor of Philosophy (PhD) degrees in Culture and Performance and a Master of Fine Arts (MFA) in Choreographic Inquiry. Culture and performance students research communities, cultures, and transnational movements through heritage and globalization studies, multivocal ethnographies, dance and theories of corporeality and embodiment, visual and material culture, critical museum and curatorial studies, documentary practice and Internet interventions, as well as arts activism and interdisciplinary art making. The MFA in Choreographic Inquiry offers opportunities to engage multiple movement practices as students work on pioneering research in the form of new choreography. Students may focus on media, dance studies theory, and theories of the body as supplements to their work as choreographers. The Art and Global Health Center within the department presents further opportunity for learning and practice.

While operating with considerable independence, the two graduate degree areas are unified by the department's common concern for aesthetic production, corporeality and performance, the dynamics of tradition, and culture-building in contemporary societies. Connections are forged between critical theory and artistic practices, and attention is given to the changing social roles and responsibilities of artists, practitioners, and scholars of the arts in the U.S. and worldwide.

Undergraduates and graduates have excelled in fields including technology and the arts, videography, documentary work, public service, education, theatrical/events production, performing arts, urban planning, law, environmen-

tal activism, public health, and medicine. They have made careers in community nonprofits and activist groups, government arts agencies, museums, and arts foundations. Potential careers for MA, PhD, and MFA graduates also include positions in research universities and colleges, and MFA graduates are active as choreographers/performers in their own companies or with other professional organizations.

## Undergraduate Majors

### Dance BA

All students take a set of courses as preparation for the Dance major that focus on the integration of dance and critical analysis. For students who transfer into the major, depending on the year of entry and prior coursework, lower-division preparatory coursework may be waived or substituted. When students enter the major, they continue their studies of dance technique, composition, and analysis, and they also enroll in a primary and secondary research area.

The three research areas are (1) creative inquiry as research, (2) critical dance studies, and (3) dance and civic engagement. The *creative inquiry as research* area is grounded in contemporary choreography with a focus on dance-making and performing in a wide range of genres from throughout the world. Opportunities are provided for students to present their own choreography, to participate in performances by others, and to study performance production and videography. The *critical dance studies* area focuses on study of scholarship examining the body and dance, in their cultural and historical contexts. Courses in dance history, dance and culture, and dance as an identificatory practice are offered that enable students to analyze the rhetorical and ideological significance of dance. The *dance and civic engagement* area is grounded in the investigation and activist-oriented work of artists and the role of dance in the public sphere, and offers a wide range of courses in the nature of activism as well as opportunities for fieldwork, education internships, and other forms of community involvement.

Students select one area as their primary area and another as their secondary area. Elective options provide further deepening of student knowledge and skills in any or all of the areas. Students may also consider courses from programs outside the department and may organize their course of study in relation to their particular interests.

Students who wish to confer with the departmental student affairs officer regarding program planning and major requirements should contact the [undergraduate counselor](#).

### Learning Outcomes

The Dance major has the following learning outcomes:

- Choreography of dances in various settings, cultural contexts, and media, with emphasis on progressive approaches
- Creative problem-solving of issues tied to arts and activism, dance-making, and producing

in multiple formats, in an intercultural and interdisciplinary context

- Think critically about the relationship between aesthetics and politics through choreography, written analysis, and multiple research methods
- Demonstrated advanced proficiency in at least two movement disciplines
- Analysis of vocabulary, location, and syntax of dance works
- Analysis of political, cultural, and historical implications of dance works
- Demonstrated ability to understand and implement collaboration in an art-making practice
- Written and oral recognition and synthesis of key concepts in critical dance studies

## Entry to the Major

### Admission

New students are admitted to the Dance major for fall quarter only. All applicants are reviewed individually, based on submission of a written research paper, transcripts, two letters of recommendation, and one personal essay. These supplementary materials are requested from students in mid-December, after the general UC application is received and processed, and are due back in the department in January. For first-year applicants, college placement test scores are also considered. Students must participate in a late January/early February audition. Specifics about the audition are included in the e-mail requesting the above-mentioned supplementary materials.

Change of major applications are considered once a year. Current UCLA students who petition to change their major are required to meet with the student affairs officer prior to application, but no later than the eighth week of fall quarter in order to participate in the departmental supplemental application process during fall/winter quarters for admission into the program the following spring or fall quarter. They are required to take selected departmental courses before and during the term in which they apply to the program (contact the student affairs officer for a list of selected courses). They must have a minimum 2.0 overall grade-point average, a minimum 2.0 GPA in all departmental courses taken, and no more than 90 quarter units at the time of application. All students are required to audition in early winter quarter and may be interviewed as part of the application process.

## Requirements

### Preparation for the Major

*Required:* Dance 1, 16, 44, 45, 67A, 67B, 70.

### The Major

The Dance major consists of 76 units of coursework.

*Required:* (1) Dance 101, 117A, 117B and (2) 10 units in the primary area and 5 units in the secondary area selected from the following: (a) *creative inquiry as research*—Dance 114, 116, 117C, C122, 170, C171, 174A, C174B, C180, or other upper-division courses with faculty ap-

proval, (b) *critical dance studies*—Dance C145XP, C152, M157, 158, 160, CM168, C171, 182, World Arts and Cultures 199, or other upper-division courses with faculty approval, (c) *dance and civic engagement*—Dance 114, C184, World Arts and Cultures 100A, 100B, 103, 144, 160, 177XP, 195, or other upper-division courses with faculty approval (no more than 8 units of courses 114 and/or 160 may be applied toward this area). Students also have the option to propose a senior honors project through Dance 186A and 186B.

*Movement Arts/Dance Practices*—*Required:* A total of 48 units of practice courses. A minimum of two technique courses per term until completion is strongly recommended. Thirty of the total 48 units must be selected from Dance 6, 9, 13, 15, 56, 59, 63, 65, C106A, C113A, C115, 116. Of these 30 units, a minimum of 6 units of a first style and 4 units of a second style must be at the advanced level. Eighteen of the total 48 units may be selected from Dance 5, 10, 11, 12, 16, 52, 60, C112A, 116, 160, World Arts and Cultures 55, 78, 80, 178. No more than 8 units of World Arts and Cultures 78 or 178 may be applied toward this requirement.

### Senior Honors Project

Students may participate in a senior honors project consisting of 10 additional units. The project provides students with opportunity to demonstrate mastery and integration of knowledge and learned abilities from the major. The project may take various forms—from choreographic performance projects or an academic research paper to field/internship work in an identified area of research focus. With faculty advising, students must declare their intent to participate by spring quarter of their junior year. They identify a faculty mentor and work closely with that person on the development of the project, submitting a senior project proposal for faculty approval by the beginning of the senior year. In their senior year they enroll in a two-term course sequence (Dance 186A, 186B) to coordinate and present their research findings.

## World Arts and Cultures BA

The World Arts and Culture major emphasizes a cross-cultural and interdisciplinary approach to the study of art making, community engagement, and multimedia analysis. The five required preparation for the major courses introduce students to the intersectionality evidenced in the collective work of the faculty. A lower-division, practice-based course enables students to connect the practice and study of art-making across a variety of genres and forms. In three lower-division seminars, students are prepared for the major by studying theoretical concepts of culture, the tensions between local and global art perception, and the diverse ways that colonialism has been understood and resisted around the globe.

Building upon the foundational preparation courses, the required core courses of the major expand interpretive lenses to include ethics of representation, methods of research, an opportunity to build upon one's practice-based experience, and a one-credit course that connects students with faculty advisers to increase

awareness of field-specific scholarship, disciplinary methods, and various genres and forms for intellectual output, particularly as these might be articulated with post-graduate aspiration.

Students in the major have the option to pursue a senior praxis project. Working with faculty advisers, students will be able to develop a performance, film, event, multimedia production, and other possible forms of evidence of their education in the department.

Students who wish to confer with the departmental student affairs officer regarding program planning and major requirements should contact the [undergraduate counselor](#).

## Learning Outcomes

The World Arts and Cultures major has the following learning outcomes:

- Demonstrated critical analyses of a variety of approaches to visual and performance-based art making and activism in cross-cultural contexts
- Interpretation of and, in some cases, conduction of field-based research within specific communities
- Demonstrated ability to conceptualize, plan, and exercise art, curatorial, and/or ethnographic projects that reflect a dynamic dialog between theory and practice
- Demonstrated sensitivity to diversity and cultural differences, particularly as articulated within various forms of governance, national and international policy, transnational art and curatorial practices, and museum and heritage sites
- Development of informed interpretations, not only of the way that art functions within communities but also how the links between art and community are created and represented
- Articulation of the value of civic engagement within a variety of arts-oriented social contexts

## Entry to the Major

### Admission

New students are admitted to the major for fall quarter only. All applicants are reviewed individually, based on submission of a written research paper, transcripts, two letters of recommendation, and one personal essay. These supplementary materials are requested from students in mid-December, after the general UC application is received and processed, and are due back in the department in January. For first-year applicants, college placement test scores are also considered.

Change of major applications are considered once a year. Current UCLA students who petition to change their major are required to meet with the student affairs officer prior to application, but no later than the eighth week of fall quarter in order to participate in the departmental supplemental application process during fall/winter quarters for admission into the program the following spring or fall quarter. They are required to take selected departmental courses before and during the term in which they apply to the program (contact the student affairs officer for a list of selected courses). They must have a minimum 2.0 overall grade-point average, a minimum 2.0 GPA in all de-



partmental courses taken, and no more than 90 quarter units at the time of application. Students may be interviewed as part of the application process.

## Requirements

### Preparation for the Major

*Required:* World Arts and Cultures 1, 2, 20, 24, 33.

### The Major

The World Arts and Cultures major consists of 46 units of coursework.

*Required:* (1) World Arts and Cultures 100A or 100B, 102, 104, 124, 185; (2) 25 units from any World Arts and Cultures elective courses, or other upper-division courses with faculty approval.

### Senior Praxis Project

Students may choose to complete a senior praxis project by completing 15 units of elective coursework and the following two courses (or 10 units of equivalent coursework with faculty approval). World Arts and Cultures 2 and 102 provide the foundational training in making practice-based techniques. Students begin to identify a project in the required World Arts and Cultures 185 Junior-Year Proposal course during their junior year. With the support of their instructor, students can be approved to choose the senior praxis project during their final three quarters of enrollment. Projects may include written theses, visual ethnographies, documentaries, curatorial projects, installations, short films, internships, community service, field-based research, as well as other formats. Projects are crafted in close consultation with faculty advisers to provide capstone experiences that draw together ideas and abilities from their WAC/D curriculum while positioning students for postgraduate opportunities.

## Graduate Majors

### Choreographic Inquiry MFA

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announcements, other publications, and websites of the schools, departments, and programs.

### Culture and Performance MA, PhD

The master's degree may be earned only in the process of completing PhD requirements.

#### Requirements

Official, specific degree requirements are detailed in [program requirements for UCLA graduate degrees](#), available at the Graduate Education website. In many cases, more detailed guidelines may be outlined in announce-

ments, other publications, and websites of the schools, departments, and programs.

## Dance

### Lower-Division Courses

**1. Global Perspectives on Dance. (5)** Lecture, three hours; discussion, one hour. Examination of practices of choreography, improvisation, and technique in different cultural settings and historical eras. Introduction to field of dance studies through analysis of broad spectrum of philosophies and practices within global context, with focus on creative act of dance-making, thinking and understanding act of improvising, and diverse ways of training one's body. By framing process of analysis within array of historical periods and cultural settings, development of capacity to engage with dance as lived social and artistic practice while refining critical seeing, thinking, and writing skills. P/NP or letter grading.

**5. Moving Voice. (2)** Studio, three hours. Experiential investigation of voice as it relates to resonant, physical body. Working with primal qualities of voice and how it interfaces with breath, physical anatomy, and space around us. Physical approach to singing, with singing being defined in its broadest sense as all possible sounds emitted by human voice. May be repeated for credit without limitation. P/NP or letter grading.

**6. Beginning West African Dance. (2)** Studio, three hours. Beginning-level study of dances originating from Mandingo culture in sub-Saharan Africa. May be repeated for credit without limitation. P/NP or letter grading.

**9. Beginning Hip-Hop Dance. (2)** Studio, three hours. Beginning-level study of hip-hop movement practices. May be repeated for credit without limitation. P/NP or letter grading.

**10. Beginning Martial Arts. (2)** Studio, three hours. Beginning-level study of Tai Chi Chuan and other martial arts forms. May be repeated for credit without limitation. P/NP or letter grading.

**11. Yoga. (2)** Studio, three hours. Beginning-level study of yoga. May be repeated for credit without limitation. P/NP or letter grading.

**12. Beginning Special Topics. (2)** Studio, three hours. Beginning-level study of variable movement practices. May be repeated for credit without limitation. P/NP or letter grading.

**13. Beginning Ballet. (2)** Studio, three hours. Beginning-level study of ballet as movement practice. May be repeated for credit without limitation. P/NP or letter grading.

**15. Beginning Modern/Postmodern Dance. (2)** Laboratory, four hours. Study of modern and/or postmodern movement practice. May be repeated for credit without limitation. P/NP or letter grading.

**16. Beginning Improvisation in Dance. (2)** Laboratory, four hours. Introduction to creative exploration in movement through improvisational and compositional exercises that access and develop imagination, find relationship between imagination and dance making, and enrich movement vocabulary. May be repeated for credit without limitation. P/NP or letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**44. World Dance Histories. (5)** Lecture, three hours; discussion, two hours. Comparative framework for looking at dance practices through time as they have developed around world, questioning relation of dance to culture and politics and providing students with tools for investigating histories of any given dance form. P/NP or letter grading.

**45. Introduction to Dance Studies. (4)** Lecture, three hours. Enforced requisite: course 44. Introduction to discipline of dance studies, with focus on study of corporeality as key contemporary perspective on body. Multidisciplinary approach to dancing bodies concep-

tualized as social constructs, including attention to gender, race, class, and national identity. P/NP or letter grading.

**52. Intermediate Special Topics. (2)** Studio, three hours. Intermediate-level study of variable movement practices. May be repeated for credit without limitation. P/NP or letter grading.

**56. Intermediate West African Dance. (2)** Studio, three hours. Intermediate-level study of dances originating from Mandingo culture in sub-Saharan Africa. May be repeated for credit without limitation. P/NP or letter grading.

**59. Intermediate Hip-Hop Dance. (2)** Studio, three hours. Intermediate-level study of hip-hop movement practices. May be repeated for credit without limitation. P/NP or letter grading.

**60. Intermediate Martial Arts. (2)** Studio, three hours. Intermediate-level study of Tai Chi Chuan and other martial arts forms. May be repeated for credit without limitation. P/NP or letter grading.

**63. Intermediate Ballet. (2)** Studio, three hours. Intermediate-level study of ballet as movement practice. May be repeated for credit without limitation. P/NP or letter grading.

**65. Intermediate Modern/Postmodern Dance. (2)** Studio, four hours. Intermediate-level work in modern and/or postmodern movement practices. Technical training with emphasis on increasing skill. May be repeated for credit without limitation. P/NP or letter grading.

**67A. Theories and Methods in Dance Composition I: Languages. (4)** Seminar, two hours; studio, two hours; outside study, eight hours. Enforced requisite: course 16. Examination of diverse movement sources from which dances are made. How do different choreographers envision vocabularies of movement they use? How do they select or create movement out of which they create dance? Answers to these questions in relation to broad range of artistic approaches, acknowledging that dance-making occurs distinctively in different cultural contexts and different historical moments. Readings about and viewing of videos of selected artists' work and their different strategies for creating languages of their dances for comparison. Use of these analyses to assist in creative process for making new dances. P/NP or letter grading.

**67B. Theories and Methods in Dance Composition II: Processes. (4)** Seminar, two hours; studio, two hours; outside study, eight hours. Enforced requisite: course 67A. Examination of diverse processes through which creation of dance can take place. How do different choreographers conceptualize creative process of dance-making? What kinds of strategies do they use for sequencing their materials? Answers to these questions in relation to broad range of artistic approaches, acknowledging that dance-making occurs distinctively in different cultural contexts and different historical moments. Readings about and viewing of videos of selected artists' work and their different strategies for their processes of creating dances for comparison. Use of these analyses to assist in creative process for making new dances. P/NP or letter grading.

**70. Production Practicum. (2)** Lecture, 90 minutes; activity, three and one half hours. Introduction to practical perspectives on producing events in world arts and cultures, including but not limited to theatrical support and planning and executing lecture series. Introduction to professional stage production principles and hands-on experience in technical theater. May be repeated once for credit. P/NP grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and en-



rolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

## Upper-Division Courses

**101. Theories of Dance. (5)** Lecture, four hours; discussion, two hours. Enforced requisite: course 45. Ideas of dance, choreography, and movement have achieved broad resonance in contemporary performance, art, politics, culture, and studies of social behavior. Examination of concepts and approaches to dance studies and deployments of its vocabulary within field and beyond, concentrated in four principal approaches: history, ethnography, choreographic analysis, and critical theory. Use of key ideas in dance to investigate allied areas of performance, embodiment, social constructions of identity and difference, and relationship between aesthetics and politics. Design of dance performances to illustrate link between theory and practice. How dance creates alternative modes of history and knowledge in range of cultural contexts. P/NP or letter grading.

**C106A. Advanced West African Dance. (2)** Studio, three hours. Advanced-level study of dances originating from Mandingo culture in sub-Saharan Africa. May be repeated for credit without limitation. Concurrently scheduled with course C406A. P/NP or letter grading.

**C109A. Advanced Hip-Hop Dance. (2)** Studio, three hours. Advanced-level study of hip-hop movement practices. May be repeated for credit without limitation. Concurrently scheduled with course C409A. P/NP or letter grading.

**C113A. Advanced Ballet. (2)** Studio, three hours. Advanced-level study of ballet as movement practice. May be repeated for credit without limitation. Concurrently scheduled with course C413A. P/NP or letter grading.

**114. Performance Practicum. (1 to 4)** Studio, three to 12 hours. Rehearsal and performance in selected choreographic/theatrical work. May be repeated for credit without limitation. P/NP grading.

**C112A. Advanced Special Topics. (2)** Studio, three hours. Advanced-level study of variable movement practices. May be repeated for credit without limitation. Concurrently scheduled with course C412A. P/NP or letter grading.

**C115. Advanced Modern/Postmodern Dance. (2)** Studio, six hours. Advanced-level work in modern and/or postmodern movement practices. Technical training, with emphasis on increased understanding of movement principles and ability to apply these to performance. May be repeated for credit without limitation. Concurrently scheduled with course C415. P/NP or letter grading.

**116. Advanced Improvisation in Dance. (2)** Studio, four hours. Enforced requisite: course 16. Development of aesthetic perspective through use of imagery, sound, and other art. Concentration and projection. May be repeated for credit without limitation. P/NP or letter grading.

**117A. Theories and Methods in Dance Composition III: Locations. (4)** Seminar, two hours; studio, two hours; outside study, eight hours. Enforced requisites: courses 16, 67A, 67B. Examination of how location of dancing impacts its meaning. How does occasion of dance, concert, festival, ritual, or celebration influence experience of it? What are factors that need to be considered when locating dance in one particular place? Answers to these questions in relation to broad range of artistic approaches, acknowledging that dance-making occurs distinctively in different cultural contexts and different historical moments. Examination of range of locations for dances, including proscenium stages, theaters in round, parks, sidewalks, temples, amphitheaters, village squares, and other site-specific locations that endow dance with specific significance and how various artists have worked with place in construction of new dances. Use of these analyses to assist in creative process for making new dances. P/NP or letter grading.

**117B. Theories and Methods in Dance Composition IV: Impacts. (4)** Seminar, two hours; studio, two hours; outside study, eight hours. Enforced requisites: courses 16, 67A, 67B. Examination of relation of dance to its audience. Synthesis of analyses undertaken in previous courses to determine how dances move their viewers. How do dances appeal to or address their audiences? How do dance vocabulary, sequencing, and location combine to create particular effects? Answers to these questions in relation to broad range of artistic approaches, acknowledging that dance-making occurs distinctively in different cultural contexts and different historical moments. Different approaches to dance result in highly distinctive kinds of responses from audiences. Focus on creation of three in-depth studies, each of which endeavors to construct distinctive kind of response from viewers. P/NP or letter grading.

**117C. Advanced Topics in Choreography. (4)** Lecture, four hours; studio, two hours; outside study, six hours. Enforced requisites: courses 16, 67A, 67B. Directed exploration in composition, with focus on developing theme-based choreographic works that are informed by theoretical engagement with selected topics through lectures, readings, and discussion. Thematic topics include contemporary issues and concerns such as image, essence, and abstraction; home, history, and memory; interculturalism; constructing identity. May be repeated for credit without limitation. P/NP or letter grading.

**C122. Music and Dance Collaborations. (4)** Studio, four hours. Requisites: courses 67A, 67B. Designed for dance students who have had prior coursework/experience in choreography and for music students who have had prior coursework/experience in music composition. Opportunity for directors, choreographers, and composers to work together creating and developing material in their respective disciplines. Exploration of different forms and ways of approaching creative process of making dance and music, presenting material on weekly basis, and developing skills for discussion, critique, and review. Concurrently scheduled with course C222. P/NP or letter grading.

**C145XP. Selected Topics in Dance Studies. (4)** (Formerly numbered C145.) Lecture, four hours; outside study, eight hours. Designed for juniors/seniors. Selected topics in study of dance and corporeality. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. Concurrently scheduled with course C245XP. P/NP or letter grading.

**C152. History and Theory of Modern/Postmodern Dance. (4)** Lecture, four hours; studio, two hours; outside study, six hours. Introduction to key figures in creation of modern dance, with special attention to their theories and philosophies and tracing of radical shift to postmodern dance that occurred in mid-20th century. Contemporary developments, both historical and theoretical. Student projects involve choreography and writing. Concurrently scheduled with course C252. P/NP or letter grading.

**M157. Choreographing Disability. (Same as Disability Studies M157.)** Seminar, four hours. Through study of range of performance by, featuring, or about people who identify as disabled, reading and discussion of range of writing about experiences of disability and process of making work about disability by key artists and thinkers. Introduction to concept of choreography as political/cultural idea broadly defined as scored movement and organization and behavior of bodies, as well as choreography as poetic form for expression of ideas, creative tool, or product. Viewing and discussion of work, and embodying ideas through movement and dance-making. P/NP or letter grading.

**158. Choreographing Gender. (4)** Lecture, three hours; laboratory, two hours. Designed for juniors/seniors. Analysis of aesthetic codes and theatrical choreographic approaches as they intersect with construction of gender in U.S., with close attention to race, class, and sexuality. P/NP or letter grading.

**160. Topics in Body Mechanics. (4)** Lecture, three hours; studio, one hour. Designed for juniors/seniors. Variable topics course with discussion of injury prevention, anatomy for dancers, and study of biological

and physical principles of human movement as related to dance. May be repeated for credit without limitation. P/NP or letter grading.

**CM168. Beyond Academia: Making Art in Real World. (4)** (Same as World Arts and Cultures CM168.) Lecture, four hours; outside study, eight hours. Designed for juniors/seniors. Focus on understanding bureaucratic structures and regional histories conditioning creation of art in real world, including such practical issues as publicity and grant-writing. Concurrently scheduled with course CM268. P/NP or letter grading.

**170. Advanced Production. (1 to 2)** Laboratory, three hours; outside study, up to three hours. Requisite: course 70. Further development and application of practical perspectives on producing events in department, including but not limited to theatrical support and planning and executing lecture series. Provides students with advanced practical knowledge necessary, as well as opportunity to study nature of this component in world arts and cultures/dance studies. May be repeated for credit without limitation. P/NP grading.

**C171. Dance Production: Variable Topics. (4)** Lecture, four hours; laboratory, two hours. Foundational experience in range of dance production practices, including but not limited to lighting design, set design, costume design, and stage management. Practical training in area covered, combined with theoretical inquiry into practice and opportunities for students to reflect on their own work and that of others. Completion of production project required. May be repeated for maximum of 12 units. Concurrently scheduled with course C271. P/NP or letter grading.

**174A. Projects in Dance. (2)** Laboratory, four hours. Individualized major projects in choreography, performance, cultural studies, production, and media. May be repeated for credit without limitation. P/NP or letter grading.

**C174B. Projects in Dance. (4)** (Formerly numbered 174B.) Laboratory, six hours. Individualized final showing, video viewing and comparison paper in choreography, performance, cultural studies, production, and media. May be repeated for credit without limitation. Concurrently scheduled with course C274B. P/NP or letter grading.

**182. Dance and Visual Media. (4)** Lecture, four hours. Examination of aesthetic differences between dance, film, and video and exploration of new aesthetic when they are combined. Analysis of record and documentary dance film, choreo-cinema, and impact of MTV, as well as integration of media with performance. Letter grading.

**C180. Dance for Camera. (4)** Lecture, two hours; laboratory, two hours. Introduction to making dance for camera. Students acquire and apply basic video production skills for creation of movement-based projects. With rudimentary tools—to film, frame, set up shots, storyboard, design shot lists, and set-up lists, log and capture, edit, and export footage—students create their own dance for camera video projects. Students gain deeper understanding of conceptualization, practice, theory, history, and current state of dance for camera. Concurrently scheduled with course C280. Letter grading.

**C184. Production Arts Seminar. (4)** Seminar, four hours. Theory and practice of production administration, including hands-on case studies for producing public events in arts and academia. Topics include, but are not limited to, history and theories of producing, mission statements, budgeting, marketing, public relations, fund-raising, legalities, and archiving. Concurrently scheduled with course C243. P/NP or letter grading.

**186A-186B. Senior Projects in Dance. (5-5)** Lecture, four hours; outside study, 11 hours. Course 186A is requisite to 186B. Limited to senior Dance majors. Application of concepts, skills, and content from interdisciplinary major to individual projects. Methodologies may include critical, comparative, ethnographic, and performance approaches. Lecture/seminar format with Dance faculty during first term; faculty-directed presentations of individual projects during second term. Letter grading.

**188SA. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators. (1)** Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators. (2)** Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

## Graduate Courses

**211A-211E. Advanced Choreography. (4 each)** Lecture, two hours; studio, two hours. Theoretical aspects of advanced choreography for students who have reached level of self-initiation of substantial creative works. Refinement and realistic self-evaluation; critical counsel by acknowledged choreographers. S/U or letter grading.

**C222. Music and Dance Collaborations. (4)** Studio, four hours. Requisites: courses 67A, 67B. Designed for dance students who have had prior coursework/experience in choreography and for music students who have had prior coursework/experience in music composition. Opportunity for directors, choreographers, and composers to work together creating and developing material in their respective disciplines. Exploration of different forms and ways of approaching creative process of making dance and music, presenting material on weekly basis, and developing skills for discussion, critique, and review. Concurrently scheduled with course C122. S/U or letter grading.

**C243. Production Arts Seminar. (4)** Seminar, four hours. Theory and practice of production administration, including hands-on case studies for producing public events in arts and academia. Topics include, but are not limited to, history and theories of producing, mission statements, budgeting, marketing, public relations, fund-raising, legalities, and archiving. Concurrently scheduled with course C184. S/U or letter grading.

**C245XP. Selected Topics in Dance Studies. (4)** (Formerly numbered C245.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Selected topics in study of dance and corporeality. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. Concurrently scheduled with course C145XP. S/U or letter grading.

**C252. History and Theory of Modern/Postmodern Dance. (4)** Lecture, four hours; studio, two hours; outside study, six hours. Introduction to key figures in creation of modern dance, with special attention to their theories and philosophies and tracing of radical shift to postmodern dance that occurred in mid-20th century. Contemporary developments, both historical and theoretical. Student projects involve choreography and writing. Concurrently scheduled with course C152. S/U or letter grading.

**CM268. Beyond Academia: Making Art in Real World. (4)** (Same as World Arts and Cultures CM268.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Focus on understanding

bureaucratic structures and regional histories conditioning creation of art in real world, including such practical issues as publicity and grant-writing. Concurrently scheduled with course CM168. S/U or letter grading.

**C271. Dance Production: Variable Topics. (4)** Lecture, four hours; laboratory, two hours. Foundational experience in range of dance production practices, including but not limited to lighting design, set design, costume design, and stage management. Practical training in area covered, combined with theoretical inquiry into practice and opportunities for students to reflect on their own work and that of others. Completion of production project required. May be repeated for maximum of 12 units. Concurrently scheduled with course C171. S/U or letter grading.

**C274B. Projects in Dance. (4)** Laboratory, six hours. Individualized final showing, video viewing and comparison paper in choreography, performance, cultural studies, production, and media. May be repeated for credit without limitation. Concurrently scheduled with course C174B. S/U or letter grading.

**C280. Dance for Camera. (4)** Lecture, two hours; laboratory, two hours. Introduction to making dance for camera. Students acquire and apply basic video production skills for creation of movement-based projects. With rudimentary tools—to film, frame, set up shots, storyboard, design shot lists, and set-up lists, log and capture, edit, and export footage—students create their own dance for camera video projects. Students gain deeper understanding of conceptualization, practice, theory, history, and current state of dance for camera. Concurrently scheduled with course C180. Letter grading.

**C406A. Advanced West African Dance. (2)** Studio, three hours. Advanced-level study of dances originating from Mandingo culture in sub-Saharan Africa. May be repeated for credit without limitation. May be repeated for credit without limitation. Concurrently scheduled with course C106A. S/U or letter grading.

**C409A. Advanced Hip-Hop Dance. (2)** Studio, three hours. Advanced-level study of hip-hop movement practices. May be repeated for credit without limitation. Concurrently scheduled with course C109A. S/U or letter grading.

**C412A. Advanced Special Topics. (2)** Studio, three hours. Advanced-level study of variable movement practices. May be repeated for credit without limitation. Concurrently scheduled with course C112A. S/U or letter grading.

**C413A. Advanced Ballet. (2)** Studio, three hours. Advanced-level study of ballet as movement practice. May be repeated for credit without limitation. Concurrently scheduled with course C113A. S/U or letter grading.

**C415. Advanced Modern/Postmodern Dance. (2)** Studio, six hours. Advanced-level work in modern and/or postmodern movement practices. Technical training, with emphasis on increased understanding of movement principles and ability to apply these to performance. May be repeated for credit without limitation. Concurrently scheduled with course C115. S/U or letter grading.

**441. Dance Production Practicum. (2 to 4)** Laboratory, four to eight hours (one or two hours may be individualized consultation). Skills and understanding of production components in roles of stage manager, production assistants, and producer. May be repeated for maximum of 8 units. S/U grading.

**452. Directed Field Study in Dance Education. (2 to 8)** Seminar, one hour; field study, two hours minimum. Directed field study to provide teaching experience in community school or other approved site. No more than 4 units may be applied toward MA degree requirements. S/U grading.

**490. Projects in Choreography and Performance. (2 to 8)** Tutorial, one three-hour rehearsal per unit per week minimum. Creation, casting, and rehearsing of culminating concert, reflecting professional achievement in choreography or performance, in first term. In second term, direction of on-stage rehearsals for culminating concert by each student leading to fully staged performance. May be repeated for maximum of 16 units. S/U or letter grading.

**498. Professional Internship in Dance. (4, 8, or 12)** Seminar, to be arranged. Full- or part-time supervised fieldwork. Limited to MFA students. Internship in dance, theater, film, or television organization. Participation in creative, administrative, or technical work of professionals in their specialties. S/U or letter grading.

## World Arts and Cultures Lower-Division Courses

**1. Introduction to World Arts and Cultures. (5)** Lecture, three hours; discussion, one hour. Survey of concepts and theories involved in intercultural, interdisciplinary study of art, aesthetics, and performance. Examination of interactions among various modes of creative expression, role of style in daily life, performative representation of cultural identity and difference, and interaction of diverse artistic traditions. Letter grading.

**2. Lower-Division Seminar. (5)** Seminar, four hours; outside study, 11 hours. Variable topics seminar with focus on scholarly and practice-based research in arts. In-depth investigations of topics ranging from body in cultural context, interdisciplinary art-making, visual cultures, oral genres, material culture, study of culture and performance, including individual and cultural identity through arts, creation of dance/theatrical performance, theoretical and analytical approaches to arts practice, arts activism, and other topics pertaining to broad fields of culture, performance, and dance. Research inquiry methods may include readings, assigned written analysis, supervised fieldwork, individual and collaborative assignments, and/or practice-oriented processes. Substantial culminating project integrating theoretical and practical components of selected seminar topic required. May be repeated for credit. Letter grading.

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Culture: Introduction. (5)** Lecture, four hours. Introduction to key concepts and major theoretical and methodological debates that characterize field of cultural studies, including discussion of notions of culture, popular culture, subculture, youth culture, hegemony, gender, race, class, and national identity. Letter grading.

**22. Introduction to American Folklore Studies. (5)** Lecture, four hours; discussion, one hour; outside study, 10 hours. Cultural/historical survey of role of folklore in development of American civilization and of influence of American experience in shaping folklore in American society; attention also to representative areas of inquiry and analytical procedures. P/NP or letter grading.

**M23. Introduction to American Indian Studies. (5)** (Same as American Indian Studies M10.) Lecture, three hours; discussion, one hour; activity, one hour. Survey of selected Native North American cultures from pre-Western contact to contemporary period, with particular emphasis on early cultural diversity and diverse patterns of political, linguistic, social, legal, and cultural change in postcontact period. P/NP or letter grading.

**24. World Arts, Local Lives. (5)** Lecture, three hours; discussion, one hour. Use of Fowler Museum's long-term exhibition entitled "Intersections: World Arts/Local Lives" as object of study to examine many insights that arts can offer into social, political, and religious experience. Drawing heavily on cultures of Africa, Asia, Pacific, and indigenous Americas, both ancient and contemporary, consideration of degree to which notions of aesthetics and efficacy are intertwined and interdependent in art forms made to intervene in people's lives in active, instrumental ways. Use of specific case studies to illustrate and interrogate theoretical paradigms. P/NP or letter grading.

**33. Colonialisms and Resistance. (5)** Lecture, three hours; discussion, one hour. Introduction to study of indigenous worldviews as they are expressed through

art, mythology, ritual, health practice, languages, and ecology. With examples spanning globe, consideration of issues of colonialism, tradition, religious change, and legal and social implications of epistemological differences between people. Examination of critical perspectives on social development, historical progress, and intellectual assimilation. P/NP or letter grading.

**51W. Aliens, Psychics, and Ghosts. (5)** Lecture, three hours; discussion, two hours. Enforced requisite: English Composition 3. Combination of approaches of discourse analysis and scientific method to understand how people make sense of other people's stories of aliens, psychics, and ghosts. Exploration of how people come to believe what they do about human life, life after death, and other-than-human life. Satisfies Writing II requirement. Letter grading.

**55. Intermediate World Arts Practices in Global and Transcultural Forms. (2)** Studio, three hours; outside study, three hours. Intermediate-level study of world arts practices crossing national and cultural boundaries. Variable topics, such as body music, cross-cultural textile creation, or mural painting, in cultural and historical context. May be repeated for credit without limitation. P/NP or letter grading.

**78. Private Instruction in World Arts and Cultures. (2 to 4)** Studio, three to six hours. Designed for freshmen/sophomores. Private or semiprivate instruction in one world arts practice with distinguished community-based artist to be arranged by students and approved by instructor. May be repeated for maximum of 24 units. P/NP or letter grading.

**M79. Food Politics: Cultural Solutions to political Problems. (5)** (Same as Food Studies M79.) Lecture, four hours; discussion, one hour. Examination of issues of environmental and public health effects of intensive and extensive agriculture, influence of corporations on government, animal ethics, food deserts and urban gardening, and food insecurity. Focus on representation of such issues in documentaries, public lectures, memoirs, novels, and visual art, as well as on initiatives to address such problems through policy and activism. P/NP or letter grading.

**80. Video Tools and Techniques. (2)** Laboratory, four hours. Introduction to video tools and practices to train students in key techniques of video production. Basic skills spanned to develop short videos for circulation via DVD and/or Internet. Practical exercises based on materials and instruction provided in class, spanning production and postproduction processes of video making. Evaluation of students on these exercises and final submission of edited sequence of any or all materials developed during course. Training in technical aspects of video production and usage of video tools. P/NP or letter grading.

**85. Sophomore-Year Proposal. (1)** Lecture, 90 minutes. Planning and execution of proposal for junior year of study, with attention to exploring resources of department and University as whole. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**100A. Art as Social Action. (5)** Lecture, four hours; discussion, one hour. Designed for juniors/seniors. Discussion of what constitutes artist's social responsibility and in what ways art is qualified to engage in direct political action. Study of tension between powers of this world and powers of art. P/NP or letter grading.

**100B. Art as Moral Action. (5)** Lecture, four hours; discussion, one hour. Designed for juniors/seniors. One's ability to distinguish between right and wrong action is culturally intuited, nurtured, and developed. Study of cultural strategies of moral engagement, persuasion, and inquiry in personal and public life, including acts of conscience and civil disobedience. P/NP or letter grading.

**101. Theories of Performance. (5)** Lecture, four hours; studio, two hours. Performance commonly refers to activities on proscenium stage. Explosion of that narrow notion of performance by delving into scholarship from young field of performance studies, which draws on disciplines of anthropology, cultural studies, gender studies, linguistics, postcolonial theory, and sociology. Exploration in studio of concept of performing theory by creating interdisciplinary performance works that engage with and amplify theories studied. P/NP or letter grading.

**102. Upper-Division Seminar. (5)** Seminar, three hours. Variable topics seminar with focus on advanced practice-based research in arts. In-depth investigations of topics addressing variable array of art genres including drawing, musical composition, painting, performance poetry, photography, sculpture, stand-up comedy, and theater. Research inquiry methods emphasize creation of art works supported by readings, assigned written analysis, supervised fieldwork, individual and collaborative assignments, and/or practice-oriented processes. Substantial culminating project integrating theoretical and practical components of selected seminar topic required. May be repeated once for credit. Letter grading.

**103. Arts in Communities. (5)** Lecture, four hours. Introduction to theoretical and practical understanding of field of community arts by and for multiple publics. Review of relevant issues in field and exploration of roles of artists and arts organizations in struggles for social change, representation, and community building. Through national and international examples, exploration of art works that emphasize participation of citizens in community-based and culturally relevant performance, art, and exhibition. Examination of processes of creative thinking, community involvement, collaborative enterprise, research, and education in community arts. Letter grading.

**104. Representations: Theories and Practices. (5)** Lecture, three hours. Enforced requisite: course 20. Limited to juniors/seniors. Advanced survey into performance, postcolonial, and gender theories to critically analyze issues of representation, specifically interrogating divides and overlaps between intellectual and artistic practice and mixing theory with practice. P/NP or letter grading.

**CM113B. Legislative Theater for Race and Gender Justice. (5)** (Same as African American Studies CM113B.) Lecture, three hours; discussion, one hour (when scheduled). Exploration and application of range of interactive methods and arts-based strategies with participants from UCLA and broader Los Angeles community in order to research and influence public policy and legislative change. Students and campus partners create and perform legislative theater addressing issues of race, gender, and criminal justice system. Critical texts, collaborative work, and creative methods are used to engage perspectives on justice. Analysis of diverse and growing body of work on systems of justice through research, writing, workshops, performances, and critiques of own original writings and performances developed in response to visiting scholars and community partners. Concurrently scheduled with course CM213B. P/NP or letter grading.

**M113D. Spoken Word Workshop: Creative Writing and Performance Practicum. (4)** (Same as African American Studies M113D.) Lecture, three hours. Enrollment by consent of instructor. Shaped by, and consistently inspiring, broader movements for social and political change, practice of spoken word today provides creative outlets for writers and performing artists worldwide by resisting and remixing elements of traditional verse, participatory theater, and popular culture. To develop writing and performance skills, and to deeply understand selection of poets and performing artists who have shaped spoken word as known

today, investigation of aesthetics and political movements of their time through critical essays and poetry from range of influential movements. P/NP or letter grading.

**114. Performance Practicum. (1 to 4)** Studio, three to 12 hours. Rehearsal and performance in selected community-based or theatrical work. May be repeated for credit without limitation. P/NP or letter grading.

**120. Selected Topics in Cultural Studies. (4)** Lecture, three hours. Designed for juniors/seniors. Selected topics in interdisciplinary study of arts and performance in cultural and historical context. Consult Schedule of Classes for topics to be offered in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**121. Ethnography and Performance. (4)** Lecture, four hours; outside study, eight hours. Survey of some ways that ethnography and performance interrelate, as well as development of some preliminary approaches to effectively document performance events. Reading of ethnographies of performances, as well as consideration of how performances can work ethnographically. P/NP or letter grading.

**122. Healing across Cultures. (5)** Lecture, two and one half hours; discussion, one hour. Examination of multiple traditions of healing as recorded across cultures, raising questions about continued vitality and comparisons to allopathic medicine. Study driven by theory (why people heal differently) and praxis (how things are done differently when body or health conceived differently). Broadens thinking about body, health, curing, and performances of healing (as acts and spectacles). Students draw from and contribute to Archive of Healing as database and practical project. Consideration of questions such as how cultural assumptions affect individual's options for seeking healing; what is dynamic between individual and community health; how changes in conceptions of body affect healing practices in various cultures; how image of and approach to health varies across culture; how healing has been studied previously and new lines of inquiry; if methods of healing are available to everyone regardless of cultural histories of community protocols. Letter grading.

**124. Introduction to Field-Based Research Methods. (5)** Lecture, three hours. Introduction to methods, techniques, and issues in conducting field-based research, including nature, uses, and limitations of major data-gathering procedures, ethical concerns, sampling, checks and controls, teamwork, interventions, and results as not only tangible and impersonal outcomes of inquiry but also personal and intangible. Through readings, discussion, and hands-on exercises, students learn how to plan fieldwork projects and write proposals, prepare consent forms and deal with ethical issues, observe behavior, construct questionnaires, interview, use audiovisual documentation, and manage and present data. P/NP or letter grading.

**M125A. Beyond Mexican Mural: Beginning Muralism and Community Development. (4)** (Same as Art M186A and Chicana/o and Central American Studies M186A.) Studio/lecture, four hours. Corequisite: course M125AL. Investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. P/NP or letter grading.

**M125AL-M125BL-M125CL. Beyond Mexican Mural: Muralism and Community Laboratory. (4-2-2)** (Same as Art M186AL-M186BL-M186CL and Chicana/o and Central American Studies M186AL-M186BL-M186CL.) Course M125AL is requisite to M125BL, which is requisite to M125CL. Mural and Digital Laboratory is art studio housed at Social and Public Art Resource Center in Venice, CA, where students work in community-based setting. Open to students during scheduled hours with laboratory tech support, it offers instruction as students independently and in collaborative teams research, design, and produce large-scale painted and digitally generated murals to be placed in community setting. P/NP or letter grading. **M125AL.** Beginning. Laboratory, four hours. Corequisite: course M125A; **M125BL.** Interme-

diate. Laboratory, four hours. Prerequisites: courses M125A, M125AL. Corequisite: course M125B; **M125CL**. Advanced. Laboratory, two hours. Corequisite: course M125C.

**M125B. Beyond Mexican Mural: Intermediate Muralism and Community Development.** (4) (Same as Art M186B and Chicana/o and Central American Studies M186B.) Studio/lecture, four hours. Prerequisites: courses M125A, M125AL. Corequisite: course M125BL. Continuation of investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. Continuation of project through states of production to full scale and community approval. P/NP or letter grading.

**M125C. Beyond Mexican Mural: Advanced Muralism and Community Development.** (4) (Same as Art M186C and Chicana/o and Central American Studies M186C.) Studio/lecture, six hours. Prerequisites: courses M125B, M125BL. Corequisite: course M125CL. Continuation of investigation of muralism as method of community education, development, and empowerment. Exploration of issues through development of large-scale collaborative digitally created image and/or painting for placement in community. Students research, design, and work with community participants. Continuation of project through installation, documentation, and dedication, with work on more advanced independent projects. P/NP or letter grading.

**M126. Whose Monument Where: Course on Public Art.** (4) (Same as Art M185 and Chicana/o and Central American Studies M185.) Lecture, four hours. Recommended corequisite: course M125A, M125B, or M125C. Examination of public monuments in U.S. as basis for cultural insight and critique of American values from perspective of artist. Use of urban Los Angeles as textbook in urban space issues such as who is public, what is public space at end of 20th century, what defines neighborhoods, and do different ethnic populations use public space differently. P/NP or letter grading.

**M128. Chicana Art and Artists.** (4) (Same as Art M184 and Chicana/o and Central American Studies M175.) Lecture, four hours. Introduction to Chicana art and artists. Examination of Chicana aesthetic. Chicana artists have developed unique experience and identity as artists and Chicanas. Letter grading.

**C129. Food Customs and Symbolism.** (4) Lecture, three hours. Designed for juniors/seniors. Introduction to foodways, with particular attention to customs and symbolism in America. Topics include sensory realm, child rearing practices, foodsharing, food and identity, food and its emotional significance, aversions and taboos, advertising, changing food habits, and American diet. Concurrently scheduled with course C229. P/NP or letter grading.

**CM130. Space and Place.** (4) (Same as Architecture and Urban Design CM130.) Lecture, three hours. Survey of array of spaces and places from cross-cultural or comparative perspective and with performance emphasis, with focus on mutual interaction of human beings and their created environments. Emphasis on common, ordinary, anonymous, or vernacular nonbuilt and built environments, which are built and used by members of small-scale, traditional, and transitional communities around world. Concurrently scheduled with course CM230. P/NP or letter grading.

**132. Narrative and Oral Performance.** (4) Lecture, four hours. Survey of concepts of story as text versus narrating as oral performance, studies of individual narrators, how stories are composed in performance, interaction of narrator and audience, how place and experience become embodied in narratives, modes of representing oral narrating, and politics of stories and oral performance. P/NP or letter grading.

**133. Textiles of World.** (4) Lecture, four hours; discussion, one hour; laboratory, one hour. How cloth and clothing was and continues to be hand-woven in indigenous societies. Use of textiles from Fowler Mu-

seum collection to coordinate hands-on experience with cultural history. May be repeated twice for credit. P/NP or letter grading.

**C138. American Indian Arts in Performance.** (4) Seminar, four hours. Acquisition of awareness and sensitivity to dynamic contexts within Native American worlds of performance and material culture and development of ability to focus on them and learn to conduct research on them. Examination of wide range of American Indian art and craft traditions within fullest possible range of such contexts, with performance given its most generous definition. Study of spectrum of genres, including architecture, social and dance regalia, masks, and utilitarian material culture, to investigate how such items play their part and come alive through movement, sound, spoken word, silence, and even dreams and visions. Concurrently scheduled with course C238. P/NP or letter grading.

**C139. Afro-Caribbean Ritual Arts.** (4) Lecture, three hours. Designed for juniors/seniors. Introduction of diaspora African religions, with particular attention to Caribbean culture. Lectures, readings, and video material focus on performance of ritual and its expression in religious art. Concurrently scheduled with course C239. P/NP or letter grading.

**CM140XP. Healing, Ritual, and Transformation.** (4) (Formerly numbered CM140.) (Same as Gender Studies CM143XP.) Lecture, four hours; outside study, eight hours. Designed for juniors/seniors. Examination of how various cultures think of health and wellness, not only individually but collectively. Exploration of structural inequalities within health care and medical sciences. Students are required to contribute weekly to service learning component, working with individuals and organizations in fields of health and wellness including healers, non-profits, and organizations working for social justice. May be concurrently scheduled with CM240XP. Letter grading.

**C142. Myth and Ritual.** (4) Lecture, four hours; outside study, eight hours. Designed for juniors/seniors. Myths make sense of world and its peoples, purposes, and places. Rituals embody and activate myths through dramatic transformative devices. Concurrently scheduled with course C242. P/NP or letter grading.

**143B. Introduction to Museology: Museum Exhibitions and Education.** (5) Lecture, six hours. Conceptual development of exhibitions and formulation of educational and other goals for specified audiences. Design considerations, media applications, and installation process. P/NP or letter grading.

**144. Make Art/Stop AIDS.** (5) Lecture, four hours; studio, two hours. Can arts save lives? That is central question posed here in relation to global AIDS epidemic. Working in close connection with public health and epidemiology, exploration of arts as powerfully effective tool in AIDS prevention and treatment efforts. Review of literature of AIDS cultural analysis that emerged in late 1980s in U.S. and application of that literature to international hot spots such as India, China, South Africa, and Brazil. Collaborative theory-in-action projects. P/NP or letter grading.

**C145. Curating Cultures.** (4) Lecture, three hours. Exploration of poetics and politics of exhibiting non-Western arts and cultures. Series of provocative case studies with special guest speakers addressing themes in curatorial theory and practice. Concurrently scheduled with course C245. P/NP or letter grading.

**C146. Politics of Performance.** (4) Seminar, four hours; outside study, eight hours. Designed for juniors/seniors. Opportunity to reflect on artists and intellectuals as cultural workers operating in domains of ideology, aesthetics, and theory. Analysis of such keywords as ideology, aesthetics, theory, art, politics, intervention, intellectuals, and artists. Concurrently scheduled with course C246. P/NP or letter grading.

**C150. Critical Ethnographies.** (5) Lecture, three hours. Enforced prerequisite: course 20 or 33. Survey of major tropes and rhetorical strategies to explicitly locate ethnographic method as key component of cross-cultural understanding. Examination of categorical notions of insider and outsider while also developing various per-

spectives on performed acts of identity formation. Concurrently schedule with course C250. P/NP or letter grading.

**C151. Ethnography of Religions.** (4) Lecture, three hours. Religions are cultural systems helping people to cope with misfortune, deal with death, and find fulfillment in life. Case studies reveal commonalities across cultures as cosmologies define moral being in world, divination determines causes of difficulty, spirit mediumship embodies divine intervention, and sacred arts render deities tangible. Nonjudgmental comparative investigation stressing conversation. Concurrently scheduled with course C251. P/NP or letter grading.

**C152. Visual Cultures.** (4) Lecture, three hours. How are ways of seeing constructed through culture, gender, religion, class, and nation? Theories and case studies from around world permit understanding of social processes through which gaze is determined and image economies negotiated. Topics include scopogenic regimes, aesthetics of streamlined design, and visuality and liberation. Concurrently scheduled with course C252. P/NP or letter grading.

**C158. Theorizing Arts Activism.** (4) Seminar, three hours. Historicizing and theorizing of arts activism to provide context for concerted analysis, creation, and protest. Readings include theoretical texts and current performance histories. Consideration of one particular activist project, with focus on ongoing activism sponsored by UCLA Art and Global Health Center. Arts activist projects organized by seminar members supported and encouraged. Concurrently scheduled with course C258. P/NP or letter grading.

**C159. Art and Global Health.** (4) Seminar, three hours. Exploration of interface of arts- and health-based methodologies in pursuit of improved health outcomes, using examples from international projects created and supported by UCLA Art and Global Health Center. Readings include texts by artists and arts scholars and articles from public health and medical literature. Seminar members propose their own arts-based health promotion interventions. Concurrently scheduled with course C259. P/NP or letter grading.

**160. Performing Sexual Health: UCLA Sex Squad.** (4) Seminar, three hours. Exploration of activist sexual health education theater as it has been used both locally and globally. Examination specifically of how humor, personal narrative, and nonjudgmental pro-sex approaches have been utilized to open empowering and educational dialogues about sexual health by and for diverse range of communities. Intensive training on sex, sexuality, HIV/AIDS, and powerful history of artists' interventions to open urgent dialogues on these taboo topics. May be repeated for maximum of 12 units. P/NP or letter grading.

**CM168. Beyond Academia: Making Art in Real World.** (4) (Same as Dance CM168.) Lecture, four hours; outside study, eight hours. Designed for juniors/seniors. Focus on understanding bureaucratic structures and regional histories conditioning creation of art in real world, including such practical issues as publicity and grant-writing. Concurrently scheduled with course CM268. P/NP or letter grading.

**C173. Sound Resources for Performance.** (4) Lecture, three hours; studio, one hour; outside study, eight hours. Designed for juniors/seniors. Exploration of music, in search of interesting, new, and unusual. Investigation of musical possibilities via record store, Internet, and music library; environmental sounds and patterns; body (clapping, stepping, and singing); and hardware store (found sound). Participants collaborate with fellow students in creative efforts and in presentations of research results. Concurrently scheduled with course C273. P/NP or letter grading.

**174A. Projects in World Arts and Cultures.** (2) Laboratory, four hours. Individualized major projects in choreography, performance, cultural studies, production, and media. May be repeated for credit. P/NP or letter grading.

**174B. Projects in World Arts and Cultures.** (4) Laboratory, six hours. Individualized major projects in choreography, performance, cultural studies, production, and media. May be repeated for credit. P/NP or letter grading.



**177XP. Taking Action: Arts Practice and Community Service.** (4) (Formerly numbered 177SL.) Seminar, four hours; outside study, eight hours. Enforced requisite: course 103. Designed for juniors/seniors. Application of training in world arts and cultures through service projects designed by students in collaboration with selected community organizations and institutions. Reflection on impact of service on communities and theories. May be repeated once for credit. P/NP or letter grading.

**178. Advanced Private Instruction in World Arts and Cultures.** (2 to 8) Studio, three to 12 hours. Designed for juniors/seniors. Private or semiprivate instruction in one world arts practice with distinguished community-based artist to be arranged by students and approved by instructor. May be repeated for maximum of 24 units. P/NP grading.

**M179. Food Activism in Los Angeles: Narrating Pasts, Imagining Futures.** (4) (Same as Food Studies M179.) Lecture, two hours; discussion, two hours. Introduction to history and praxis of local interventions into food insecurity and food oppression, such as community gardens, pop-up markets, and care farms. Through ethnographic and oral history methodologies, students learn how food activists organize themselves, and mobilize creativity to counteract injustice. Focus on relationships between food access, food oppression, food politics, and food ethics; and social histories of race, class, urban planning, and housing discrimination. P/NP or letter grading.

**C180. Variable Topics in Video Production/Practice.** (4) Lecture, two hours; laboratory, two hours. Enforced requisite: course 80. Training in low-budget and independent video and documentary practice as research tool. Visual ethnography combined with experimental film. Introduction to history, ethics, and aesthetics of documenting subjects such as culture, performance, and dance among range of forms for bodily expression and experience. Film and documentary theory, ethnography, and phenomenology used to create innovative and critical forms of visual documentation. Skills include cinematography, sound recording, interviews, and digital editing. May be repeated once for credit. Concurrently scheduled with course C280. Letter grading.

**181. Ethnographic Film.** (4) Lecture, four hours. Survey of ethnographic film and video, with focus on studies of expressive culture. Emphasis on critical and comparative approaches to visual study of culture, community, and arts. P/NP or letter grading.

**C182. Film and Feminism.** (5) Lecture, three hours. Enforced requisite: course 104. Designed for juniors/seniors. Introduction to feminist film theory to develop skills for feminist interpretations and analysis of films from classical and postclassical Hollywood cinema, experimental film, and Indian cinema. Examination of psychoanalytical feminist, postfeminist film, and post-colonial theories. Concurrently scheduled with course C282. P/NP or letter grading.

**C184. Documentary: Theories and Approaches.** (5) Lecture, three hours. Designed for juniors/seniors. Documentary practices—early actualities, city symphonies, observational cinema, avant garde, and self-reflexive films—to introduce complexity and creativity at heart of this form. Key theories and approaches of documentary film. Analysis of how performativity, subjectivity, and ideology percolate documentary aesthetics and inform cinematographic, audiographic, and editorial decisions. Concurrently scheduled with course C284. P/NP or letter grading.

**185. Junior-Year Proposal.** (1) Lecture, 90 minutes; outside study, 90 minutes. Limited to World Arts and Cultures majors. Planning and execution of proposal (either senior focus or senior honors project) for senior-year study, with attention to exploring resources of department and University as whole. May be repeated once for credit. P/NP grading.

**186A-186B. Senior Honors Projects in World Arts and Cultures.** (5-5) Lecture, four hours; outside study, 11 hours. Course 186A is requisite to 186B. Limited to senior World Arts and Cultures majors. Application of concepts and content from interdisciplinary major to individual projects. Methodologies may include critical, comparative, ethnographic, and performance approaches. Lecture/seminar format with World Arts and

Cultures faculty during first term; faculty-directed presentations of individual projects during second term. Letter grading.

**M187. Indigenous Film.** (5) (Same as American Indian Studies M186.) Lecture, four hours; discussion, one hour. Introduction to study of indigenous filmic images and representations, with focus on selected ethnographic, documentary, animated, and feature films ranging from 1920 to present. P/NP or letter grading.

**188SA. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to discuss selected USIE seminar topic, conduct preparatory research, and begin preparation of syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SB. Individual Studies for USIE Facilitators.** (1) Tutorial, to be arranged. Enforced requisite: course 188SA. Enforced corequisite: Honors Collegium 101E. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor to finalize course syllabus. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**188SC. Individual Studies for USIE Facilitators.** (2) Tutorial, to be arranged. Enforced requisite: course 188SB. Limited to junior/senior USIE facilitators. Individual study in regularly scheduled meetings with faculty mentor while facilitating USIE 88S course. Individual contract with faculty mentor required. May not be repeated. Letter grading.

**189. Advanced Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**195. Community or Corporate Internships in World Arts and Cultures.** (2 to 4) Tutorial, six hours. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for maximum of 8 units. Individual contract with supervising faculty member required. P/NP or letter grading.

**199. Directed Research in World Arts and Cultures.** (2 to 5) Tutorial, two hours. Preparation: 3.0 grade-point average in major. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for maximum of 10 units. Individual contract required. P/NP or letter grading.

## Graduate Courses

**200. Theories of Culture.** (4) Seminar, three hours; outside study, nine hours. Introduction to history of culture concept in arts, humanities, and social sciences. Analysis of contemporary debates concerning ownership and use of word culture, and critical elucidation of study of culture. S/U or letter grading.

**201. Theories of Performance.** (4) Seminar, three hours; outside study, nine hours. Close reading and analysis of classic and contemporary studies of performance and related aesthetic practices. Familiarization with ways in which performance is defined and deployed by scholars working in disciplines of anthropology, dance, folklore, linguistics, literature, musicology, performance studies, philosophy, sociology, and theater. S/U or letter grading.

**202. Research Methodologies.** (4) Seminar, three hours; outside study, nine hours. Hands-on course designed to help students develop understanding of many developed qualitative research methods and designs they encounter in their work. Identification and creation of research problems, development of designs, actual data collection, and analysis procedures to address those problems. S/U or letter grading.

**203. Proseminar: Dance Studies.** (4) Seminar, three hours; outside study, nine hours. Survey of theoretical issues and problems in study of dance and body movement in cultural, social, and historical context. S/U or letter grading.

**204. Theories of Corporeality.** (4) Seminar, three hours; outside study, nine hours. Cross-cultural and interdisciplinary perspectives on human body. Topics include representations of body, body symbolism, embodiment of identity (including gender, race, ethnicity, and class identities), and analysis of dance and other somatic modes of performance. S/U or letter grading.

**207. Ethnography of Performance.** (4) Seminar, three hours; outside study, nine hours. Survey of methods and methodological issues in ethnographic study of performance in cultural context. Field documentation, participant observation, oral history and interview techniques, performative dimensions of ethnographic research, ethics, and politics of ethnographic representation. S/U or letter grading.

**210. Ethnography of and as Colonialism.** (4) Seminar, three hours. Beginning with 1550 debates over Indian humanity and ranging to contemporary scholarship about and by indigenous peoples, focus on intersections of writing, colonialism, violence, and historiography in Americas. Exploration of relationship between 16th-century reasoning about race and postmillennial, Western, and academic practices of writing history. Development of critical stance on utility of postcolonial theories as such perspectives bear on anthropological and historical studies of indigenous religiosity. Regions include southwest Columbia, Orinoco Delta in Venezuela, Valley of Mexico, and several examples throughout U.S. southwest, plains, and northeast. S/U or letter grading.

**CM213B. Legislative Theater for Race and Gender Justice.** (5) (Same as African American Studies CM213B.) Lecture, three hours; discussion, one hour (when scheduled). Exploration and application of range of interactive methods and arts-based strategies with participants from UCLA and broader Los Angeles community in order to research and influence public policy and legislative change. Students and campus partners create and perform legislative theater addressing issues of race, gender, and criminal justice system. Critical texts, collaborative work, and creative methods are used to engage perspectives on justice. Analysis of diverse and growing body of work on systems of justice through research, writing, workshops, performances, and critiques of own original writings and performances developed in response to visiting scholars and community partners. Concurrently scheduled with course CM113B. S/U or letter grading.

**216. Analyzing Narrative and Oral Performance.** (5) Lecture, four hours. Designed for graduate students. Exploration of ways of documenting individual narrators and interpreting their styles and repertoires; how narrators conceptualize and perform narrative discourse, impact of audience and situated event on both narrating and story, how experiences and values are communicated through narrating, modes of representing oral narrating, and politics of narrative and oral performance. S/U or letter grading.

**220. Seminar: Culture and Performance.** (4) Seminar, three hours; outside study, nine hours. Designed for graduate students. Variable topics in interdisciplinary study of expressive culture, arts, and performance in social and historical context. May be repeated for credit with topic change. S/U or letter grading.

**C229. Food Customs and Symbolism.** (4) Lecture, three hours. Designed for graduate students. Introduction to foodways, with particular attention to customs and symbolism in America. Topics include sensory realm, child rearing practices, foodsharing, food and identity, food and its emotional significance, aversions and taboos, advertising, changing food habits, and American diet. Concurrently scheduled with course C129. S/U or letter grading.

**CM230. Space and Place.** (4) (Same as Architecture and Urban Design CM230.) Lecture, three hours. Survey of array of spaces and places from cross-cultural or comparative perspective and with performance emphasis, with focus on mutual interaction of

human beings and their created environments. Emphasis on common, ordinary, anonymous, or vernacular nonbuilt and built environments, which are built and used by members of small-scale, traditional, and transitional communities around world. Concurrently scheduled with course CM130. S/U or letter grading.

**C238. American Indian Arts in Performance. (4)** Seminar, four hours. Acquisition of awareness and sensitivity to dynamic contexts within Native American worlds of performance and material culture and development of ability to focus on them and learn to conduct research on them. Examination of wide range of American Indian art and craft traditions within fullest possible range of such contexts, with performance given its most generous definition. Study of spectrum of genres, including architecture, social and dance regalia, masks, and utilitarian material culture, to investigate how such items play their part and come alive through movement, sound, spoken word, silence, and even dreams and visions. Concurrently scheduled with course C138. S/U or letter grading.

**C239. Afro-Caribbean Ritual Arts. (4)** Lecture, three hours. Designed for graduate students. Introduction to diaspora African religions, with particular attention to Caribbean culture. Lectures, readings, and video material focus on performance of ritual and its expression in religious art. Concurrently scheduled with course C139. S/U or letter grading.

**CM240XP. Healing, Ritual, and Transformation. (4)** (Formerly numbered CM240.) (Same as Gender Studies CM243XP.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Examination of how various cultures think of health and wellness, not only individually but collectively. Exploration of structural inequalities within health care and medical sciences. Students are required to contribute weekly to service learning component, working with individuals and organizations in fields of health and wellness including healers, non-profits, and organizations working for social justice. May be concurrently scheduled with CM140XP. Letter grading.

**C242. Myth and Ritual. (4)** Lecture, four hours; outside study, eight hours. Designed for graduate students. Myths make sense of world and its peoples, purposes, and places. Rituals embody and activate myths through dramatic transformative devices. Concurrently scheduled with course C142. S/U or letter grading.

**C245. Curating Cultures. (4)** Lecture, three hours. Exploration of poetics and politics of exhibiting non-Western arts and cultures. Series of provocative case studies with special guest speakers addressing themes in curatorial theory and practice. Concurrently scheduled with course C145. S/U or letter grading.

**C246. Politics of Performance. (4)** Seminar, four hours; outside study, eight hours. Designed for graduate students. Opportunity to reflect on artists and intellectuals as cultural workers operating in domains of ideology, aesthetics, and theory. Analysis of such keywords as ideology, aesthetics, theory, art, politics, intervention, intellectuals, and artists. Concurrently scheduled with course C146. S/U or letter grading.

**C250. Critical Ethnographies. (5)** Lecture, three hours. Enforced requisite: course 20 or 33. Survey of major tropes and rhetorical strategies to explicitly locate ethnographic method as key component of cross-cultural understanding. Examination of categorical notions of insider and outsider while also developing various perspectives on performed acts of identity formation. Concurrently scheduled with course C150. S/U or letter grading.

**C251. Ethnography of Religions. (4)** Lecture, three hours. Religions are cultural systems helping people to cope with misfortune, deal with death, and find fulfillment in life. Case studies reveal commonalities across cultures as cosmologies define moral being in world, divination determines causes of difficulty, spirit mediumship embodies divine intervention, and sacred arts render deities tangible. Nonjudgmental comparative investigation stressing conversation. Concurrently scheduled with course C151. S/U or letter grading.

**C252. Visual Cultures. (4)** Lecture, three hours. How are ways of seeing constructed through culture, gender, religion, class, and nation? Theories and case studies from around world permit understanding of social processes through which gaze is determined and image economies negotiated. Topics include scopopic regimes, aesthetics of streamlined design, and visibility and liberation. Concurrently scheduled with course C152. S/U or letter grading.

**C258. Theorizing Arts Activism. (4)** Seminar, three hours. Historicizing and theorizing of arts activism to provide context for concerted analysis, creation, and protest. Readings include theoretical texts and current performance histories. Consideration of one particular activist project, with focus on ongoing activism sponsored by UCLA Art and Global Health Center. Arts activist projects organized by seminar members supported and encouraged. Concurrently scheduled with course C158. S/U or letter grading.

**C259. Art and Global Health. (4)** Seminar, three hours. Exploration of interface of arts- and health-based methodologies in pursuit of improved health outcomes, using examples from international projects created and supported by UCLA Art and Global Health Center. Readings include texts by artists and arts scholars and articles from public health and medical literature. Seminar members propose their own arts-based health promotion interventions. Concurrently scheduled with course C159. S/U or letter grading.

**CM268. Beyond Academia: Making Art in Real World. (4)** (Same as Dance CM268.) Lecture, four hours; outside study, eight hours. Designed for graduate students. Focus on understanding bureaucratic structures and regional histories conditioning creation of art in real world, including such practical issues as publicity and grant-writing. Concurrently scheduled with course CM168. S/U or letter grading.

**C273. Sound Resources for Performance. (4)** Lecture, three hours; studio, one hour; outside study, eight hours. Designed for graduate students. Exploration of music, in search of interesting, new, and unusual. Investigation of musical possibilities via record store, Internet, and music library; environmental sounds and patterns; body (clapping, stepping, and singing); and hardware store (found sound). Participants collaborate with fellow students in creative efforts and in presentations of research results. Concurrently scheduled with course C173. S/U or letter grading.

**C280. Variable Topics in Video Production/Practice. (4)** Lecture, two hours; laboratory, two hours. Enforced requisite: course 80. Training in low-budget and independent video and documentary practice as research tool. Visual ethnography combined with experimental film. Introduction to history, ethics, and aesthetics of documenting subjects such as culture, performance, and dance among range of forms for bodily expression and experience. Film and documentary theory, ethnography, and phenomenology used to create innovative and critical forms of visual documentation. Skills include cinematography, sound recording, interviews, and digital editing. May be repeated once for credit. Concurrently scheduled with course C180. Letter grading.

**C282. Film and Feminism. (5)** Lecture, three hours. Enforced requisite: course 104. Designed for graduate students. Introduction to feminist film theory to develop skills for feminist interpretations and analysis of films from classical and postclassical Hollywood cinema, experimental film, and Indian cinema. Examination of psychoanalytical feminist, postfeminist film, and postcolonial theories. Concurrently scheduled with course C182. S/U or letter grading.

**C284. Documentary: Theories and Approaches. (5)** Lecture, three hours. Designed for graduate students. Documentary practices—early actualities, city symphonies, observational cinema, avant garde, and self-reflexive films—to introduce complexity and creativity at heart of this form. Key theories and approaches of documentary film. Analysis of how performativity, subjectivity, and ideology percolate documentary aesthetics and inform cinematographic, audiographic, and editorial decisions. Concurrently scheduled with course C184. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member responsible for curriculum and instruction at UCLA. May be repeated for credit. S/U grading.

**400. Directed Professional Activities. (2 to 8)** Lecture, to be arranged. Directed projects in professional editing, bibliography, filmography, videography, conference and festival direction, and other professional activities. May not be applied toward MA degree requirements. May be repeated. S/U grading.

**451. Teaching Assistant Seminar. (2)** Seminar, one hour; laboratory, three hours. Required of all World Arts and Cultures Department teaching assistants. Lectures, discussion, readings, and practice teaching. May be repeated once for credit. S/U grading.

**478. Advanced Private Instruction in World Arts and Cultures. (2 to 8)** Studio, three to 12 hours; outside study, three to 12 hours. Private or semiprivate instruction with distinguished community-based artist to be arranged by students and approved by instructor. May be repeated for maximum of 24 units. S/U grading.

**480. Seminar: Research Topics. (2 to 4)** Seminar, three hours; outside study, three to nine hours. Forum in which faculty, students, and visitors make presentations and obtain feedback on research being planned, conducted, or recently completed. Students required to make minimum of one presentation each term they are enrolled for credit. May be repeated for maximum of 8 units. S/U grading.

**495. Teaching Assistant Seminar. (2)** Seminar, one hour; laboratory, three hours. Required of all World Arts and Cultures Department teaching assistants. Lectures, discussion, readings, and practice teaching. May be repeated once for credit. S/U grading.

**496. Teacher Preparation in World Arts and Cultures. (2)** Seminar, two hours. Directed work in preparation of course syllabi and discussion of topics relevant to developing teaching skills. Fundamental principles and methods with which to design course syllabi and gather resources for courses. Topics include development of teaching philosophy, evaluating/selecting course content, teaching methodologies, assessment/evaluation/grading practices, and consideration of practical, administrative, and ethical issues. Students meet with instructor to review their specific needs as they progress in development and elaboration of course plans. Microteaching sessions provide context for applying concepts and principles discussed. S/U grading.

**596A. Directed Individual Study or Research. (2 to 8)** Tutorial, to be arranged. S/U or letter grading.

**596R. Directed Study or Research in Hospital or Clinic. (2 to 8)** Tutorial, to be arranged. S/U grading.

**597. Preparation for Master's Comprehensive Examination or PhD Qualifying Examination. (2 to 8)** Tutorial, to be arranged. Preparation for MA or MFA comprehensive examination or PhD qualifying examination. S/U grading.

**598. Research for and Preparation of Master's Thesis. (2 to 8)** Tutorial, to be arranged. Research for and preparation of MA or MFA thesis. S/U grading.

**599. Research for and Preparation of PhD Dissertation. (2 to 12)** Tutorial, to be arranged. Preparation of research data and writing of PhD dissertation. May be repeated for credit. S/U grading.

# WRITING PROGRAMS

College of Letters and Science

146 Kaplan Hall  
Box 951384  
Los Angeles, CA 90095-1384

**Writing Programs**  
310-206-1145

Christine Holten, MA, *Director*  
Jeremy C. Kelley, PhD, *Associate Director*

## Faculty Roster

### Senior Lecturer

Esha Niyogi De, PhD

### Lecturers

Teddi L. Chichester, PhD  
Tamar S. Christensen, MA  
Shane Crosby, PhD  
Margaret E. Davis, MA  
Nathan A. Deuel, MFA  
Dominiqua Dickey, MFA  
Randall J. Fallows, PhD  
Mary E. Galvin, PhD  
Jeroen Gevers, PhD, CPhil  
Carlos Rafael Gomez, MFA  
Janet M. Goodwin, MA  
Laura A. Hartenberger, MA  
Thomas A. Hitchner, PhD  
Christine Holten, MA  
Laila D. Hualpa, PhD  
Colleen M. Jaurretteche, PhD  
Darien B. Johnson, MFA  
Logan M. Juliano, PhD  
Jeremy C. Kelley, PhD  
Rachel L. Ketai  
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Maja Manojlovic, PhD  
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Lauri M. Mattenson, MA  
Mia L.G. McIver, PhD  
Nedda Mehdizadeh, PhD  
Michele L. Moe, PhD  
Gabriel B. Page, PhD  
Jada Patchigondla, MA  
Shelby A. Popham, PhD  
Tara L. Prescott-Johnson, PhD  
Susannah Rodriguez Drissi, PhD  
Gregory J. Rubinson, PhD  
Mary G. Samuelson, PhD  
Leslie A. Sherwood, MS  
Bruce D. Stone, MFA  
Daniel B. Sussman JD, PhD  
Raffi J. Wartanian, MFA  
Dana Cairns Watson, PhD  
Amber I. West, PhD  
Laurel A. Westrup, PhD

## Overview

Writing Programs is committed to inclusive pedagogy and student success, serving undergraduates through a curriculum in composition and English as a second language (ESL), as well as through the [Undergraduate Writing](#)

**Center** (UWC). Writing Programs serves as the chief resource for writing and English language instruction through entry-level writing, first-year composition, writing-in-the-disciplines, and professional writing courses. Its courses play a vital role in preparing undergraduates from diverse linguistic and academic-skill backgrounds to succeed as writers/communicators in their UCLA studies as well as in future professional contexts. Writing Programs' courses facilitate discovery, understanding, analysis, inspiration, community building, and global citizenship.

In addition, Writing Programs serves international graduate students as writers and communicators through graduate-level academic writing courses that satisfy the UCLA ESL requirement, elective writing workshop courses, and oral communication courses for international students who plan to serve as TAs and need to satisfy the Test of Oral Proficiency (TOP) requirement.

During the summer, matriculated UCLA students can complete some of their undergraduate writing requirements. Writing Programs also offers international summer visitors a suite of second language writing and communication courses.

Writing Programs works closely with the Office of Equity, Diversity, and Inclusion to help all students experience academic belonging, and bring together members of the UCLA and Los Angeles communities through service learning courses, summer bridge programs for high school students, the UCLA prison education program, and public events. Writing Programs educational initiatives promote the impact of writing, writ large, around issues of self expression, public discourse, diversity, and experiential learning.

## Undergraduate Study

The undergraduate curriculum develops writing skills in linguistic, visual, and digital forms, and encourages students to see the classroom as a place to be challenged by new ideas, to investigate, problem-solve, reflect, imagine, think and rethink, and ultimately, to learn. Writing Program's undergraduate teaching mission is extended by the UWC, which aids thousands of students annually from all disciplines and all divisions at UCLA to communicate effectively in their coursework.

### Entry-Level Writing

Every student who does not satisfy the Entry-Level Writing requirement by presenting transfer credit or acceptable test scores is required to take, as early as possible during the first year in residence, English Composition 1, 1A, 1B, 2, or 2I as determined by performance on the Analytical Writing Placement Examination (AWPE). Students who have not otherwise satisfied the Entry-Level Writing requirement and who have not taken the AWPE before entering UCLA must take it in their first term. For more information, see [Entry-Level Writing](#) in Undergraduate Study.

## English as a Second Language Requirement

All entering undergraduate students whose native language is not English and who have not otherwise satisfied the English as a Second Language (ESL) requirement may be required to take one or more English composition courses designed for multilingual students (1A, 1B, 2I). First-year undergraduate students are placed in the courses based on the AWPE. Transfer students are placed in the courses based on the UCLA English as a Second Language Placement Examination (ESLPE). Transfer students who are required to take the ESLPE include those who have not yet satisfied the Intersegmental General Education Transfer Curriculum (IGETC), and those held at the discretion of Undergraduate Admission. The ESLPE may be taken once only.

## Graduate Study

A curriculum in writing pedagogy for graduate students is also offered. Graduate writing instructors from across campus benefit from intensive writing pedagogy training as preparation for teaching freshman composition (satisfies Writing I requirement) and writing in the disciplines (satisfies Writing II requirement). Writing Programs also provides writing pedagogy training for teaching assistants (TAs) in the Samueli School of Engineering, and the general education freshman cluster program, and the Freshman Summer Program and Transfer Summer Program in partnership with the Academic Advancement Program. Teaching assistants interested in expanding their professional teaching profile as writing specialists can pursue a graduate certificate in Writing Pedagogy, and participate in the certificate annual teaching symposium.

## English as a Second Language Requirement

All entering graduate students whose native language is not English and who have not otherwise satisfied the English as a Second Language (ESL) requirement may be required to take one or more ESL courses. Students are placed in the courses based on the UCLA English as a Second Language Placement Examination (ESLPE) and may be held for up to two ESL courses (300, 301).

The following students are exempt from the ESL requirement: students who hold a bachelor's or higher degree from a university located in the U.S. or in another country (e.g., Australia, Barbados, Canada, Ireland, Jamaica, New Zealand, United Kingdom) in which English is both the primary spoken language of daily life and the medium of instruction, or who have completed at least two years of full-time study at such an institution; and students with a score of 100 or better on the Test of English as a Foreign Language Internet-Based Test (TOEFL iBT), or at least a 7.5 overall band score on the International English Language Testing System (IELTS) examination. See [International Applicants](#) in Graduate Study.

## Graduate Certificate

Writing Programs offers a graduate certificate in Writing Pedagogy.

## English as a Second Language

### Lower-Division Courses

**19. Fiat Lux Freshman Seminars. (1)** Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**20. Conversation and Fluency. (4)** Lecture, four hours. Emphasis on speaking fluently in English by examining rules of conversation, participating actively in class discussions, making group presentations, and completing out-of-class assignments designed to promote interaction with native speakers and familiarize international students with UCLA campus and local community. Offered in summer only. P/NP or letter grading.

**21. Pronunciation. (4)** Lecture, four hours. Designed to improve clarity, accuracy, and understanding of spoken English through study and practice of pronunciation features as they occur in real speech, using models from television, movies, and online talks. Emphasis on individualized feedback through audiorecording and videorecording technology. Offered in summer only. P/NP or letter grading.

**22. Public Speaking. (4)** Lecture, four hours. Emphasis on making presentations, interacting with audience members, and leading group discussions. Videorecording of student performances to allow students to improve through self and peer evaluation, as well as through individualized instructor feedback. Offered in summer only. P/NP or letter grading.

**23. American Culture through Film. (4)** Lecture, four hours. Designed to improve listening comprehension and discussion skills by viewing and analyzing variety of American films. Emphasis on understanding and using idiomatic language, expanding vocabulary, recognizing dialect differences, and reflecting on cultural similarities and differences. Offered in summer only. P/NP or letter grading.

**24. Preparation for American Universities. (4)** Lecture, four hours. Designed for international students planning to study at American universities. Students research suitable undergraduate or graduate programs, interview advisers at local universities, and learn to write effective personal statements. Additional focus on academic reading, vocabulary, and speaking skills. Offered in summer only. P/NP or letter grading.

**25. Academic Reading and Writing. (4)** Lecture, four hours. Designed to improve reading speed, comprehension, and knowledge of academic writing conventions. Emphasis on synthesizing information from sources, providing proper citations, and avoiding plagiarism. Focus on development of ability to revise and edit one's own writing. Offered in summer only. P/NP or letter grading.

**26. Business Communication: Speaking. (4)** Lecture, four hours. Emphasis on giving business and marketing-focused presentations (both individual and group), handling audience questions, and running effective meetings. Videorecording of student performances to allow students to improve through self-evaluation, as well as through individualized instructor feedback. Offered in summer only. P/NP or letter grading.

**27. Business Communication: Writing. (4)** Lecture, four hours. Emphasis on writing persuasive texts for diverse business audiences. Topics include writing effective summaries and reports, researching companies, and developing professional online profile. Offered in summer only. P/NP or letter grading.

**28. English through Language, Culture, and Society. (4)** Lecture, four hours. Survey of selective language structures through their occurrence within contemporary cultural and societal topics within thematic, con-

tent-based English language learning environment. Focus on understanding and applying these structures to improve fluency while enhancing critical thinking skills. Meaningful discussions in conjunction with salient written/spoken assignments that situate language within authentic contexts. Topics may include gender, sexuality, politics, humor, intercultural communication, media, environmental issues, and local/regional identities. P/NP or letter grading.

**89. Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**97A. Variable Topics in English as a Second Language. (4)** Lecture, four hours. Specialized topics in English as second language or English for academic purposes. Emphasis varies according to topics covered and/or audience to whom course is directed. May be repeated for credit with topic change. Offered in summer only. P/NP (undergraduates), S/U (graduates), or letter grading.

**97B. Variable Topics in English as a Second Language. (2)** Lecture, two hours. Enforced requisite: course 33B or proficiency demonstrated on English as a Second Language Placement Examination. Specialized topics in English as second language or English for academic purposes. Emphasis varies according to topics covered and/or audience to whom course is directed. May be repeated for credit with topic change. P/NP (undergraduates), S/U (graduates), or letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP grading.

### Upper-Division Courses

**103. Pronunciation for Multilingual Students. (4)** Lecture, four hours. Emphasis on accurate articulation of sounds, word stress, rhythm, linking between syllables, intonation, and other features of fluent spoken English, using variety of videorecorded models and online pronunciation resources. Individualized feedback provided through frequent recording assignments. P/NP or letter grading.

**104. Public Speaking for Multilingual Students. (4)** Lecture, four hours. Emphasis on making presentations in academic and professional settings, interacting with audience members, leading group discussions, and preparing for job interviews. Videorecording of student performances to allow students to improve through self and peer evaluation, as well as through individualized instructor feedback. P/NP or letter grading.

**105. Advanced Grammar and Style for Multilingual Students. (4)** Lecture, four hours. Review of form and use of common grammatical structures found in academic discourse. Analysis of stylistic function of certain structures and practice in self-editing strategies. P/NP or letter grading.

**106. Workshop in Disciplinary Writing for Multilingual Students. (4)** Lecture, four hours. Requisite: satisfaction of English as a Second Language requirement. Writing of texts that are rhetorically appropriate for discipline-specific audiences. Extensive revising of papers to allow writers to edit their texts for grammat-

ical appropriateness and for clear and coherent style. Focus on language and writing issues of concern to multilingual writers. P/NP or letter grading.

**107. Academic Reading and Vocabulary for Multilingual Students. (4)** Lecture, four hours. Instruction in and practice of academic reading skills using authentic university texts. Focus on improving reading rate and comprehension, expanding academic vocabulary, and developing critical reading skills. P/NP or letter grading.

**109. Literature and Language for Multilingual Students. (4)** Lecture, four hours. Requisite: satisfaction of English as a Second Language requirement. Introduction to effective approaches to appreciating and analyzing variety of literature written in English. Review of literary techniques and terms to deepen understanding of poetry, short stories, and novels. Focus on author styles and grammatical and vocabulary choices. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**197. Individual Studies in English as a Second Language. (4)** Tutorial, four hours. Limited to juniors/seniors. Individual intensive study for undergraduate and graduate students who desire more advanced or specialized treatment of issues in English as second language beyond those covered in current course offerings. Scheduled meetings to be arranged between faculty member and student. Assigned reading and tangible evidence of mastery of subject matter required. May be repeated for credit. Individual contract required; see academic coordinator. P/NP (undergraduates), S/U (graduates), or letter grading.

### Graduate Courses

**300. Intermediate Writing and Communication for International Graduate Students. (4)** Lecture, five hours. Enforced requisite: proficiency demonstrated on English as a Second Language Placement Examination. Development of academic reading, writing, and language skills with focus on reading comprehension, vocabulary development, and analysis of discipline-specific research articles, with additional work on fundamental composition techniques, grammar, and editing. S/U or letter grading.

**301. High-Intermediate Writing and Communication for International Graduate Students. (4)** Lecture, five hours. Enforced requisite: course 300 or proficiency demonstrated on English as a Second Language Placement Examination. Development of academic writing skills with focus on reading comprehension, vocabulary development, and composition techniques, with additional work on grammar and editing. S/U or letter grading.

**302. Advanced Writing Workshop for International Graduate Students. (4)** Lecture, five hours. Requisite: course 301 or proficiency demonstrated on English as a Second Language Placement Examination. Writing and revision of papers for academic work or publication in student fields of study. Emphasis on rhetorical strategies as well as stylistic and organizational conventions for presenting research-based arguments in disciplines including humanities, social sciences, and pure and applied sciences. Focus on grammar structures and vocabulary that contribute to clear and coherent writing style. S/U or letter grading.



**310. Pronunciation for International Teaching Assistants.** (4) Lecture, five hours. Satisfies Test of Oral Proficiency (TOP) requirement for international graduate students who have received marginal pass on TOP. Focus on accurate articulation of sounds, word stress, linking, and other features of fluent spoken English, using authentic models of classroom language. Additional emphasis on comprehending typical undergraduate speech. Frequent audiorecordings and videorecordings provide opportunity for self-review and individualized instructor feedback. S/U grading.

**311. Classroom Communication for International Teaching Assistants I.** (4) Lecture, five hours. Satisfies Test of Oral Proficiency (TOP) requirement for international graduate students who received marginal pass on TOP. Focus on stress, rhythm, and intonation of fluent spoken English using videos and transcripts of actual teaching assistants. Communication patterns include introducing syllabus, explaining visuals, handling questions, and interacting in office hours. Microteaching performances videorecorded for self, peer, and instructor evaluation. S/U grading.

**312. Classroom Communication for International Teaching Assistants II.** (4) Lecture, five hours. Satisfies Test of Oral Proficiency (TOP) requirement for international graduate students who received marginal pass on TOP. Course 311 is not requisite to 312. Focus on stress, rhythm, and intonation of fluent spoken English using videos and transcripts of actual teaching assistants. Communication patterns include building rapport, giving instructions, handling questions, encouraging participation, and organizing lessons. Microteaching performances videorecorded for self, peer, and instructor evaluation. S/U grading.

**313. Presentation and Discussion-Leading Skills for International Teaching Assistants.** (4) Lecture, five hours. Satisfies Test of Oral Proficiency (TOP) requirement for international graduate students who received marginal pass on TOP. Focus on communicating effectively as teaching assistants through interactive teaching demonstrations and student-led discussions of topics from one's own field. Emphasis on presenting academic subject matter in well-organized, interactive, and accessible way. Student performances videorecorded for extensive self, peer, and instructor evaluation. S/U grading.

## English Composition Lower-Division Courses

**1. Introduction to University Discourse.** (4) Lecture, four hours. Requisite: proficiency demonstrated on Analytical Writing Placement Examination. Introduction to college-level critical reading and academic writing. Engagement in substantial and regular writing and revision assignments through practicing and building on reading, writing, and rhetorical skills. Emphasis on revision, developing syntactic variety and academic vocabulary, and editing for grammar and style. Completion of course with grade of C or better is requisite to course 2. Letter grading.

**1A. Intermediate Composition for Multilingual Students.** (4) Lecture, five hours. Enforced requisite: proficiency demonstrated on Analytical Writing Placement Examination (first-year students) or English as a Second Language Placement Examination (transfer students). Development of academic writing skills with focus on reading comprehension, vocabulary development, and fundamental composition techniques, with additional work on grammar and editing. Letter grading.

**1B. High-Intermediate Composition for Multilingual Students.** (4) Lecture, five hours. Requisite: proficiency demonstrated on Analytical Writing Placement Examination (first-year students) or English as a Second Language Placement Examination (transfer students) (enforced) or course 1A (C or better). Development of academic writing skills with focus on synthesizing sources, strategies of argumentation, academic reading, and vocabulary, with additional work on grammar and editing. Letter grading.

**1C. Advanced Composition for Multilingual Transfer Students.** (5) Lecture, four hours. Requisite: proficiency demonstrated on English as a Second Language Placement Examination (enforced) or course 1B (C or better). Development of academic writing skills with focus on writing process, grammatical structures key to clear and effective style, and practice with major forms of academic writing, with additional work on critical analysis of readings. Completion of course with grade of C or better satisfies English as a Second Language requirement. Letter grading.

**2. Approaches to University Writing.** (5) Lecture, four hours. Requisite: proficiency demonstrated on Analytical Writing Placement Examination (enforced) or course A (C or better). Second course in university-level discourse, with analysis and critique of university-level texts. Emphasis on revision for argumentative coherence and effective style. Completion of course with grade of C or better satisfies Entry-Level Writing requirement. Letter grading.

**2I. Approaches to University Writing for Multilingual Students.** (5) Lecture, six hours. Requisite: demonstrated proficiency on Analytical Writing Placement Examination (enforced) or course 1B (C or better). Second course in university-level discourse, with analysis and critique of university-level texts. Emphasis on strategies for developing coherent and well-argued pieces of academic writing and for achieving effective and clear style in academic prose. Completion of course with grade of C or better satisfies Entry-Level Writing and English as a Second Language requirements. Letter grading.

**3. English Composition, Rhetoric, and Language.** (5) Lecture, three hours. Enforced requisite: satisfaction of Entry-Level Writing requirement or course 2 or 2I (C or better). Not open for credit to students with credit for course 3D, 3DS, 3E, or 3SL. Rhetorical techniques and skillful argument. Analysis of varieties of academic prose and writing of minimum of 20 pages of revised text. Completion of course with grade of C or better satisfies Writing I requirement. Letter grading.

**3D. English Composition, Rhetoric, and Language.** (5) Lecture, three hours. Enforced requisite: satisfaction of Entry-Level Writing requirement or course 2 or 2I (C or better). Not open for credit to students with credit for course 3, 3DS, 3E, or 3SL. Rhetorical techniques and skillful argument, with focus on diversity and inclusiveness. Analysis of varieties of academic texts and writing of minimum of 20 pages of revised prose. Completion of course with grade of C or better satisfies Writing I requirement. Letter grading.

**3DX. English Composition, Rhetoric, and Language (Service Learning).** (5) (Formerly numbered 3DS.) Lecture, three hours; fieldwork, two hours. Enforced requisite: satisfaction of Entry-Level Writing requirement or course 2 or 2I (C or better). Investigation of difference and diversity through writing and rhetoric. Critical examination of structures and institutions that promote asymmetrical power relations as well as responses of diverse groups to these inequalities. Original argumentation that engages with difference and responds to complexities of diverse societies. Service learning adds to understanding of diversity by offering firsthand interactions with diverse communities students are learning about. Completion of 20 hours of on-site service learning and development of critical thinking skills about diversity through classroom discussion focused on readings and service-learning experiences, as well as through reflective and analytical writing and research. Completion of course with grade of C or better satisfies Writing I requirement. Letter grading.

**3E. English Composition, Rhetoric, and Language for Engineers.** (5) Lecture, three hours. Enforced requisite: satisfaction of Entry-Level Writing requirement or course 2 or 2I (C or better). Not open for credit to students with credit for course 3, 3D, 3DS, or 3SL. Rhetorical techniques and skillful expository writing. Analysis of varieties of academic prose, including technical writing, and integration of multimodal elements. Minimum of 20 pages of revised text. Completion of course with grade of C or better satisfies Writing I requirement. Letter grading.

**3SL. English Composition, Rhetoric, and Language (Service Learning).** (5) Lecture, three hours; fieldwork, two hours. Enforced requisite: satisfaction of Entry-Level Writing requirement or course 2 or 2I (C or better). Rhetorical techniques and skillful argument. Analysis of varieties of academic prose and writing of minimum of 20 pages of revised text. Service learning component includes meaningful work with off-campus agency selected by instructor. Completion of course with grade of C or better satisfies Writing I requirement. Letter grading.

**4. Writing Workshop for Multilingual Students.** (2) Tutorial, three hours. Requisite: proficiency demonstrated on Analytical Writing Placement Examination or informed self-placement administered through Writing Programs. Corequisite: course 1 or 2. Multilingual students gain linguistic and cultural awareness and skills that complement courses satisfying Entry-Level Writing requirement. May be repeated once for credit. P/NP grading.

**5W. Literature, Culture, and Critical Inquiry.** (5) Lecture, four hours. Enforced requisite: course 3. Use of analysis of literary works within cultural context to engage students in critical thinking and writing about issues important to academic inquiry and responsible citizenship. Minimum of 15 to 20 pages of revised text required in addition to regular informal writing exercises. Satisfies Writing II requirement. Letter grading.

**6W. Language, Culture, and Discourse.** (5) Lecture, four hours. Enforced requisite: course 3. Study of structure and use of English and how it reflects social structure and cultural values. Readings in linguistic analysis, language acquisition, sociolinguistics, and pragmatics provide foundation as students analyze authentic language as it is used in private and public contexts. Minimum of 15 to 20 pages of revised writing required. Satisfies Writing II requirement. Letter grading.

**19. Fiat Lux Freshman Seminars.** (1) Seminar, one hour. Discussion of and critical thinking about topics of current intellectual importance, taught by faculty members in their areas of expertise and illuminating many paths of discovery at UCLA. P/NP grading.

**50. Writing Workshop.** (2) Lecture, five hours. Designed for any students who have not yet enrolled in their first full term at UCLA. Introduction to demands of university writing and often unstated conventions that govern it. Writing techniques developed to address specific writing tasks such as timed examination, application essay, effective e-mail, and college paper. Offered in summer only. P/NP or letter grading.

**51. Writing Workshop.** (2) Lecture, two hours. Limited to students admitted to one UC campus who have not completed their first year of college coursework. Introduction to demands of university writing and often unstated conventions that govern it. Addresses not only specific writing tasks such as timed examinations, effective e-mails, and college papers, but also broad communication concerns such as classroom participation and oral presentations. P/NP grading.

**52. Writing and Critical Thinking for Pre-College Scholars.** (4) Lecture, 10 hours. Limited to students in VIP Scholars Program at UCLA. Introduction to demands of university writing, including research writing, with special focus on challenging students to think critically about world around them and their place in it within social justice framework. Offered in summer only. P/NP or letter grading.

**89. Honors Seminars.** (1) Seminar, three hours. Limited to 20 students. Designed as adjunct to lower-division lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**89HC. Honors Contracts.** (1) Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to lower-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for

maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**99. Student Research Program. (1 to 2)** Tutorial (supervised research or other scholarly work), three hours per week per unit. Entry-level research for lower-division students under guidance of faculty mentor. Students must be in good academic standing and enrolled in minimum of 12 units (excluding this course). Individual contract required; consult Undergraduate Research Center. May be repeated. P/NP or letter grading.

## Upper-Division Courses

**100W. Interdisciplinary Academic Writing. (5)** Lecture, four hours. Requisite: course 3 or 3H or English as a Second Language 36. Designed for sophomores/juniors/seniors. Course in academic writing suitable for both lower- and upper-division students that helps them develop academic papers with range of complexity and length. Focus on conventions of academic prose and genres across disciplines. Written assignments include common forms of academic writing such as argument, research paper, and/or critical essay. Satisfies Writing II requirement. Letter grading.

**100WD. Interdisciplinary Academic Writing. (5)** Lecture, four hours. Requisite: course 3, 3D, 3DS, or 3E. Course in academic writing suitable for both lower- and upper-division students that helps them develop academic papers with range of complexity and length. Focus on conventions of academic prose and genres across disciplines. Written assignments include common forms of academic writing such as argument, research paper, and/or critical essay. Investigation of difference and diversity through writing and rhetoric. Critical examination of structures and institutions that promote asymmetrical power relations, and responses of diverse groups to these inequalities. Original argumentation that engages with difference and response to complexities of diverse societies. Satisfies Writing II requirement. Letter grading.

**110. Writing Adjunct. (4)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3 or 3H. Students must be concurrently enrolled in course offered in conjunction with course 110 (consult Schedule of Classes for courses so designated). Writing assignments use materials from adjunct course and reflect and develop analytic writing skills needed in that course. May be repeated for credit with consent of instructor. P/NP or letter grading.

**120A. Language Study for Teachers: Elementary School. (4)** Lecture, four hours. Requisite: satisfaction of Entry-Level Writing and English Composition requirements. Survey of topics in English linguistics of special interest to elementary school teachers. Subjects include approaches to English grammar; language acquisition and development; language attitudes; regional and social dialects of American English; bilingual schooling; contribution of English language study to teaching of reading, writing, spelling, and literature. P/NP or letter grading.

**120B. Language Study for Teachers of English: Secondary School. (4)** Lecture, four hours. Requisite: satisfaction of Entry-Level Writing and English Composition requirements. Review of terminology of English grammar and survey of development of modern grammars. Introduction to basic concepts in bilingual and multilingual education, sociolinguistics, dialectology, and stylistics, especially as applied to analysis and evaluation of writing assigned in secondary school. P/NP or letter grading.

**123. Information Literacy and Research Skills. (1)** Lecture, one hour. Preparation: satisfaction of Writing I requirement. Designed to help students become information literate, so they know how to identify, locate, critically evaluate, and use print and electronic information effectively and ethically. Closely interwoven with Writing Programs courses that have information/research-related assignments. P/NP or letter grading.

**129A-129D. Academic Writing in Disciplines. (4 each)** Lecture, four hours. Designed for juniors/seniors. Advanced study of writing conventions in specific disciplinary areas, with focus on analysis and development of writing expertise in common discursive

forms, stylistic patterns, and research practices in given discipline. Each course may be taken independently for credit. P/NP or letter grading. **129A.** Literature; **129B.** Social Sciences. Lecture, three hours; discussion, one hour; **129C.** Physical and Life Sciences; **129D.** Fine Arts.

**130A. Professional Writing: Digital Writing and Web Literacy. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Emphasis on writing for digital environments such as websites, blogs, newsletters, and social media. Common professional settings for these skills include journalism, political campaigns, Internet marketing, and corporate communication. P/NP or letter grading.

**130B. Professional Writing: Business and Entrepreneurship. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Emphasis on developing written, oral, and visual communication skills for entrepreneurial settings. Common tasks including pitching idea, seeking funding for startup, or promoting product or service. P/NP or letter grading.

**130C. Professional Writing: Science and Technology. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Emphasis on communicating complex technical concepts and scientific research findings in clear and accessible way to non-specialist audiences. P/NP or letter grading.

**130D. Professional Writing: Nonprofits and Public Engagement. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Development of ability to write persuasively and effectively in both nonprofit and public sectors. Writing genres include mission and vision statements, grant proposals, public service announcements, and outreach campaigns. P/NP or letter grading.

**130E. Professional Writing: Arts and Entertainment. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Emphasis on the ability to write professionally about creative material and performances in areas such as film, television, theater, music, art/design, podcasts, and video games. Writing genres include critical reviews, recaps, promotional materials, treatments, and profiles. P/NP or letter grading.

**131A-131C-131D. Specialized Writing. (4-4-4)** Lecture, four hours. Requisite: satisfaction of Entry-Level Writing and English Composition requirements. Designed for juniors/seniors. Advanced writing course designed to help students develop stylistic, formal, and argumentative sophistication in various rhetorical contexts, including different sections that emphasize rhetorical values of major professions and research areas. Each course may be taken independently for credit. P/NP or letter grading. **131A.** Law and Politics; **131C.** Medicine and Public Health; **131D.** Media and Communications.

**131B. Specialized Writing: Business and Social Policy. (5)** Lecture, four hours. Requisite: satisfaction of Entry-Level Writing and English Composition requirements. Designed to help students develop stylistic, formal, and argumentative sophistication in various rhetorical contexts, including different sections that emphasize rhetorical values of major professions and research areas. May be taken independently for credit. P/NP or letter grading.

**132. Variable Topics in Rhetoric and Writing. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Intensive study of rhetoric and writing within one academic or professional context. Consult Schedule of Classes for topic focus in specific term. May be repeated for credit with topic change. P/NP or letter grading.

**132A-132B-132C. Topics in Rhetoric and Writing. (4-4-4)** Lecture, four hours; discussion, one hour. Requisite: satisfaction of Entry-Level Writing and English Composition requirements. Designed for juniors/seniors. Study of specific topics in relationship between rhetoric/writing and social or political history. Each course may be taken independently for credit. P/NP or letter grading. English majors who wish to use course

to satisfy departmental requisites must take it for letter grade. **132A.** Gender and Writing; **132B.** Autobiographical Writing; **132C.** Cultural Studies.

**133. Topics in Writing for Multimedia Environments. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Special topics in professional writing exploring current developments, issues, or debates within art, entertainment, social media, or video game industries. May be repeated for maximum of 10 units. P/NP or letter grading.

**134. Topics in Science Writing. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Special topics in professional writing exploring current issues, developments, or debates within specific field of science or technology. May be repeated for maximum of 10 units. P/NP or letter grading.

**135. Professional Writing: Writing for Audio. (5)** (Formerly numbered 130F) Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Emphasis on writing for listening audiences such as podcasts and radio, building brand awareness to reach them, and engineering clean audio. Common professional settings for these skills include audio journalism, political campaigns, Internet marketing, and corporate communication. P/NP or letter grading.

**136. Practical Writing and Editing. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Focus on developing grammatical precision and rhetorical range in professional writing, combined with experience proofreading and editing one's own writing as well as that of others. P/NP or letter grading.

**137. Writing for Public Speaking. (5)** Lecture, four hours. Requisites: satisfaction of Entry-Level Writing requirement, course 3. Emphasis on careful preparation, rehearsal, and delivery of professional presentations including design of effective visuals in variety of multimodal forms. Student performances videorecorded for extensive self, peer, and instructor feedback. P/NP or letter grading.

**M138. Topics in Creative Writing. (5)** (Same as English M138.) Seminar, three hours. Requisite: course 3 or 3D or 3DS or 3SL. Introductory workshop in genre(s) of instructor choice, that may include mixed genres, playwriting, screenwriting, literary nonfiction, or others. Enrollment in more than one section per term not permitted. May be repeated for maximum of 15 units. May not be used to satisfy workshop requirements for English creative writing concentration. P/NP or letter grading.

**M141. Current Methods of Language Teaching. (5)** (Same as Linguistics M141.) Lecture, four hours; discussion, one hour. Enforced requisite: Linguistics 20. Survey of theory and practice in teaching second languages, including (1) past and present methods used to teach second languages, (2) current theory and practice underlying skills-based instruction and integrated approaches, and (3) factors that affect second language acquisition and learning. Development of knowledge base in and rational base for design, development, implementation, and evaluation of second language instruction programs. P/NP or letter grading.

**142. Teaching Grammar and Style. (4)** Lecture, four hours. Requisite: Linguistics 20. Survey of English language structures and conventions to better understand relationships among forms/structure, meaning, and stylistic effects. Designed to develop language instructors' ability to explain structures and to articulate nuances of meaning. Exploration of grammar and style in terms of activity design and lesson building. P/NP or letter grading.

**175. Apprenticeship in Composition Tutoring. (2)** Seminar, two hours. Enforced requisite: satisfaction of Writing II requirement. Composition Peer Learning Facilitators (PLFs) who work in Undergraduate Writing Center provided with ongoing mentoring in composition and peer learning methodologies. Overview of language, writing, and literacy needs of diverse college-age writers, including developing writers, multilingual writers, and nonnative English-speaking (NNS) writers. Provides opportunity to reflect critically on

theoretical and practical frameworks for tutoring to which students have been introduced. PLFs receive guidance in their tutoring process via observations by course instructor and their peers. May be repeated for credit with consent of instructor. P/NP grading.

**180. Research Practice. (5)** (Formerly numbered M180.) Lecture, four hours. Advanced workshop designed for juniors and seniors engaged in large-scale research projects in humanities or social sciences. Students hone research, critical reading, and writing skills through class sessions, digital research notebook, and writing workshops. Students practice giving, receiving, and incorporating feedback through peer review, and develop research projects in consultation with colleagues, instructor, and faculty and libraries. Culminates with completion of literature review, academic article, or thesis chapter. P/NP or letter grading.

**M185. Professional Writing Capstone. (4)** (Same as English M185.) Seminar, four hours. Limited to junior/senior Professional Writing minors. Topical writing workshop on rhetorical strategies useful in written and multimodal genres. Intended to provide students with opportunity for serious engagement with writing project in their minor specialization under close faculty supervision and in constructive writing group. Reading, discussion, oral presentations, rhetorical analysis, and development of professional portfolio. Students develop their capstone projects, including identifying appropriate models, generic expectations, and rhetorical choices. P/NP or letter grading.

**189. Advanced Honors Seminars. (1)** Seminar, three hours. Limited to 20 students. Designed as adjunct to undergraduate lecture course. Exploration of topics in greater depth through supplemental readings, papers, or other activities and led by lecture course instructor. May be applied toward honors credit for eligible students. Honors content noted on transcript. P/NP or letter grading.

**189HC. Honors Contracts. (1)** Tutorial, three hours. Limited to students in College Honors Program. Designed as adjunct to upper-division lecture course. Individual study with lecture course instructor to explore topics in greater depth through supplemental readings, papers, or other activities. May be repeated for maximum of 4 units. Individual honors contract required. Honors content noted on transcript. Letter grading.

**M192. Undergraduate Practicum in English: Journals. (2)** (Same as English M192.) Seminar, two hours. Training and supervised practicum for undergraduate student editors of campus journals supervised by faculty members in English and/or Writing Programs. May be repeated for credit. P/NP or letter grading.

**195. Community or Corporate Internships in English Composition. (4)** Tutorial, to be arranged. Requisites: course 3 or 3H, satisfaction of Writing II requirement. Limited to juniors/seniors. Internship in supervised setting in community agency or business. Students meet on regular basis with instructor and provide periodic reports of their experience. May be repeated for credit. Individual contract with supervising faculty member required. P/NP or letter grading.

**199. Directed Research or Senior Project in English Composition. (2 to 4)** Tutorial, to be arranged. Requisite: course 3 or 3H. Limited to juniors/seniors. Supervised individual research or investigation under guidance of faculty mentor. Culminating paper or project required. May be repeated for credit. Individual contract required. P/NP or letter grading.

## Graduate Courses

**300. Teaching English. (4)** Lecture, four hours. Required of candidates for single subject credential in English. Study of theories of rhetoric, composition, reading, and literature as they apply to secondary school or college English curriculum. S/U or letter grading.

**375. Teaching Apprentice Practicum. (1 to 4)** Seminar, to be arranged. Preparation: apprentice personnel employment as teaching assistant, associate, or fellow. Teaching apprenticeship under active guidance and supervision of regular faculty member re-

sponsible for curriculum and instruction at UCLA. May not be substituted for any departmental enrollment requirements. May be repeated for credit. S/U grading.

**401. Current Issues in University Writing Pedagogy. (4)** Seminar, three hours. Limited to graduate students. Exploration of literature and theories of postsecondary writing pedagogy that may include focus on changing institutional role of writing instruction, multimodal composition, and linguistic/educational diversity. S/U or letter grading.

**402. Writing Pedagogy across Disciplines: Genre and Discourse. (4)** Seminar, three hours. Limited to graduate students. Survey of literature on academic writing across curriculum. Examination of writing conventions, genres, and styles in graduate student academic disciplines, with focus on evolving academic discourse in emerging and hybrid areas of inquiry. Development of best practices for adapting writing pedagogy to changes in disciplinary academic discourse, with discussion of challenges for multilingual learners. S/U or letter grading.

**403. Language Pedagogy: Form, Meaning, and Function. (4)** Seminar, three hours. Designed for graduate students. Survey of theories and applications of language structures and conventions, with insights from discourse analysis and functional grammar. Designed to develop instructor ability to explain structures and to articulate language-based issues of meaning. Integrates research and successful applications of knowledge for improved language-related instruction and feedback in composition studies. S/U or letter grading.

**404. Diversity and Student-Centered Pedagogy. (4)** Seminar, three hours. Limited to graduate students. Survey of literature on heterogeneous classrooms, with focus on diversity of race, socioeconomic status, geographic background, linguistic skills, and academic preparedness. Development of best practices for accommodating diverse student populations and building active inclusive curriculum and classroom environments at university level. S/U or letter grading.

**495A. Teaching Preparation Seminar: Second Language Learners. (4)** Seminar, three hours. Limited to graduate students. Required of all English as a second language (ESL) teaching assistants and open to students seeking Graduate Certificate in Writing Pedagogy. Focus on pedagogical issues specifically related to academic reading and composition skills for second language learners, including course design, assessment of student writing, conferencing, and specialized problems that may occur in teaching ESL courses. S/U grading.

**495B. Supervised Teaching of Language Learners. (2)** Seminar, two hours. Enforced requisite: course 495A. Required of all English as second language (ESL) teaching assistants each term they are assigned to teach ESL courses. Focus on composition pedagogy, writing course design, assessment of student writing, and specialized problems that may occur in teaching ESL courses. S/U grading.

**495C. Teaching Preparation Seminar: First-Year Composition. (4)** Seminar, three hours. Limited to graduate students. Required of all teaching assistants prior to teaching English Composition 3 courses and open to students seeking Graduate Certificate in Writing Pedagogy. Focus on composition pedagogy, writing course design, assessment of student writing, and specialized problems that may occur in teaching English Composition 3. S/U grading.

**495D. Supervised Teaching of First-Year Composition. (2)** Seminar, two hours. Enforced requisite: course 495C. Required of all teaching assistants who are assigned to English Composition 3 courses. Focus on composition pedagogy, writing course design, assessment of student writing, and specialized problems that may occur in teaching English Composition 3. May be repeated for credit. S/U grading.

**495E. Teaching Preparation Seminar: Writing in Disciplines. (2)** Seminar, three hours every other week. Limited to graduate students. Required of all teaching assistants for Writing II courses not exempt by appropriate departmental or program training and open to students seeking Graduate Certificate in Writing Pedagogy. Training focused on composition pedagogy, as-

essment of student writing, guidance of revision process, and specialized writing problems that may occur in disciplinary contexts. Practical concerns of creating assignments, marking and grading essays, and conducting peer reviews and conferences. May be repeated for credit. S/U grading.

**495F. Supervised Teaching of Writing in Disciplines. (2)** Seminar, two hours. Enforced requisite: course 495E. Required of all teaching assistants for Writing II courses not exempt by appropriate departmental or program training. Mentoring conferences and teaching observations, with focus on student-centered pedagogy, assessment of student writing, guidance of revision process, and specialized writing problems that may occur in disciplinary contexts. Practical concerns of creating assignments, marking and grading essays, and conducting peer reviews and conferences. May be repeated for credit. S/U grading.

**M495I. Teaching Preparation Seminar: Writing for Engineers. (4)** (Same as Engineering M495I.) Seminar, two and one half hours. Limited to graduate students. Required of all teaching assistants for Engineering writing courses not exempt by appropriate departmental or program training. Training and mentoring, with focus on composition pedagogy, assessment of student writing, guidance of revision process, and specialized writing problems that may occur in engineering writing contexts. Practical concerns of preparing students to write course assignments, marking and grading essays, and conducting peer reviews and conferences. S/U grading.

**M495J. Supervised Teaching of Writing for Engineers. (2)** (Same as Engineering M495J.) Seminar, one hour. Enforced requisite: course M495I. Required of all teaching assistants in their initial term of teaching Engineering writing courses. Mentoring in group and individual meetings. Continued focus on composition pedagogy, assessment of student writing, guidance of revision process, and specialized writing problems that may occur in engineering writing contexts. Practical concerns of preparing students to write course assignments, marking and grading essays, and conducting peer reviews and conferences. S/U grading.

**M495K. Teaching Preparation Seminar: Teaching and Writing Pedagogies for Electrical Engineers. (2)** (Same as Electrical and Computer Engineering M495.) Seminar, two hours. Limited to graduate electrical engineering students. Required of all departmental teaching assistants (TAs). May be taken concurrently while holding a TA appointment. Seminar on pedagogy and logistics of being a TA with emphasis on student-centered teaching, clear communication, and multimodal teaching and learning. S/U grading.

**495M. Teaching Preparation Seminar: Clusters. (2)** Seminar, two hours. Limited to graduate students. Required of all Clusters teaching assistants in their first quarter with Clusters. Training focused on student-centered pedagogy, reflective teaching, composition pedagogy, assessment of student writing, guidance of revision process, and specialized teaching issues that may occur in Clusters context. Practical concerns of lesson planning, discussion leading, responding to and grading essays, and conducting peer reviews and conferences. S/U grading.

**495N. Teaching Preparation: Writing-Intensive Seminar Development. (2)** Seminar, two hours. Limited to graduate students. Required of all Clusters teaching assistants in quarter prior to their first Clusters seminar and open to students seeking Graduate Certificate in Writing Pedagogy. Training focused on developing writing-intensive seminar with emphasis on identifying course objectives, choosing appropriate readings, sequencing and scaffolding curriculum, drafting integrated assignments, and foregrounding writing in discipline-specific context. Production of syllabus for seminar that satisfies Writing II requirement. S/U grading.

**495O. Supervised Teaching of Clusters Seminar. (2)** Seminar, two hours. Requisite: course 495N. Required of all Clusters teaching assistants teaching their first Clusters seminar. Mentoring conferences and teaching observations, with focus on student-centered pedagogy, assessment of student writing, guidance of revision process, and specialized writing problems that may occur in disciplinary and Clusters con-

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texts. Practical concerns of creating assignments, responding to and grading essays, and conducting peer reviews and conferences. May be repeated for credit. S/U grading.

**495P. Teaching Preparation Seminar: Empowering Culturally Diverse Student Writers. (2)** Seminar, two hours. Limited to graduate students. Recommended for all teaching assistants planning to teach English composition as part of AAP's summer bridge programs. Focus on pedagogy that serves heterogeneous classrooms, with emphasis on diversity of race, socioeconomic status, citizenship status, and academic preparedness. Practical concerns include lesson planning and professionalization for composition instructors. S/U grading.

**495S. Supervised Summer Teaching of Language and Composition. (2)** Seminar, 90 minutes. Requisite: course 495A or 495C. Recommended for all teaching assistants teaching English as a second language, English composition, and Writing II courses during summer. Focus determined on individual basis according to class appointed and may include oral skills pedagogy, composition pedagogy, course design, assessment of student performance, and specialized problems that may occur in intensive summer language and/or composition courses. Supervision during appointment and mentor meetings and reflection on teaching experience following summer appointment. S/U grading.

**496. Special Projects in Language and Writing Pedagogy. (1 to 4)** Tutorial, three hours. Limited to Writing Pedagogy graduate certificate students. Reflective teaching experience, practicum experience, special-

ized curriculum development project, or independent research project under guidance of faculty mentor. Individual contract required. S/U grading.

**499. Academic Professionalization Colloquium. (2)** Colloquium/workshop, three hours every other week. Limited to graduate students. Rotating speakers on topics such as designing digital teaching portfolio, drafting academic/teaching curriculum vitae (CV), writing application letters for academic jobs, and pursuing alternative academic careers. Speaker sessions and panels to be followed by workshops. Revision of application letter, CV, teaching portfolio, or other relevant document to be determined in consultation with colloquium organizer. S/U grading.

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# Appendixes

## Appendix A: University Administrative Officers

University of California (UC) administrative officers include the systemwide Board of Regents, Office of the university president, and chancellors of the ten state campuses. UCLA officers include administrative and academic executives, and deans of the College and schools.

### UC Board of Regents

Terms of **Regents** appointed by the Governor expire March 1 of the year in parentheses. The student Regent and alumni Regents serve a one-year term beginning July 1 and ending June 30 of the year shown.

### Regents Ex Officio

Michael V. Drake, *President of the University*  
Keith Ellis (2024), *Vice President, Alumni Associations of UC*  
Eleni T. Kounalakis, *Lieutenant Governor of California*  
Gavin C. Newsom, *Governor of California*  
Joel Raznick (2024), *President, Alumni Associations of UC*  
Anthony Rendon, *State Assembly Speaker*  
Tony K. Thurmond, *State Superintendent of Public Instruction*

### Appointed Regents

Maria Anguiano (2028)  
Elaine E. Batchlor (2033)  
Carmen Chu (2030)  
Michael Cohen (2030)  
Gareth Elliott (2025)  
Howard Peter Guber (2029)  
Jose M. Hernandez (2033)  
Richard Leib (2026)  
Hadi Makarechian (2032)  
Ana Matosantos (2034)  
Lark Park (2029)  
John A. Pérez (2024)  
Janet Reilly (2028)  
Mark Robinson (2034)  
Richard Sherman (2025)  
Jonathan Jay Sures (2032)  
Merhawi Tesfai (2024), *Student Regent*

### Faculty Representatives

Steven Cheung (2024), *Senate Vice Chair*  
James Steintrager (2024), *Senate Chair*

### Staff Adviser

Jo Mackness (2024), *Berkeley*

### Officers of the Regents

Alexander Bustamante, *Executive Vice President; Chief Compliance and Audit Officer*

Gareth Elliott, *Vice Chair*  
Richard Leib, *Chair*  
Tricia Lyall, *Secretary and Chief of Staff*  
Gavin C. Newsom, *President*  
Charles F. Robinson, *Senior Vice President; General Counsel*  
Jagdeep Singh Bachher, *Vice President, Investments; Chief Investment Officer*

### UC Office of the President

Michael V. Drake, *University President*  
Nathan Brostrom, *Executive Vice President; Chief Financial Officer*  
Alexander Bustamante, *Executive Vice President; Chief Compliance and Audit Officer*  
Carrie Byington, *Executive Vice President; UC Health*  
Rachael Nava, *Executive Vice President; Chief Operating Officer*  
Katherine S. Newman, *Executive Vice President, Academic Affairs; Provost*  
Michael Reese, *Senior Vice President, External Relations and Communication (Interim)*  
Charles F. Robinson, *Senior Vice President; General Counsel*  
Jagdeep Singh Bachher, *Vice President, Investments; Chief Investment Officer*  
Pamela Brown, *Vice President, Institutional Research and Academic Planning*  
Yvette Gullatt, *Vice President, Graduate, Undergraduate, and Equity Affairs; Vice Provost; Chief Diversity Officer*  
Glenda Humiston, *Vice President, Agriculture and Natural Resources*  
Craig Leasure, *Vice President, National Laboratories*  
Cheryl Lloyd, *Vice President, Human Resources*  
Theresa A. Maldonado, *Vice President, Research and Innovation*  
Van Williams, *Vice President, Information Technology Services; Chief Information Officer*  
Kathleen Fullerton, *Associate Vice President, State Government Relations*  
Christopher Harrington, *Associate Vice President, Federal Government Relations*

### UC Campus Chancellors

Gene D. Block, *Los Angeles*  
Carol T. Christ, *Berkeley*  
Howard Gillman, *Irvine*  
Sam Hawgood, *San Francisco*  
Pradeep K. Khosla, *San Diego*  
Cynthia K. Larive, *Santa Cruz*  
Gary S. May, *Davis*  
Juan Sánchez Muñoz, *Merced*  
Kim A. Wilcox, *Riverside*  
Henry T. Yang, *Santa Barbara*

### UCLA Administrative Officers

Gene D. Block, *Chancellor*  
Darnell M. Hunt, *Executive Vice Chancellor and Provost*  
Michael J. Beck, *Administrative Vice Chancellor*  
Allison Baird-James, *Vice Chancellor; Chief Financial Officer (Interim)*  
Ina Bryant, *Vice Chancellor, Legal Affairs (Interim)*  
Mitchell J. Chang, *Vice Chancellor, Equity, Diversity, and Inclusion (Interim)*  
Monroe Gorden, Jr., *Vice Chancellor, Student Affairs*

Michael S. Levine, *Vice Chancellor, Academic Personnel*  
 John C. Mazziotta, *Vice Chancellor, Health Sciences*  
 Mary Osako, *Vice Chancellor, Strategic Communications*  
 Rhea Turteltaub, *Vice Chancellor, External Affairs*  
 Roger M. Wakimoto, *Vice Chancellor, Research and Creative Activities*  
 Gary A. Clark Jr., *Vice Provost, Enrollment Management (Interim)*  
 C. Cindy Fan, *Vice Provost, International Studies and Global Engagement*  
 Erin Sanders O'Leary, *Vice Provost, Teaching and Learning*  
 David K. Yoo, *Vice Provost, Institute of American Cultures*  
 \_\_\_\_\_, *University Librarian*  
 Kate Jakway-Kelly, *University Registrar (Interim)*

## Deans of the UCLA College and Schools

### *College of Letters and Science*

Adriana Galván, *Undergraduate Education Division*  
 Miguel A. García-Garibay, *Senior Dean, Physical Sciences Division*  
 Tracy L. Johnson, *Life Sciences Division*  
 Alexandra Minna Stern, *Humanities Division*  
 Abel Valenzuela, Jr., *Social Sciences Division (Interim)*  
 Brett B. Steele, *School of the Arts and Architecture*  
 Paul H. Krebsbach, *School of Dentistry*  
 Christina A. Christie, *School of Education and Information Studies*  
 Ah-Hyung Alissa Park, *Henry Samueli School of Engineering and Applied Science*  
 Susan L. Ettner, *Graduate Education Division*  
 Michael E. Waterstone, *School of Law*  
 Antonio E. Bernardo, *John E. Anderson Graduate School of Management*  
 Steven M. Dubinett, *David Geffen School of Medicine*  
 Eileen L. Stempel, *Herb Alpert School of Music*  
 Lin Zhan, *School of Nursing*  
 Anastasia Loukaitou-Sideris, *Meyer and Renee Luskin School of Public Affairs (Interim)*  
 Ronald S. Brookmeyer, *Jonathan and Karin Fielding School of Public Health*  
 Brian E. Kite, *School of Theater, Film, and Television (Interim)*  
 Eric A. Bullard, *University Extension—Continuing Education*

## Appendix B: Endowed Chairs

Although UCLA is a public institution, private gifts are increasingly important in maintaining the quality of the three missions of education, research, and community service. Among the principal forms of private support are endowed professorships, or chairs, which support the educational and research activities of distinguished faculty members.

As of publication, UCLA has 531 endowed chairs that have been approved by the UC Office of the President.

## School of the Arts and Architecture

Alma M. Hawkins Memorial Chair  
 S. Charles Lee Chair in Architecture and Urban Design

Harvey S. Perloff Chair  
 Lynda and Stewart Resnick Endowed Chair in Art  
 UCLA Art Council Professorship in Art

## School of Dentistry

Alumni and Friends Oral and Maxillofacial Surgery Endowed Chair  
 Alumni and Friends Presidential Endowed Chair  
 Thomas R. Bales Chair in Orthodontics  
 Thomas K. Barber Endowed Chair in Pediatric Dentistry  
 Naomi and Jim Ellison Endowed Chair  
 Lee Family Endowed Chair  
 Momentum Endowed Chair in Special Patient Care  
 Nobel Biocare Endowed Chair in Surgical Implant Dentistry  
 Dr. No-Hee Park Chair in Dentistry  
 Tarrson Family Endowed Chair in Periodontics  
 Jack A. Weichman Chair in Endodontics  
 Bob and Marion Wilson Endowed Chair  
 Felix and Mildred Yip Endowed Professorship in Dentistry

## School of Education and Information Studies

Martin and Bernard Breslauer Professorship in Bibliography  
 Allan Murray Cartter Chair in Higher Education  
 Dr. Rosalyn Shostak Heyman and Dr. Max L. Heyman, Jr., Endowed Chair  
 George F. Kneller Chair in Education and Anthropology  
 George F. Kneller Chair in Education and Philosophy  
 Presidential Chair in Education and Diversity  
 Pritzker Family Endowed Chair in Education to Strengthen Families  
 Wasserman Endowed Deanship of Education and Information Studies

## Henry Samueli School of Engineering and Applied Science

L.M.K. Boelter Chair in Engineering  
 Collins Aerospace Term Chair for Excellence  
 Collins Aerospace Term Chair for Innovation  
 Vijay K. Dhir Chair in Engineering  
 Traugott and Dorothea Frederking Endowed Chair  
 Norman E. Friedmann Chair in Knowledge Sciences  
 Armond and Elena Hairapetian Chair in Engineering and Medicine  
 Tatsuo Itoh Endowed Chair in Electrical and Computer Engineering  
 Leonard Kleinrock Term Chair in Computer Science  
 Evalyn Knight Chair in Engineering  
 Levi James Knight, Jr., Chair for Innovation  
 Levi James Knight, Jr., Term Chair for Excellence  
 Fang Lu Endowed Chair in Engineering  
 J.M. Maguire Term Chair in Engineering  
 Richard G. Newman AECOM Endowed Chair in Civil Engineering  
 Nippon Sheet Glass Company Chair in Materials Science  
 Northrop Grumman Chair in Electrical Engineering  
 Northrop Grumman Chair in Electrical Engineering/Electromagnetics  
 Northrop Grumman Opto-Electronic Chair in Electrical Engineering  
 Mukund Padmanabhan Term Chair  
 Mukund Padmanabhan Term Chair Electrical Engineering  
 Ralph M. Parsons Foundation Chair in Chemical Engineering  
 Jonathan B. Postel Chair in Computer Systems  
 Jonathan B. Postel Chair in Networking  
 Presidential Endowed Chair in Structural Engineering  
 Pritzker Chair in Sustainability  
 Raytheon Company Chair in Electrical Engineering  
 Raytheon Company Chair in Mechanical Engineering  
 Charles P. Reames Endowed Chair in Electrical Engineering  
 Ben Rich Lockheed Martin Chair in Aeronautics  
 Sabol-Scott Term Chair in Civil and Environmental Engineering

John P. and Claudia H. Schauerman Endowed Chair in Engineering  
 William Frederick Seyer Chair in Materials Electrochemistry  
 Ronald and Valerie Sugar Dean of Henry Samueli School of Engineering and Applied Science  
 Ronald and Valerie Sugar Endowed Chair in Engineering  
 Symantec Term Chair in Computer Science  
 Carol and Lawrence E. Tannas, Jr., Endowed Chair in Engineering  
 Carol and Lawrence E. Tannas, Jr., Endowed Term Chair in Engineering  
 William D. Van Vorst Chair in Chemical Engineering Education  
 Volgenau Chair for Engineering Excellence  
 Volgenau Chair for Engineering Innovation  
 Volgenau Endowed Chair in Engineering  
 Wintek Endowed Chair in Electrical Engineering  
 Neria and Manizheh Yomtoubian Endowed Chair in Cancer and Risk Sciences

## School of Law

Norman Abrams Endowed Chair in Law  
 Omar and Azmeralda Alfi Chair in Islamic Law  
 Harry Graham Balter Chair in Law  
 Barrall Family Endowed Chair in Tax Law and Policy  
 David A. Binder Endowed Chair in Clinical Law  
 Connell Professorship of Law  
 Jesse Dukeminier Professorship in Law  
 Dan and Rae Emmett Endowed Chair in Environmental Law  
 Rosalinde and Arthur Gilbert Foundation Endowed Chair in Civil Rights and Civil Liberties  
 Carole Goldberg Endowed Chair in Native American Law  
 Paul Hastings Endowed Chair in Business Law  
 Robert Henigson Endowed Chair in Legal Ethics  
 Pete Kameron Endowed Chair in Law  
 Pete Kameron Chair in Law and Social Justice  
 Michael J. Klein Chair in Law  
 Richard C. Maxwell Chair in Law  
 McDonald/Wright Chair in Law  
 Lowell Milken Chair in Law  
 Arjay and Frances Fearing Miller Chair in Law  
 Alicia Minana Chair in Law  
 Rachel F. Moran Endowed Chair in Law  
 Susan Westerberg Prager Endowed Chair in Law  
 Honorable Harry Pregerson Endowed Chair in Law  
 David G. and Dallas P. Price Chair in Law  
 Promise Institute Chair in Comparative and International Law  
 Promise Institute Chair in Human Rights  
 David Sanders Professorship in Law and Medicine  
 Greg Sarris Endowed Chair in Native American Law  
 Michael H. Schill Endowed Chair in Law  
 Gary T. Schwartz Endowed Chair in Law  
 Security Pacific Bank Chair  
 Ralph and Shirley Shapiro Chair in Law  
 Shirley and Ralph Shapiro Endowed Chair in Environmental Law  
 Jonathan D. Varat Endowed Chair in Law  
 William D. Warren Chair in Law  
 Frank G. Wells Endowed Chair in Environmental Law  
 Stephen Yeazell Endowed Chair in Law  
 Eric M. Zolt Chair in Tax Law and Policy

## College of Letters and Science

Armen A. Alchian Chair in Economic Theory  
 Maurice Amado Chair in Sephardic Studies  
 Jahangir and Eleanor Amuzegar Chair in Iranian Studies  
 Aris Anagnos Family Chair in Hellenic Studies  
 Joyce Oldham Appleby Endowed Chair of America in the World  
 Thomas M. Asher Endowed Chair in Microbiology  
 George and Nouhad Ayoub Chair in Life Sciences Innovation  
 Marilyn Beaudry-Corbett Endowed Chair in Mesoamerican Archaeology

Bedari Kindness Institute Endowed Chair  
 Mani L. Bhaumik Presidential Endowed Chair in Theoretical Physics  
 Theresa McShane Biggs and Henry P. Biggs Centennial Term Chair in Linguistics  
 Paul D. Boyer Professorship in Molecular Biology and Biochemistry  
 Henry J. Bruman Chair in German History  
 Dr. E. Bradford Burns Chair in Latin American Studies  
 Robert N. Burr Endowed History Department Chair  
 Chair of California and the American West  
 Edward W. Carter Chair in European Art  
 James and Carol Collins Chair in College of Letters and Science  
 Brian P. Copenhagen Chair  
 Lloyd E. Cotsen Chair in Archaeology  
 D.J. and J.M. Cram Chair in Organic Chemistry  
 Lore and Gerald Cunard Chair in UCLA/Getty Conservation Program  
 Charles E. Davidson Endowed Chair in Economics  
 Charles E. Davidson Endowed Term Chair in Economics  
 De Logi Chair in Biological Sciences  
 Donald R. Dickey Chair in Vertebrate Biology  
 A. Richard Diebold, Jr., Endowed Chair  
 Distinguished Chair in Environment and Sustainability  
 Navin and Pratima Doshi Chair in Indian Studies  
 Dubchansky Endowed Chair in Economics  
 Dunn Family Endowed Chair in Data Theory  
 Mr. and Mrs. C.N. Flint Professorship in Philosophy  
 Christopher S. Foote Term Chair  
 Evan Frankel Endowed Chair  
 Andrea M. Ghez Centennial Term Chair in Astronomy and Astrophysics  
 Benjamin Graham Centennial Endowed Chair in Value Investing  
 Gloria and Paul Griffin Chair in Philosophy  
 Haruhisa Handa Professorship in Shinto Studies  
 John Charles Hillis Chair in Literature  
 Marvin Hoffenberg Chair in American Politics and Public Policy  
 Dr. Myung Ki Hong Endowed Chair in Materials Innovation  
 Dr. Myung Ki Hong Endowed Chair in Polymer Science  
 Walter Hopps Chair in Modern and Contemporary Art  
 Richard Hovannisian Chair in Modern Armenian History  
 Marcia H. Howard Term Chair in Literary Studies  
 June and Alex Jaffee Chair in Women and Politics  
 Michael and Alice Jung Endowed Chair in Medicinal Chemistry and Drug Discovery  
 Sady and Ludwig Kahn Chair in Jewish History  
 Penny Kanner Endowed Chair in Women's Studies  
 Renée and David Kaplan Presidential Endowed Chair in Philosophy  
 Fred Kavli Chair in Nanosystems Sciences  
 Kershaw Chair in Ancient Eastern Mediterranean Studies  
 Ibn Khaldun Endowed Chair in World History  
 Leon and Joanne V.C. Knopoff Chair in Physics and Geophysics  
 Alexander and Renee Kolin Endowed Professorship in Molecular Biology and Biophysics  
 George P. Kolovos Family Centennial Term Chair in Hellenic Studies  
 Venu and Ana Kotamraju Endowed Chair in Economics  
 Lauren B. Leichtman and Arthur E. Levine Astrophysics Endowed Chair  
 Madeleine L. Letessier Chair in French and Francophone Studies  
 Thomas E. Lifka Chair in History  
 Kevin Love Fund Centennial Chair  
 Vladimir and Lydia Markov Chair in Russian Literature  
 John McTague Career Development Chair  
 Dorothy L. Meier Social Equities Chair  
 Anne K. Mellor Presidential Chair in Women's Writing  
 Ronald J. Mellor Chair in Ancient History  
 Sherie and Donald Morrison Chair in Immunology  
 Sherie L. Morrison Chair in Microbiology, Immunology, and Molecular Genetics  
 Morrison Family Endowed Chair  
 Franklin D. Murphy Chair in Italian Renaissance Studies  
 Narekatsi Chair in Armenian Studies  
 Gary B. Nash Endowed Chair in United States History  
 Waldo W. Neikirk Term Chair

LeRoy Neiman Term Chair  
 Nickoll Family Endowed Chair in History  
 1939 Society Samuel Goetz Chair in Holocaust Studies  
 Joan Palevsky Chair in Classics  
 Pourdavoud Endowed Director's Chair  
 Presidential Chair in Chemistry  
 Presidential Chair in Institute of the Environment  
 Presidential Chair in Modern European History, Art, and Culture  
 Presidential Chair in Molecular Cell Biology  
 President's Chair in Developmental Immunology  
 Howard and Astrid Preston Term Chair in Astrophysics  
 Pritzker Chair in Environment and Sustainability I  
 Pritzker Chair in Environment and Sustainability II  
 Ramanujan Visiting Professorship  
 Hans Reichenbach Chair in Scientific Philosophy  
 Peter Reill Chair in European History (1450 to Modern)  
 Howard Reiss Career Development Chair  
 John D. and Edith M. Roberts Term Chair in Organic Chemistry  
 Maria Rowena Ross Term Chair in Biological Sciences  
 Michael and Irene Ross Endowed Chair in Yiddish Studies  
 Marcie H. Rothman Presidential Chair in Food Studies  
 Musa Sabi Chair in Iranian Studies  
 Edward W. Said Professorship in Comparative Literature  
 David Saxon Presidential Term Chair in Mathematics  
 David Saxon Presidential Term Chair in Physics  
 David S. Saxon Presidential Chair in Physics  
 Randy Schekman and Sabeeha Merchant Centennial Term Chair  
 David O. Sears Presidential Endowed Chair in Division of Social Sciences  
 Johanna F. and Joseph H. Shaper Family Chair in Microbiology  
 Shapiro Family Endowed Chair in Modern Political Theory  
 Joan Silsbee Chair in African Cultural Archaeology  
 Louis B. Slichter Chair in Geophysics and Planetary Physics  
 Louis B. and Martha B. Slichter Endowed Chair in Geosciences  
 Kenneth L. Sokoloff Chair in Economic History  
 Charles Speroni Chair in Italian Literature and Culture  
 Staglin Family Chair in Psychology  
 Steinmetz Chair in Classical Archaeology and Material Culture  
 Irving and Jean Stone Endowed Chair I  
 Irving and Jean Stone Endowed Chair II  
 Irving and Jean Stone Endowed Chair III  
 Jean Stone Chair  
 Keith and Cecilia Terasaki Endowed Chair in Physical Sciences  
 Keith and Cecilia Terasaki Presidential Endowed Chair in Division of Life Sciences  
 Kenneth N. Trueblood Endowed Chair in Chemistry and Biochemistry  
 Richard P. and Linda S. Turco Term Chair  
 UCLA Foundation Chair  
 Viterbi Family Endowed Chair in Mediterranean Jewish Studies  
 Alexander von Humboldt Endowed Chair in Geography  
 Walter and Shirley Wang Endowed Chair in Medicinal Drug Discovery  
 Scott Waugh Endowed Chair in Division of Social Sciences  
 Eugen Weber Chair in Modern European History  
 Robert and Dorothy Wellman Chair in Medieval History  
 Bernice Wenzel and Wendell Jeffrey Term Endowed Chair in Behavioral Neuroscience  
 Bernice Wenzel and Wendell Jeffrey Term Endowed Chair in Cognitive Neuroscience  
 Bernice Wenzel and Wendell Jeffrey Term Endowed Chair in Developmental Neuroscience  
 Dean M. Willard Chair in Chemistry  
 Saul Winstein Chair in Organic Chemistry  
 Linda and Fred Wudl Term Chair  
 Tadashi Yanai Endowed Chair in Japanese Literature  
 Kyoko Yuki and Masamichi Takesaki Endowed Chair in Operator Algebras  
 Stanley M. Zimmerman Endowed Chair in Economics and Finance  
 Jeffrey and Helo Zink Endowed Professional Development Term Chair in Chemistry

## John E. Anderson Graduate School of Management

Allstate Chair in Insurance and Finance  
 Andersen Worldwide Chair in Management  
 John E. Anderson Chair in Management  
 Marion Anderson Chair in Management  
 Arden Realty Chair  
 Donnalisa '86 and Bill Barnum Endowed Term Chair in Management  
 Robert D. Beyer '83 Chair in Management  
 California Chair in Real Estate and Land Economics  
 Edward W. Carter Chair in Business Administration  
 William M. Cockrum Chair in Entrepreneurship  
 William M. Cockrum III Presidential Term Chair in Entrepreneurship  
 William M. Cockrum Professorship in Entrepreneurial Finance  
 James A. Collins Chair in Management  
 Warren C. Corder Chair in Money and Financial Markets  
 Ernst and Young Chair in Accounting  
 Laurence D. and Lori W. Fink Endowed Chair in Finance  
 Ford II Chair in International Management  
 Joel Fried Chair in Applied Finance  
 Lee and Seymour Graff Endowed Professorship  
 Goldyne and Irwin Hearsh Chair in Money and Banking  
 Hans Hufschmid Chair in Management  
 IBM Chair in Management  
 Joseph Jacobs Chair in Entrepreneurial Studies  
 Neil Jacoby Chair in Management  
 Japan Alumni Chair in International Finance  
 Bud Knapp Marketing Professorship  
 Harry and Elsa Kunin Chair in Business and Society  
 J. Clayburn La Force Chair in Management  
 William E. Leonhard Chair in Management  
 Los Angeles Times Professor of Management and Policy  
 Justice Elwood Lui Endowed Term Chair in Management  
 Chauncey J. Medberry Chair in Management  
 Peter W. Mullin Chair in Management  
 Howard Noble Chair in Management  
 Paine Chair in Management  
 George Robbins Chair in Management  
 Sanford and Betty Sigoloff Chair in Corporate Renewal  
 Term Chair in Teaching Excellence  
 Term Chair in Management  
 UCLA Anderson Board of Visitors Term Chair in Management  
 UCLA Anderson Dean's Term Chair in Management  
 UCLA Anderson Faculty Term Chair in Management  
 J. Fred Weston Chair in Finance  
 Harold Williams Chair in Management  
 Susan Wojcicki Chair in Data Science and Innovation  
 Ho-Su Wu Chair in Management  
 Bing ('86) and Alice Liu Yang Endowed Term Chair in Management  
 Bing ('86) and Alice Liu Yang Endowed Term Chair in Management and Innovation  
 Bing ('86) and Alice Liu Yang Endowed Term Chair in Teaching Excellence

## David Geffen School of Medicine

William S. Adams, MD, Chair in Medicine  
 Ahmanson Chair in Ophthalmology  
 Mary D. Allen Chair in Vision Research  
 Lori Altshuler Endowed Chair in Mood Disorders  
 Harlan C. Amstutz, MD, Endowed Chair in Anthroplasty  
 Wallis Annenberg Endowed Chair in Integrative East-West Medicine  
 Leonard Apt Endowed Chair in Pediatric Ophthalmology  
 Archstone Foundation Endowed Chair in Geriatrics  
 Stephen J. Ryan-Arnold and Mabel Beckman Foundation Chair  
 Casey Lee Ball Endowed Chair in Pediatric Nephrology  
 Wiley F. Barker Chair in Vascular Surgery



- Kamal A. Batniji, MD, Endowed Chair for Humanitarian Care and Innovation in Laryngology and Head and Neck Surgery  
 Dena Bat-Yaacov Endowed Chair in Psychiatry  
 Ulrich Batzdorf, MD, Chair in Spinal Neurosurgery  
 Louis D. Beaumont Chair in Surgery  
 Donald P. Becker, MD, Term Chair in Neurosurgery  
 Donald and Vivienne Bellisario Chair  
 Jerome L. Belzer Chair in Medical Research  
 Lillian and Alvin L. Bergman Chair in Vascular Research  
 Bing Professorship in Urologic Research  
 Anna and Harry Borun Chair in Geriatrics/Gerontology  
 Bowyer Professorship in Medical Oncology  
 Saul Brandman Endowed Chair in Pulmonary Arterial Hypertension  
 Judson Braun Chair in Biological Psychiatry  
 Geri and Richard Brawerman Chair in Pediatric Neurosurgery  
 Gary L. Brinderson Family Chair in Neuro-Intensive Care  
 Eli and Edythe L. Broad Foundation Chair in Inflammatory Bowel Disease Research  
 Rubin Brown Chair in Pediatric Neurology  
 Burnett Family Chair  
 Ronald W. Busuttill, MD, PhD and Sidney Kimmel Endowed Chair in Transplantation Surgery  
 Thomas C. Calcaterra, MD, Chair in Head and Neck Surgery  
 Joseph Campbell Chair of Child Psychiatry  
 Iris Cantor Chair in Breast Imaging  
 Iris Cantor Endowed Chair in Women's Health  
 Edward W. Carter Chair in Internal Medicine  
 Castera Chair in Cardiology  
 Vincent and Stella Coates Chair in Molecular Neurobiology  
 Tony Coelho Chair in Neurology  
 Ronald and Susan Cohen Term Chair in Childhood Development and Cerebral Palsy  
 Carol and James Collins Chair  
 Carol and James Collins Chair in Geriatric Medicine  
 William E. Connor Chair in Cardiothoracic Transplantation  
 Eliot Corday Chair in Cardiovascular Medicine and Science  
 Norman Cousins Chair in Psychoneuroimmunology  
 Crump Chair in Medical Engineering  
 Karen and Frank Dabby Endowed Chair in Ophthalmology  
 Dr. Alfonsina Q. Davies Endowed Chair in Honor of Paul Crandall, MD, for Epilepsy Research  
 M. Philip Davis Chair in Microbiology and Immunology  
 Robert and Kelly Day Chair in Cardiothoracic Surgery  
 Robert and Kelly Day Chair in General Surgery  
 Robert and Kelly Day Chair in Surgical Outcomes  
 Robert and Kelly Day Chair in Transplantation  
 Jean B. deKernion, MD, Endowed Chair in Urology  
 Wini and William J. Dignam, MD, Endowed Chair in Obstetrics and Gynecology  
 Joshua S. and Beth C. Friedman Chair for Women's Genetic Research  
 Diller-von Furstenberg Family Endowed Chair in Human Genetics  
 Diller-von Furstenberg Family Endowed Chair in Precision Clinical Genomics  
 John Bartley Dillon, MD, Endowed Chair in Anesthesiology  
 Roy and Carol Doumani Chair  
 Roy and Carol Doumani Chair in Urological Oncology  
 Robert and Patricia Draine Endowed Chair in Geriatric Medicine  
 Dumont-UCLA Chair in Transplantation Surgery  
 Jeffrey J. Eckardt, MD, Term Chair in Orthopaedic Surgery  
 Max Factor Family Foundation Chair in Nephrology  
 Charles Kenneth Feldman Chair in Ophthalmology  
 Marjorie Fine, MD, Endowed Chair in Clinical General Surgery  
 Elsie and Isaac Fogelman Endowed Chair in Pediatric Neurology  
 Eric W. Fonkalsrud, MD Endowed Chair in Pediatric Surgery  
 Dr. Daniel X. Freedman Administrative Chair in Academic Psychiatry  
 John Douglas French Alzheimer's Foundation Endowed Chair  
 Friends of Semel Endowed Term Chair  
 Joaquin M. Fuster Chair in Cognitive Neuroscience  
 David Geffen Chair in Informatics  
 David Geffen Chair in Medical Research  
 David Geffen School of Medicine Chair in Neuroscience  
 Laraine and David Gerber Chair in Ophthalmology  
 Maggie G. Gilbert Endowed Chair in Bipolar Disorders  
 Rosalinde and Arthur Gilbert Foundation Endowed Chair in Health-Care Delivery  
 Dr. Allen and Charlotte Ginsburg Endowed Chair in Precision Genomic Medicine  
 Dr. Allen and Charlotte Ginsburg Endowed Chair in Translational Genomics  
 Nancy and Jonathan Glaser Family Endowed Chair for Pediatric Sarcomas  
 Joan S. and Ralph N. Goldwyn Endowed Chair in Immunobiology and Transplantation Research  
 Victor Goodhill, MD, Chair in Head and Neck Surgery  
 Laurie and Steven C. Gordon Chair in Neurosciences  
 Laurie and Steven C. Gordon Chair in Neurosurgery  
 Steven C. Gordon Family Chair in Parkinson's Disease Research  
 Dolly Green Chair in Clinical Research  
 Dolly Green Chair in Ophthalmology  
 Dolly Green Chair in Vision Science  
 Thomas N. Grove Chair in Anesthesiology  
 Maud Cady Guthman Chair in Cardiology  
 Muriel Harris Chair in Geriatric Psychiatry  
 Shirley M. Hatos Chair  
 Stefan Hatos Endowed Chair in Psychiatry and Biobehavioral Sciences  
 Gavin S. Herbert Endowed Chair for Macular Degeneration  
 Ernest G. Herman Chair in Ophthalmology  
 Christian Herrmann, Jr., MD Endowed Chair in Neuromuscular Disease  
 Holt and Jo Hickman Endowed Chair in Advanced Lung Disease and Lung Transplantation  
 Ronald S. Hirshberg Chair in Translational Pancreatic Cancer Research  
 Stanley Iezman and Nancy Stark Endowed Chair in Thoracic Radiation Oncology Research  
 A. Ray Irving, Jr., MD, Chair in Clinical Ophthalmology  
 John Jergens Chair in Kidney Transplantation  
 Kaiser Permanente Chair in Community Medicine  
 Margaret Holden Jones Kanaar, MD, Chair in Cerebral Palsy  
 Solomon A. and Marie M. Kaplan Chair of Pediatric Endocrinology  
 Maddie Katz Endowed Chair in Palliative Care Research and Education  
 Ronald L. Katz, MD, Endowed Chair in Anesthesiology  
 Chizuko and Nobuyuki Kawata Chair in Cardiology  
 Dorothy and Robert Keyser Endowed Chair  
 Karl Kirchgessner Foundation Chair in Vision Science  
 Arnold W. Klein, MD, Chair in Dermatology  
 George F. Kneller Chair in Family Medicine  
 Kolokotronis Chair in Ophthalmology  
 John J. Kuiper Chair in Nephrology and Renal Transplantation  
 Grace and Walter Lantz Endowed Chair in Ophthalmology  
 Lya and Harrison Latta Chair in Pathology  
 Lauren B. Leichtman and Arthur E. Levine Endowed Chair in Women's Health Research  
 Eleanor Leslie Chair in Innovative Brain Research  
 Eleanor Leslie Chair in Pioneering Brain Research  
 Eleanor I. Leslie Chair of Neuroscience  
 Barbara Gerald Levey Endowed Chair  
 Gerald S. Levey, MD, Endowed Chair  
 Shirley LeVine Chair in Pediatric Education  
 Bert O. Levy Endowed Chair in Orbital and Ophthalmic Plastic Surgery  
 Hilel Lewis Family Chair in Ophthalmology  
 Walton Li Chair in Cornea and Uveitis  
 Lincy Foundation Chair in Clinical Gastroenterology  
 Mark S. Litwin, MD, Endowed Chair in Mentorship  
 William P. Longmire, Jr., Chair in Surgery  
 Olive and Anga Lundgren Endowed Chair  
 Meyer and Renee Luskin Chair in Migraine and Headache Studies  
 Gordon and Virginia MacDonald Distinguished Chair in Human Genetics  
 Charles H. Markham Chair in Neurology  
 Nancy Marks Endowed Chair in Women's Health Research  
 Della Martin Chair in Psychiatry  
 Mattel Executive Endowed Chair in Pediatrics

- David May II Chair in Ophthalmology  
 John Mazziotta Endowed Chair in Neurology  
 John Mazziotta, MD, PhD, Chair in Medicine  
 Henry Alvin and Carrie L. Meinhardt Chair in Kidney Cancer Research  
 Sherman M. Mellinkoff Distinguished Professor in Medicine Chair  
 Joanne and George Miller and Family Endowed Chair  
 Timothy A. Miller Chair in Plastic Surgery  
 Michael M. Minchin, Jr., President, JD French Alzheimer's Foundation  
 Endowed Chair  
 Jeffrey Modell/Sidney Sheldon Chair in Immunology  
 Bartly J. Mondino, MD, Endowed Chair in Ophthalmology  
 Wesley S. Moore, MD, Endowed Chair in Endovascular Surgery  
 Moss Foundation Chair in Gastrointestinal and Personalized Surgery  
 Dr. Walter and Mrs. Kathryn Mullikin Chair in Orthopaedic Surgery  
 Jane and Marc Nathanson Endowed Chair  
 James H. Nicholson Chair in Pediatric Cardiology  
 Mary Oakley Foundation Chair in Neuro-degenerative Diseases  
 Frances M. O'Malley Administrative Chair in Neuroscience History  
 William and Patricia Oppenheim Presidential Chair in Pediatric  
 Orthopaedics  
 Oppenheimer Brothers Chair  
 Helga and Walter Oppenheimer Endowed Chair in Orthopaedic Oncology  
 Philip L. Palumbo Chair in Clinical Hepatology  
 Albert F. Parlow and David H. Solomon Chair for UCLA Program on Aging  
 Gail Patrick Endowed Administrative Chair in Brain Research  
 Samuel J. Pearlman, MD, and Della Z. Pearlman Chair in Head and Neck  
 Surgery  
 Carl M. Pearson, MD, Endowed Chair in Rheumatology  
 Pennington Family Foundation Endowed Term Chair in Pediatrics  
 Frances and Albert Piansky Chair in Anatomy  
 Guitiara Pierpoint Endowed Chair in Interstitial Pulmonary Fibrosis  
 Thomas P. and Katherine K. Pike Chair in Addictive Studies  
 Elizabeth R. and Thomas E. Plott Chair in Gerontology  
 Edith Agnes Plumb Endowed Chair in Neurobiology  
 Harold and Pauline Price Chair in Ophthalmology  
 Pritzker Family Endowed Chair in Pathology  
 Gary S. Rachelefsky, MD Endowed Chair  
 Shlomo Raz, MD, Chair in Urology  
 Resnick Chair in Eating Disorders  
 Lynda and Stewart Resnick Endowed Chair in Human Nutrition  
 Revlon Chair in Women's Health  
 Leo G. Rigler Chair in Radiological Sciences  
 RNPH Board of Advisors Term Chair in Hospital Psychiatry  
 Sidney Roberts and Clara Szego Roberts Endowed Chair in Molecular/  
 Cellular Endocrinology  
 Augustus S. Rose Chair in Neurology  
 Arthur L. Rosenbaum, MD, Chair in Pediatric Ophthalmology  
 Maxine and Eugene Rosenfeld Endowed Chair in Computational Genetics  
 Maxine and Eugene Rosenfeld Endowed Chair in Medical Education  
 Rosenfelt Family Endowed Chair in Lymphoma  
 Carol and Saul Rosenzweig Endowed Chair in Cancer Therapies  
 Development  
 Stephen J. Ryan Arnold and Mabel Beckman Foundation Chair  
 Estelle, Abe, and Marjorie Sanders Chair in Cancer Research  
 Daljit S. and Elaine Sarkaria Endowed Chair in Diagnostic Medicine  
 Bernard G. Sarnat, MD, Endowed Chair in Craniofacial Biology  
 Arnold B. Scheibel, MD, Chair for Brain Research  
 Ethel Scheibel Chair in Neuroscience  
 William Scheibel Chair in Neuroscience  
 Terry Semel Chair in Alzheimer's Disease Research and Treatment  
 Garry Shandling Chair in Pancreatic Diseases  
 Garry Shandling Chair in Pancreatic Surgery  
 Alison Shapiro Term Chair for Children's Cognitive Development  
 Shapiro Family Term Chair in Developmental and Behavioral Pediatrics  
 and Cerebral Palsy  
 Peter Shapiro Term Chair for Enhancing Children's Developmental and  
 Behavioral Health  
 Peter William Shapiro Chair for Center for Cerebral Palsy  
 W. Donald and Ginny M. Shields Chair in Child Neurology  
 Fred Siltan Family Chair in Movement Disorders  
 Simms/Mann Family Foundation Chair in Integrative Oncology  
 Jennifer Jones Simon Chair in Radiation Oncology  
 Norton Simon Chair in Biophysics  
 Jonathan Sinay Chair in Epilepsy  
 Henry E. Singleton Chair in Urology  
 Jack H. Skirball Chair in Multiple Sclerosis Research  
 Jack H. Skirball Chair in Ocular Inflammatory Diseases  
 Jack H. Skirball Chair in Pediatrics  
 P. Gene and Elaine Smith Endowed Chair in Alzheimer's Disease Research  
 Rebecca Smith Chair in Molecular and Cellular Pathology  
 Rory Smith, MD, Endowed Chair  
 Smotrich Family Optometric Clinician-Scientist Chair  
 Jerome and Joan Snyder Chair in Ophthalmology  
 Joan and Jerome Snyder Chair in Cornea Diseases  
 Joan and Jerome Snyder Chair in Vision Science  
 George F. Solomon Professorship in Psychobiology  
 Spielberg Family Chair in Urologic Oncology  
 Norman F. Sprague Chair in Molecular Oncology  
 Frances Stark Chair in Neurology  
 Fran and Ray Stark Foundation Chair in Digestive Diseases  
 Fran and Ray Stark Foundation Chair in Ophthalmology  
 Fran and Ray Stark Foundation Chair in Urology  
 Peter Starrett Term Chair in Medical Education  
 Rupert and Gertrude Steiger Vision Research Chair  
 Jules Stein Chair in Ophthalmology  
 Michael and Sue Steinberg Endowed Chair in Global AIDS Prevention and  
 Policy Research  
 W. Eugene Stern Chair in Neurosurgery  
 E. Richard Stiehm Endowed Chair in Pediatric Allergy, Immunology, and  
 Rheumatology  
 Ruth and Raymond H. Stotter Chair in Neurosurgery  
 Bradley R. Straatsma, MD, Endowed Chair in Ophthalmology  
 Dorothy and Leonard Straus Endowed Chair in Gastroenterology in  
 Memory of Gussie Borun  
 Streisand Chair in Cardiology  
 Dr. Allen J. Swartz and Roslyn Holt Swartz Women's Lung Health Endowed  
 Chair  
 Kelly Lee Tarantello Endowed Term Chair in Integrative Liver Transplantation  
 Dr. George Tarjan Chair in Intellectual and Developmental Disabilities  
 Research  
 Michael E. Tennenbaum Family Endowed Chair in Creativity Research  
 Paul I. Terasaki Chair in Surgery  
 Flora L. Thornton Chair in Vision Research  
 Leon J. Tiber, MD, and David S. Alpert, MD, Chair in Medicine  
 Vernon O. Underwood Family Chair in Ophthalmology  
 Philo Woodrow Van Wagoner Professorship  
 Variety Club—D. Barry Reardon Endowed Chair in Pediatric Hematology/  
 Oncology  
 Richard D. and Ruth P. Walter Chair in Neurology  
 Richard D. and Ruth P. Walter Chair in Psychiatry  
 Charles Stewart Warren and Hildegard Warren Endowed Research Chair  
 Wasserman Professor of Ophthalmology  
 Wasserman Term Chair for Innovation  
 David Weil Chair in Psychiatry and Biobehavioral Sciences  
 Dr. Louis Jolyon West Chair for Innovation in Psychiatry  
 Dr. Louis Jolyon West Chair for Excellence in Psychiatry  
 Wilder Chair in Psychiatry and Neuroscience  
 Susan and David Wilstein Endowed Chair in Medicine  
 Susan and David Wilstein Endowed Chair in Rehabilitation Medicine  
 Judith and Robert Winston Chair in Pediatric Urology

## Herb Alpert School of Music

- Kenny Burrell Chair in Jazz Studies  
 Susan G. Covell and Mitchel D. Covell, MD, Chair in Music  
 Mickey Katz Endowed Chair in Jewish Music  
 Leo M. and Elaine Krown Klein Chair in Performance Studies  
 Mohindar Brar Sambhi Endowed Chair in Indian Music  
 Shapiro Family Chair in Piano Performance

## School of Nursing

Lulu Wolf Hassenplug Chair in Nursing  
 Audrienne H. Moseley Chair in Biological Nursing Science  
 Audrienne H. Moseley Chair in Community Health Research  
 Audrienne H. Moseley Chair in Nursing  
 Audrienne H. Moseley Endowed Chair in Equity, Diversity, and Inclusion  
 Shapiro Family Endowed Chair in Developmental Disability Studies

## Meyer and Renee Luskin School of Public Affairs

Marjorie Crump Chair in Social Welfare  
 Franklin D. Gilliam, Jr. Chair in Social Justice  
 Meyer and Renee Luskin Chair in Inequality and Democracy  
 Meyer and Renee Luskin Endowed Chair in Innovation and Sustainability  
 Luskin Endowed Chair for Dean of the School of Public Affairs

## Jonathan and Karin Fielding School of Public Health

Fred H. Bixby Chair in Population Policy  
 Jonathan and Karin Fielding Presidential Chair in Health and Equity  
 Jonathan E. Fielding Chair in Climate Change and Public Health  
 Gordon–Levin Endowed Chair in Infectious Diseases and Public Health  
 Paul Torrens Chair in Healthcare Management  
 Fred W. and Pamela K. Wasserman Chair in Health Policy and Management

## School of Theater, Film, and Television

David C. Copley Chair for Study of Costume Design  
 Lew and Pamela Hunter/Jonathan and Janice Zakin Chair in Screenwriting  
 Rouben Mamoulian Visiting Chair in Film Directing  
 Rouben Mamoulian Visiting Chair in Theater Directing

## Chancellor's Office

James S. Coleman Chair in International Development Studies  
 Betsy Wood Knapp Chair for Innovation and Creativity

## Institute of American Cultures

George and Sakaye Aratani Chair in Japanese American Incarceration, Redress, and Community  
 Ralph Bunche Chair in International Studies  
 Morgan and Helen Chu Endowed Chair in Asian American Studies  
 Helen and Morgan Chu Endowed Director's Chair of the Asian American Studies Center  
 Korea Times–Hankook Ilbo Endowed Chair in Korean American Studies  
 UCLA Alumni and Friends of Japanese Ancestry Chair in Japanese American Studies  
 Walter and Shirley Wang Chair in U.S./China Relations and Communications

## International Institute

Rosalinde and Arthur Gilbert Foundation Endowed Chair in Israel Studies  
 Dong Soon Im and Mi Ja Im Endowed Chair in Korean Christianity  
 Paul I. and Hisako Terasaki Chair in Contemporary Japanese Studies  
 Terasaki Chair in U.S.–Japanese Relations

## Appendix C: Faculty Honors

### Distinguished Teaching Awards

#### Academic Senate Recipients

Each year the UCLA Alumni Association presents Distinguished Teaching Awards to Academic Senate faculty members. The highly prized awards are presented at the annual Andrea L. Rich Night to Honor Teaching, and selection of recipients is based on recommendations of the Academic Senate Committee on Teaching. Nominations are solicited from academic departments during fall quarter.

The Luckman Distinguished Teaching Awards Program was established in late 1991 after receipt of a generous gift from Harriet and Charles Luckman. Awards given for 1992 through 1997 were named the Luckman Distinguished Teaching Awards.

#### 1961

John F. Barron (*Economics*)  
 Hector E. Hall (*Physiology*)  
 Kenneth N. Trueblood (*Chemistry and Biochemistry*)

#### 1962

Charles W. Hoffman (*Germanic Languages*)  
 Thomas P. Jenkin (*Political Science*)  
 Ken Nobe (*Chemical Engineering*)

#### 1963

Carl W. Hagge (*Germanic Languages*)  
 Wendell P. Jones (*Education*)  
 Robert H. Sorgenfrey (*Mathematics*)  
 Saul Winstein (*Chemistry and Biochemistry*)

#### 1964

Mostafa A. El-Sayed (*Chemistry and Biochemistry*)  
 Leon Howard (*English*)  
 Moshe F. Rubinstein (*Civil and Environmental Engineering*)

#### 1965

E.A. Carlson (*Biology*)  
 W.R. Hitchcock (*History*)  
 Allen Parducci (*Psychology*)  
 William R. Romig (*Microbiology and Molecular Genetics*)

#### 1966

George A. Bartholomew (*Biology*)  
 William P. Gerberding (*Political Science*)  
 Hans Meyerhoff (*Philosophy*)  
 Joseph E. Spencer (*Geography*)

#### 1967

Basil Gordon (*Mathematics*)  
 J.A.C. Grant (*Political Science*)  
 William Matthews (*English*)  
 David S. Saxon (*Physics and Astronomy*)  
 E.K.L. Upton (*Physics and Astronomy*)

#### 1968

Edward W. Graham (*Chemistry and Biochemistry*)  
 W. James Popham (*Education*)  
 Sydney C. Rittenberg (*Microbiology and Molecular Genetics*)

Robert P. Stockwell (*Linguistics*)  
Fred N. White (*Physiology*)

**1969**

Robert J. Finkelstein (*Physics and Astronomy*)  
Douglas S. Hobbs (*Political Science*)  
J.E. Phillips (*English*)  
Raymond M. Redheffer (*Mathematics*)  
Margret I. Sellers (*Microbiology and Immunology*)

**1970**

Ehrhard Bahr (*Germanic Languages*)  
Joseph Cascarano (*Biology*)  
B. Lamar Johnson (*Education*)  
Daniel Kivelson (*Chemistry and Biochemistry*)  
Richard D. Lehan (*English*)

**1971**

Vernon E. Denny (*Chemical Engineering*)  
Peter N. Ladefoged (*Linguistics*)  
Arthur D. Schwabe (*Medicine*)  
Duane E. Smith (*Political Science*)  
Andreas Tietze (*Near Eastern Languages and Cultures*)

**1972**

Barbara K. Keogh (*Education*)  
James N. Miller (*Microbiology and Immunology*)  
David S. Rodes (*English*)  
Ned A. Shearer (*Speech*)  
Charles A. West (*Chemistry and Biochemistry*)

**1973**

Kirby A. Baker (*Mathematics*)  
David Evans (*Chemistry and Biochemistry*)  
Albert Hoxie (*History*)  
Nhan Levan (*Electrical Engineering*)  
Judith L. Smith (*Physiological Science*)

**1974**

Robert B. Edgerton (*Anthropology, Psychiatry and Biobehavioral Sciences*)  
David S. Eisenberg (*Chemistry and Biochemistry*)  
Victoria A. Fromkin (*Linguistics*)  
Robert C. Neerhout (*Pediatrics*)  
Andrea L. Rich (*Speech*)

**1975**

Alma M. Hawkins (*World Arts and Cultures*)  
Morris Holland (*Psychology*)  
Paul M. Schachter (*Linguistics*)  
Stanley A. Wolpert (*History*)  
Richard W. Young (*Neurobiology*)

**1976**

Marianne Celce-Murcia (*Teaching English as a Second Language, Applied Linguistics*)  
Jesse J. Dukeminier (*Law*)  
George R. Guffey (*English*)  
Marilyn L. Kourilsky (*Education*)  
Chand R. Viswanathan (*Electrical Engineering*)

**1977**

Michael J.B. Allen (*English*)  
Henry M. Cherrick (*Dentistry*)  
Richard C. Maxwell (*Law*)  
J. William Schopf (*Earth and Space Sciences*)  
Verne N. Schumaker (*Chemistry and Biochemistry*)

**1978**

William R. Allen (*Economics*)  
Michael E. Jung (*Chemistry and Biochemistry*)  
J. Fred Weston (*Management*)  
Thomas D. Wickens (*Psychology*)  
Johannes Wilbert (*Anthropology*)

**1979**

Steven Krantz (*Mathematics*)  
Paul I. Rosenthal (*Communication Studies*)  
Christopher Salter (*Geography*)  
James H. White (*Mathematics*)  
Stephen C. Yeazell (*Law*)

**1980**

A.R. Braunmuller (*English*)  
Fredi Chiappelli (*Italian*)  
Kenneth L. Karst (*Law*)  
Richard F. Logan (*Geography*)  
Ronald F. Zernicke (*Physiological Science*)

**1981**

Arnold J. Band (*Near Eastern Languages and Cultures*)  
Charles L. Batten, Jr. (*English*)  
Lucien B. Guze (*Medicine*)  
Gerald Lopez (*Law*)  
Andy Wong (*Dentistry*)

**1982**

Dean Bok (*Neurobiology*)  
Robin S. Liggett (*Architecture and Urban Design, Urban Planning*)  
William Melnitz (*Theater*)  
Joseph K. Perloff (*Medicine*)  
Karen E. Rowe (*English*)

**1983**

Claude Bernard (*Physics and Astronomy*)  
Bryan C. Ellickson (*Economics*)  
Robert S. Elliott (*Electrical Engineering*)  
Albert D. Hutter (*English*)  
Charles M. Knobler (*Chemistry and Biochemistry*)

**1984**

Robert Dallek (*History*)  
Hooshang Kangerloo (*Radiological Sciences*)  
Jeffrey Prager (*Sociology*)  
Stanley Siegel (*Law*)  
Sandra A. Thompson (*Linguistics*)

**1985**

Patricia M. Greenfield (*Psychology*)  
David F. Martin (*Computer Science*)  
Mark W. Plant (*Economics*)  
Ross P. Shideler (*Comparative Literature, Scandinavian Section*)  
William D. Warren (*Law*)

**1986**

Roger A. Gorski (*Neurobiology*)  
Patricia A. Keating (*Linguistics*)  
Leonard Kleinrock (*Computer Science*)  
Martin Wachs (*Urban Planning*)  
Scott L. Waugh (*History*)

**1987**

Lawrence W. Bassett (*Radiological Sciences*)  
E. Bradford Burns (*History*)  
Kenneth W. Graham, Jr. (*Law*)



Howard Suber (*Film and Television*)  
Richard A. Yarborough (*English*)

**1988**

Alison G. Anderson (*Law*)  
Ann L.T. Bergren (*Classics*)  
Charles A. Berst (*English*)  
Michael J. Goldstein (*Psychology*)  
Richard L. Sklar (*Political Science*)

**1989**

John B. Garnett (*Mathematics*)  
Kathleen L. Komar (*Comparative Literature, Germanic Languages*)  
William G. Roy (*Sociology*)  
Stephen Yenser (*English*)  
Eric M. Zolt (*Law*)

**1990**

Peter M. Narins (*Physiological Science*)  
Gary B. Nash (*History*)  
John S. Wiley (*Law*)  
Merlin C. Wittrock (*Education*)  
Ruth Yeazell (*English*)

**1991**

Michael R. Asimow (*Law*)  
Edward G. Berenson (*History*)  
Robert A. Bjork (*Psychology*)  
Margaret FitzSimmons (*Urban Planning*)  
Kenneth R. Lincoln (*English*)

**1992**

Bruce L. Baker (*Psychology*)  
Paul B. Bergman (*Law*)  
Robert B. Goldberg (*Molecular, Cell, and Developmental Biology*)  
Peter E. Kollock (*Sociology*)  
Eugen Weber (*History*)

**1993**

Calvin B. Bedient (*English*)  
Richard B. Kaner (*Chemistry and Biochemistry*)  
Katherine C. King (*Classics*)  
William G. Ouchi (*Management*)  
Bruce Schulman (*History*)

**1994**

David A. Binder (*Law*)  
Jon P. Davidson (*Earth and Space Sciences*)  
Melvin Oliver (*Sociology*)  
Barbara L. Packer (*English*)  
E. Victor Wolfenstein (*Political Science*)

**1995**

Noriko Akatsuka (*East Asian Languages and Cultures*)  
Douglas Hollan (*Anthropology*)  
V.A. Kolve (*English*)  
Jerome Rabow (*Sociology*)  
Paul V. Reale (*Music*)

**1996**

Walter Allen (*Sociology*)  
Judith A. Carney (*Geography*)  
William M. Gelbart (*Chemistry and Biochemistry*)  
Phyllis A. Guzé (*Medicine*)  
Peter B. Hammond (*Anthropology*)

**1997**

Uptal Banerjee (*Molecular, Cell, and Developmental Biology*)  
Christine D. Gutierrez (*Education*)  
Susan McClary (*Musicology*)  
Arnold B. Scheibel (*Neurobiology, Psychiatry and Biobehavioral Sciences*)  
Ivan Szelenyi (*Sociology*)

**1998**

George W. Bernard (*Dentistry*)  
Verónica Cortínez (*Spanish and Portuguese*)  
Wayne A. Dollase (*Earth and Space Sciences*)  
Jayne E. Lewis (*English*)  
Joshua S.S. Muldavin (*Geography*)

**1999**

Grace Ganz Blumberg (*Law*)  
Alessandro Duranti (*Anthropology*)  
Richard H. Gold (*Radiological Sciences*)  
N. Katherine Hayles (*English*)  
Bernard Weiner (*Psychology*)

**2000**

Scott H. Chandler (*Physiological Science*)  
Efraín Kristal (*Spanish and Portuguese*)  
Hector F. Myers (*Psychology*)  
David Sklansky (*Law*)  
Robert N. Watson (*English*)

**2001**

Michael J. Colacurcio (*English*)  
Glen M. MacDonald (*Geography*)  
Kevin Terraciano (*History*)  
James W. Trent (*Education*)  
Brian Walker (*Political Science*)

**2002**

Christopher R. Anderson (*Mathematics*)  
Steven G. Clarke (*Chemistry and Biochemistry*)  
Anne K. Mellor (*English*)  
Lee Todd Miller (*Pediatrics*)  
Grant S. Nelson (*Law*)

**2003**

Joseph J. DiStefano III (*Computer Science, Medicine*)  
Robin L. Garrell (*Chemistry and Biochemistry*)  
A.P. Gonzalez (*Film, Television, and Digital Media*)  
Mitchell B. Morris (*Musicology*)  
Kirk J. Stark (*Law*)

**2004**

David B. Kaplan (*Philosophy*)  
Kathryn A. Morgan (*Classics*)  
Mark R. Morris (*Physics and Astronomy*)  
Jesús Torrecilla (*Spanish and Portuguese*)  
Joan Waugh (*History*)

**2005**

Roger Bourland (*Music*)  
Robert G. Fovell (*Atmospheric and Oceanic Sciences*)  
Elma González (*Ecology and Evolutionary Biology*)  
Elizabeth A. Marchant (*Spanish and Portuguese*)  
Mike Rose (*Education*)  
Keith D. Stolzenbach (*Civil and Environmental Engineering*)

**2006**

Robert A. Gural (*Classics*)

Patricia M. McDonough (*Education*)  
 Albert J. Moore (*Law*)  
 Kenneth A. Nagy (*Ecology and Evolutionary Biology*)  
 David L. Rigby (*Geography*)  
 Geoffrey W. Symcox (*History*)

**2007**

John A. Agnew (*Geography*)  
 Devon Carbado (*Law*)  
 Valerie J. Matsumoto (*Asian American Studies, History*)  
 Behzad Razavi (*Electrical Engineering*)  
 Daniel G. Solórzano (*Education*)  
 Blaire Van Valkenburgh (*Ecology and Evolutionary Biology*)

**2008**

Elizabeth L. Bjork (*Psychology*)  
 Peggy M. Fong (*Ecology and Evolutionary Biology*)  
 Linda C. Garro (*Anthropology*)  
 Teofilo F. Ruiz (*History*)  
 Benjamin J. Schwartz (*Chemistry and Biochemistry*)  
 Robert S. Winter (*Music*)

**2009**

Roger Detels (*Epidemiology*)  
 Luisa M. Iruela-Arispe (*Molecular, Cell, and Developmental Biology*)  
 Yung-Ya Lin (*Chemistry and Biochemistry*)  
 Mark B. Moldwin (*Earth and Space Sciences*)  
 Susan J. Plann (*Applied Linguistics, Spanish and Portuguese*)  
 Janice L. Reiff (*History*)

**2010**

Katsushi Arisaka (*Physics and Astronomy*)  
 Daniel T. Blumstein (*Ecology and Evolutionary Biology*)  
 John T. Caldwell (*Film, Television, and Digital Media*)  
 Albert J. Courey (*Chemistry and Biochemistry*)  
 Jerry Kang (*Law*)  
 Steven P. Reise (*Psychology*)

**2011**

Ann E. Carlson (*Law*)  
 Andrew Christensen (*Psychology*)  
 Ian Krouse (*Music*)  
 Patricia E. Phelps (*Integrative Biology and Physiology*)  
 Yahya Rahmat-Samii (*Electrical Engineering*)  
 Philip W. Rundel (*Ecology and Evolutionary Biology*)

**2012**

C. Cindy Fan (*Geography*)  
 Brandon Koretz (*Geriatric Medicine*)  
 Mignon R. Moore (*Sociology*)  
 Claudia Parodi-Lewin (*Spanish and Portuguese*)  
 Jonathan P. Stewart (*Civil and Environmental Engineering*)  
 Christopher S. Tang (*Management*)

**2013**

Michael F. Carey (*Biological Chemistry*)  
 John J. Colicelli (*Biological Chemistry*)  
 Rachelle H. Crosbie-Watson (*Integrative Biology and Physiology*)  
 Jonathan H. Grossman (*English*)  
 Lynn A. Hunt (*History*)  
 David Delgado Shorter (*World Arts and Cultures/Dance*)  
 Megan McDonnell Sweeney (*Sociology*)

**2014**

Paul H. Barber (*Ecology and Evolutionary Biology*)  
 Earl G. Freymiller (*Dentistry*)  
 Neil K. Garg (*Chemistry and Biochemistry*)

Hilary A. Godwin (*Environmental Health Sciences*)  
 Hiroshi Motomura (*Law*)  
 Felicity A. Nussbaum (*English*)

**2015**

Robert W. Fink (*Musicology*)  
 Alan Garfinkel (*Integrative Biology and Physiology, Medicine*)  
 Thomas W. Gillespie (*Geography*)  
 Tyrone C. Howard (*Education*)  
 Daniel T. Kamei (*Bioengineering*)  
 Joanna C. Schwartz (*Law*)

**2016**

Joseph E. Bristow (*English*)  
 Mark S. Goorsky (*Materials Science and Engineering*)  
 Frank A. Laski (*Molecular, Cell, and Developmental Biology*)  
 Elisabeth C. Le Guin (*Musicology*)  
 James O. Lloyd-Smith (*Ecology and Evolutionary Biology*)  
 Steven A. Margulis (*Civil and Environmental Engineering*)

**2017**

Donald G. Buth (*Ecology and Evolutionary Biology*)  
 Alex C. Purves (*Classics*)  
 Eric Sung (*Dentistry*)  
 Abigail G. Saguy (*Gender Studies, Sociology*)  
 Ingrid Eagly (*Law*)  
 Alvaro Sagasti (*Molecular, Cell, and Developmental Biology*)

**2018**

Lorrie A. Frasure-Yokley (*Political Science*)  
 Christopher M. Kelty (*Society and Genetics*)  
 David W. MacFadyen (*Comparative Literature, Musicology*)  
 Vilma Ortiz (*Sociology*)  
 C.E.B. Reas (*Design/Media Arts*)  
 Sarah Abrevaya Stein (*History*)

**2019**

Anastassia Alexandrova (*Chemistry and Biochemistry*)  
 Kathleen Bawn (*Political Science*)  
 Gregory F. Grether (*Ecology and Evolutionary Biology*)  
 Katsuya Hirano (*History*)  
 Eric S. Sheppard (*Geography*)  
 Stephanie A. White (*Integrative Biology and Physiology*)

**2020**

E. Tendayi Achiume (*Law*)  
 Neveen S. El-Farra (*Medicine*)  
 MarySue V. Heilemann (*Nursing*)  
 David D. Kim (*Germanic Languages*)  
 Tamara J. M. Levitz (*Comparative Literature*)  
 Matthew D. Lieberman (*Psychology*)

**2021**

Alan D. Castel (*Psychology*)  
 Yogita Goyal (*African American Studies, English*)  
 Cheryl I. Harris (*African American Studies, Law*)  
 Thu-huong Nguyen-vo (*Asian American Studies, Asian Languages and Cultures*)  
 Gina R. Poe (*Integrative Biology and Physiology*)  
 Joshua F. Samani (*Physics and Astronomy*)

**2022**

Hannah C. Appel (*Anthropology*)  
 Kyle C. Cavanaugh (*Geography*)  
 Scott L. Cummings (*Law*)  
 Eric J. Deeds (*Integrative Biology and Physiology*)  
 Peter J. Hudson (*African American Studies, History*)

Ellen M. Sletten (*Chemistry and Biochemistry*)

## Non-Academic Senate Recipients

In spring of 1985, the Office of Instructional Development (now **Center for the Advancement of Teaching**) began sponsorship of awards to three instructors who are not members of the Academic Senate. This category includes lecturers, and adjunct and clinical faculty members. All non-Academic Senate faculty members who are nominated by their departments are eligible. Recipients are selected by the Academic Senate Committee on Teaching, using the same criteria as those used for Academic Senate members.

The Luckman Distinguished Teaching Awards Program was established in late 1991 after receipt of a generous gift from Harriet and Charles Luckman. Awards given for 1992 through 1997 were named the Luckman Distinguished Teaching Awards.

### 1985

L. Geoffrey Cowan (*Communication Studies*)  
Mary Elizabeth Perry (*History*)  
Linda Diane Venis (*English*)

### 1986

David Cohen (*Mathematics*)  
Johanna Harris-Heggie (*Music*)  
Paul Von Blum (*Interdisciplinary*)

### 1987

Carol D. Berkowitz (*Pediatrics*)  
Jeffrey I. Cole (*Communication Studies*)  
Cheryl Giuliano (*Writing Programs*)

### 1988

Jeanne Gunner (*Writing Programs*)  
Art Huffman (*Physics and Astronomy*)  
David G. Kay (*Computer Science*)

### 1989

S. Scott Bartchy (*History*)  
Bonnie Lisle (*Writing Programs*)  
Kenneth R. Pfeiffer (*Civil Engineering, Psychology*)

### 1990

Lisa Gerrard (*Writing Programs*)  
Andres Durstenfeld (*Biology*)  
Dorothy Phillips (*Physiological Science*)

### 1991

Marde S. Gregory (*Speech*)  
Betty A. Luceigh (*Chemistry and Biochemistry*)  
Cheryl Pfoff (*Writing Programs*)

### 1992

Janet Goodwin (*Applied Linguistics, Teaching English as a Second Language*)  
Janette Lewis (*Writing Programs*)  
Yihua Wang (*East Asian Languages and Cultures*)

### 1993

Stephen Dickey (*English*)  
Sondra Hale (*Anthropology*)  
Jutta Landa (*Germanic Languages*)

### 1994

Steven K. Derian (*Law*)  
Linda Jensen (*Applied Linguistics, Teaching English as a Second Language*)  
Shelby Popham (*Writing Programs*)

### 1995

Nicholas Collaros (*French*)  
Kristine S. Knaplund (*Law*)  
Christopher Mott (*English*)

### 1996

Scott Bowman (*Political Science*)  
Timothy Tangherlini (*Scandinavian Section*)  
G. Jennifer Wilson (*Honors, Undergraduate Programs*)

### 1997

William McDonald (*Film and Television*)  
Stuart Slavin (*Pediatrics*)  
Sung-Ock Sohn (*East Asian Languages and Cultures*)

### 1998

Paul Frymer (*Political Science*)  
George Gadda (*Writing Programs*)  
Julie Giese (*English*)

### 1999

Patricia Gilmore-Jaffe (*Writing Programs*)  
Emily Schiller (*English*)  
Scott Votey (*Emergency Medicine*)

### 2000

Nicole Dufresne (*French*)  
Thomas Holm (*Law*)  
Richard P. Usatine (*Family Medicine*)

### 2001

George Leddy (*Geography, International Development Studies*)  
Sandra Mano (*Writing Programs*)  
L. Jean Perry (*Molecular, Cell, and Developmental Biology*)

### 2002

Steven Hardinger (*Chemistry and Biochemistry*)  
Colleen K. Keenan (*Nursing*)  
Cynthia Merrill (*Writing Programs*)

### 2003

Marjorie A. Bates (*Chemistry and Biochemistry*)  
Anita McCormick (*Writing Programs*)  
Richard Stevenson III (*Dentistry*)

### 2004

Andrew Hsu (*Philosophy*)  
Kimberly Jansma (*French and Francophone Studies*)  
Jennifer Westbay (*Writing Programs*)

### 2005

Susan Griffin (*Writing Programs*)  
William Grisham (*Psychology*)  
Anahid Keshishian (*Near Eastern Languages and Cultures*)

### 2006

Roger E. Bohman (*Molecular, Cell, and Developmental Biology*)  
Jo Ann Damron-Rodriguez (*Social Welfare*)  
Gerald Wilson (*Ethnomusicology*)

**2007**

Nancy Ezer (*Near Eastern Languages and Cultures*)  
 Fred A. Hagigi (*Health Services*)  
 Eric Marin (*Film, Television, and Digital Media*)

**2008**

Leigh C. Harris (*Writing Programs*)  
 Chi Li (*Ethnomusicology*)  
 Robert B. Trelease (*Pathology and Laboratory Medicine*)

**2009**

Brent Corbin (*Physics and Astronomy*)  
 Laurence Lavelle (*Chemistry and Biochemistry*)  
 Fariba Younai (*Dentistry*)

**2010**

Patrick D. Goodman (*Law*)  
 Amy H. Kaji (*Medicine*)  
 Rory M. Kelly (*Film, Television, and Digital Media*)

**2011**

Latifah E. Hagigi (*Near Eastern Languages and Cultures*)  
 Dario Nardi (*Anthropology*)  
 John (Jay) Phelan (*Life Sciences Core Curriculum*)

**2012**

Stuart Biegel (*Education*)  
 Ronald Cooper (*Integrative Biology and Physiology*)  
 Michael Lazarus (*Medicine*)

**2013**

Randall J. Fallows (*Writing Programs*)  
 Ganna Kudyma (*Slavic Languages and Literatures*)  
 Joan R. Schleper (*Nursing*)

**2014**

Teddi L. Chichester (*Writing Programs*)  
 Robert F. Foster (*Management*)  
 Mitchem A. Huehls (*English*)

**2015**

Mary Paige Greene (*Mathematics*)  
 Eric H. Sussman (*Management*)  
 Pavel Wonsowicz (*Law*)

**2016**

Ting-Ling Chang (*Dentistry*)  
 Gregory J. Rubinson (*Writing Programs*)  
 Jeremy D. Smoak (*Near Eastern Languages and Cultures*)

**2017**

Mary F. Corey (*History*)  
 Benjamin James Lewis (*Linguistics*)  
 Jason D. Napolitano (*Medicine*)

**2018**

Karen J. Cunningham (*English*)  
 Zhao Li (*Chemistry and Biochemistry*)  
 Dana Cairns Watson (*Writing Programs*)

**2019**

Jennifer Casey (*Chemistry and Biochemistry*)  
 Juliet A. Falce-Robinson (*Spanish and Portuguese*)  
 Jorja J. Leap (*Social Welfare*)

**2020**

Cindy C. Kratzer (*Education*)  
 John G. Branstetter (*Political Science*)  
 Margaret E. Davis (*Writing Programs*)

**2021**

Justin B. Bernstein (*Law*)  
 Anthony R. Friscia (*Integrative Biology and Physiology*)  
 Tara L. Prescott-Johnson (*Writing Programs*)

**2022**

Carey S. Nachenberg (*Computer Science*)  
 Diana Rigueur (*Molecular, Cell, and Developmental Biology*)  
 Laurel A. Westrup (*Writing Programs*)

## Gold Shield Faculty Prize

The \$30,000 Gold Shield Faculty Prize, an award for academic excellence, was created by the Gold Shield Alumnae of UCLA in celebration of their fiftieth anniversary in 1986. The prize is funded by an endowment of \$250,000 raised by Gold Shield for this purpose, which has grown to over \$450,000. Guidelines provide that the prize “recognize and reward UCLA faculty members who have demonstrated extraordinary accomplishment in teaching and in research or creative activity...and who have made a significant contribution to undergraduate education.” Preference for recipients is given to faculty members in mid-career, who do not often receive the extra professional incentives available to distinguished senior faculty.

The Gold Shield Faculty Prize is awarded to each recipient for scholarly use. The awardee is selected every year by a committee of peers appointed by the Academic Senate. Student and Gold Shield representatives are included. Recipients must come from fields that have undergraduate programs at UCLA.

**1986-88**

Michael E. Jung (*Chemistry and Biochemistry*)

**1988-90**

Patricia M. Greenfield (*Psychology*)

**1990-92**

Jeffrey C. Alexander (*Sociology*)

**1992-94**

J. William Schopf (*Earth and Space Sciences*)

**1994-96**

Albert R. Braunmuller (*English*)

**1996-98**

Peter M. Narins (*Physiological Science*)

**1998-00**

Robert B. Goldberg (*Molecular, Cell, and Developmental Biology*)

**2000-02**

Utpal Banerjee (*Molecular, Cell, and Developmental Biology*)

**2002-04**

Richard B. Kaner (*Chemistry and Biochemistry*)



**2004-06**Andrea M. Ghez (*Physics and Astronomy*)**2006-08**Robert N. Watson (*English*)**2007-09**William J. Kaiser (*Electrical Engineering*)**2008-10**Alicia Gaspar de Alba (*Chicana and Chicano Studies*)**2009-11**Robin L. Garrell (*Chemistry and Biochemistry*)**2010-12**David H. Gere (*World Arts and Cultures*)**2011-13**Matthew D. Lieberman (*Psychology*)**2012-14**Kevin B. Terraciano (*History*)**2013-15**Luisa M. Iruela-Arispe (*Molecular, Cell, and Developmental Biology*)**2014-16**Brenda Stevenson (*History*)**2015-17**Neil K. Garg (*Chemistry and Biochemistry*)**2016-18**Charlene Villaseñor Black (*Art History*)**2017-19**Daniel T. Blumstein (*Ecology and Evolutionary Biology*)**2018-20**Daniel M.T. Fessler (*Anthropology*)**2019-21**Paul H. Barber (*Ecology and Evolutionary Biology, Environment and Sustainability*)**2020-22**Janet M. O'Shea (*World Arts and Cultures/Dance*)

## Nobel Laureates

In accordance with Alfred Nobel's will, Nobel Prizes are awarded to "those who, during the preceding year, have conferred the greatest benefit to humankind." Considered among the most prestigious awards in their field, Nobel Prizes are

awarded in the fields of chemistry, economics, literature, peace, physics, and physiology or medicine. Since their 1901 inception, Nobel Prizes have been awarded to University of California faculty 71 times. Of those, seven UCLA professors have been so honored.

Willard F. Libby, 1908–1980 (*Chemistry*), 1960

Julian S. Schwinger, 1918–1994 (*Physics*), 1965

Donald J. Cram, 1919–2001 (*Chemistry*), 1987

Paul D. Boyer, 1918–2018 (*Chemistry*), 1997

**Louis J. Ignarro**, 1941– (*Physiology or Medicine*), 1998

Lloyd S. Shapley, 1923–2016 (*Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel*), 2012

**Andrea M. Ghez**, 1965– (*Physics*), 2020

## UCLA University Professors

The title University Professor is reserved for scholars of international distinction, who are recognized and respected as teachers of exceptional ability. Appointments may be made from distinguished tenured faculty. University Professors are appointed by the Regents, at the recommendation of the president after consultation with the chancellor and Academic Senate of the appointee's home campus.

In over 50 years, only 40 professors throughout the UC system have ever been appointed University Professor. Since 1972, six UCLA faculty have been given this honor, including one active UCLA faculty member.

Donald J. Cram, 1919–2001 (*Chemistry and Biochemistry*), 1988

Robert B. Edgerton, 1931–2016 (*Psychiatry and Biobehavioral Sciences*), 1996

M. Frederick Hawthorne, 1928–2021 (*Chemistry and Biochemistry*), 1998

Julian S. Schwinger, 1918–1994 (*Physics*), 1980

Lynn Townsend White, Jr., 1907–1987 (*History*), 1972

**Owen N. Witte**, 1949– (*Microbiology, Immunology, and Molecular Genetics*), 2016

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